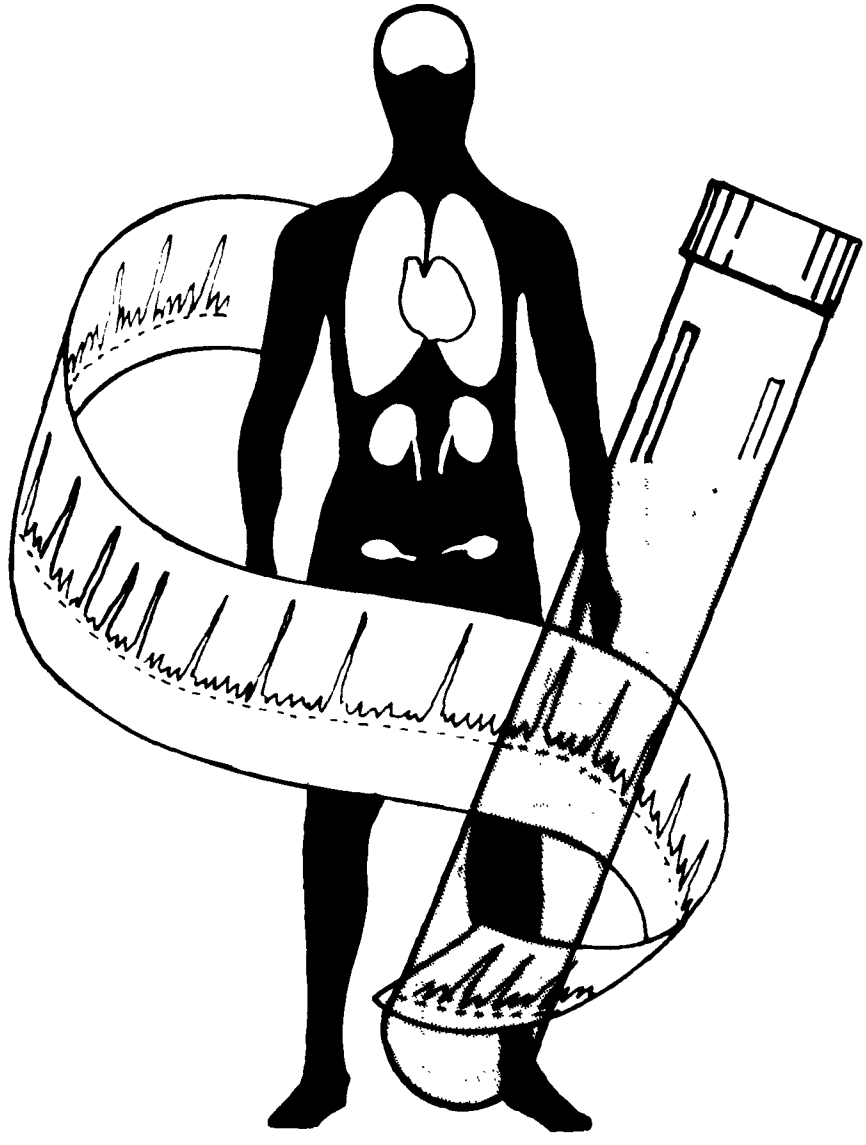
560581008C2

Chemicals Identified In Human Biological Media, A Data Base

Third Annual Report
October 1981



Volume III Part 2

Printed in the United States of America. Available from
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road, Springfield, Virginia 22161
NTIS price codes—Printed Copy: A22 Microfiche A01

This report was prepared under contract to an agency of the United States Government. Neither the United States Government nor any of their employees, contractors, subcontractors, or their employees, makes any warranty, express or implied, nor assumes any legal liability or responsibility for any third party's use or the results of such use of any information, apparatus, product, or process disclosed in this report, nor represents that its use by such third party would not infringe privately owned rights.

Publication of the data in this document does not signify that the contents necessarily reflect the joint or separate views and policies of each sponsoring agency. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

EPA 560/5-81-008A
ORNL/EIS-163/V3-P2

CHEMICALS IDENTIFIED IN HUMAN BIOLOGICAL MEDIA, A DATA BASE

Third Annual Report, October 1981
Volume III, Part 2
Records 3501-5271

Compiled by

M. Virginia Cone, Margaret F. Baldauf,
and Fay M. Martin

Chemical Effects Information Center
Information Center Complex
Information Division
OAK RIDGE NATIONAL LABORATORY
Oak Ridge, Tennessee 37830
operated by
UNION CARBIDE CORPORATION
for the
DEPARTMENT OF ENERGY
Contract No. W-7405-eng-26

This effort was accomplished under the aegis of the Interagency Collaborative Group on Environmental Carcinogenesis, National Cancer Institute, National Institutes of Health, Chairperson, Dr. Herman F. Kraybill.

Date Published -- December 1981

Cindy Stroup, Project Officer
Design and Development Branch
Exposure Evaluation Division
Office of Toxic Substances
U.S. Environmental Protection Agency
Washington, D.C. 20460

CONTENTS

Part 1

Acknowledgments v

Introduction 1

Users' Guide 3

Abbreviations for Analytical Methods 7

References for Data Base 9

References for Physical and Chemical Data 51

Appendix A. Journals Searched 55

Appendix B. Chemicals in Data Base (1979-1981) by CAS Preferred Names 59

Appendix C. Chemicals (1981) by CAS Registry Numbers and Preferred Names 83

Appendix D. Cross-Referenced Chemical Lists 103
1. CAS Preferred Names — Common Names 105
2. Common Names — CAS Preferred Names 141

Appendix E. Tissues and Body Fluids in Data Base (1979-1981) 325

Indices 329
Author 331
Corporate Author 347
Tissue 365
Keyword 367

Directory of Chemicals (1981) 377
CAS Preferred Names 379
Formulas 393

Part 2

Data Base
Nondrugs 1
Drugs 345

NONDRUGS

Acetaldehyde
75-07-0
C2-H4-O
FW 44.05, MP -123.5 C, BP 20.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3501 Blood	Inhalation	GC	6	a) 0.403-0.593%X10(E-3) b) 0.545-0.847%X10(E-3)	a) 0.494%X10(E-3) b) 0.661%X10(E-3)	a) No trichloroethylene treatment b) 100 ppm trichloroethylene Range and mean for 6 hr period 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189
3502 Blood	Ingestion		4	a) 5.015-16.387 ug/ml b) 9.160-17.050 ug/ml	a) 10.41 + or - 3.76 ug/ml b) 12.88 + or - 3.31 ug/ml	a) After 0.5 g/kg ethanol, 12 hr after 0.7 mg/kg Ca carbimide b) After 0.5 g/kg ethanol, 4 hr after 0.7 mg/kg Ca carbimide Alcoholics, mean age 32 + or - 12.37 yr, mean body wt 68.74 + or - 22.43 kg, Canada. Increased heart rate, decreased diastolic blood pressure, palpitations, shortness of breath. CANADA; DISEASES; BLOOD; DRUG INTERACTION; DRUG THERAPY; COMPARATIVE EVALUATIONS; ALCOHOLIC BEVERAGES; METABOLISM; METABOLITES; DRUGS	Peachey, J.E. Naglana, S. Robinson, G.M. Remy, M. Brien, J.F. 1981 Clinical Pharmacology and Therapeutics 29(1):40-46
3503 Breath		GC/MS	8	Not detected-79.0 ug/hr	22.7 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3504 Breath		GC-MS	54 (387 samples)	Not given	3.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 45.9% occurrence Lower and upper one-Sigma limits 1.03 and 10.6 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid ethyl ester
141-78-6
C4-H8-02
MW 88.10, MP -83.6 C, BP 77.15 C, VP 100 mm Hg at 27.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3505 Breath		GC/MS	8	Not detected-190.0 ug/hr	35.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3506 Breath		GC-MS	54 (387 samples)	Not given	0.447 ng/l Geometric	Measured at 25 C and 760 mm Hg 13.7% occurrence Lower and upper one-Sigma limits 0.041 and 4.86 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, allyl ester (8 CI)
Acetic acid, 2-propenyl ester (9 CI)
591-87-7
C5-H8-02
MW 100.13, BP 104 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3507 Breath		GC-MS	54 (387 samples)	Not given	0.296 ng/l Geometric	Measured at 25 C and 760 mm Hg 36.9% occurrence Lower and upper one-Sigma limits 0.093 and 0.935 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, butyl ester
123-86-4
C6-H12-O2
MW 116.16, BP 126 C, VP 15 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3508 Breath		GC/MS	8	Not given-41.0 ug/hr	9.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CFLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3509 Breath		GC-MS	54 (387 samples)	Not given	0.200 ng/l Geometric	Measured at 25 C and 760 mm Hg 30.8% occurrence Lower and upper one-Sigma limits 0.055 and 0.739 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE CRGANIC COMPCUNDS; HEALTH HAZARDS; INHALATICN; METABOLISM; METABOLITES; ECPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, octyl ester
112-14-1
C10-H20-O2
MW 172.27, MP -38.5 C, BP 210 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3510 Breath		GC-MS	54 (387 samples)	Not given	0.168 ng/l Geometric	Measured at 25 C and 760 mm Hg 4.1% occurrence Lower and upper one-Sigma limits 0.042 and 0.679 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE CRGANIC COMPCUNDS; HEALTH HAZARDS; INHALATICN; METABOLISM; METABOLITES; ECPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, phenyl- (8 CI)
Benzeneacetic acid (9 CI)
103-82-2
C8-H8-02
MW 136.14, MP 76.7 C, BP 265.5 C, VP 1 mm Hg at 97.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3511 Breath		GC-MS	54 (387 samples)	Not given	0.161 ng/l Geometric	Measured at 25 C and 760 mm Hg 47.3% occurrence Lower and upper one-Sigma limits 0.049 and 0.525 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rididly-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, phenyl-, ethyl ester (8 CI)
Benzeneacetic acid, ethyl ester (9 CI)
101-97-3
C10-H12-02
MW 164.2, MP 276 C, BP 227 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3512 Breath		GC-MS	54 (387 samples)	Not given	0.115 ng/l	Measured at 25 C and 760 mm Hg 36.4% occurrence Lower and upper one-Sigma limits 0.038 and 0.349 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, propyl ester
109-60-4
C5-H10-02
MW 102.13, MP -92.5 C, BP 101.6 C, VP 40 mm Hg at 28.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3513 Breath		GC/MS	8	Not detected-2.0 ug/hr	0.5 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Acetic acid, propyl ester
109-60-4
C5-H10-O2
MW 102.13, MP -92.5 C, BP 101.6 C, VP 40 mm Hg at 28.8 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3514 Breath		GC-MS	54 (387 samples)	Not given	2.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 99.4% occurrence Lower and upper one-Sigma limits 1.1 and 5.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, thio- (8 CI)
Ethanethioic acid (9 CI)
507-09-5
C2-H4-O-S
MW 76.11, MP <-17 C, BP 93 C, VP 1 mm Hg at 60.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3515 Breath		GC-MS	54 (387 samples)	Not given	3.7 ng/l Geometric	Measured at 25 C and 760 mm Hg 20.2% occurrence Lower and upper one-Sigma limits 1.5 and 9.1 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetic acid, trichloro-
76-03-9
C2-H-Cl3-O2
MW 163.40, MP 57-58 C, BP 196-197 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3516 Blood, Plasma	Inhalation		5	a) 6-51 ug/ml b) 0-33 ug/ml	a) Not given b) Not given	a) 10 hr and day 5 of 50 ppm trichloroethylene, 6 hr/day, on 5 consecutive days b) 10 hr and day 5 of 50 ppm trichloroethylene, 6 hr/day, on 5 consecutive days, plus ethanol pretreatment. Ethanol given to maintain blood level of 0.06% Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189

(NEXT PAGE)

Acetic acid, trichloro-
76-03-9
C2-H-C13-02
MW 163.40, MP 57-58 C, BP 196-197 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3517 Urine	Inhalation	GC	5	a) 99-5 mg b) 5-65 mg	a) Not given b) Not given	a) Day 5 and 17 of 50 ppm trichloroethylene, 6 hr/day, on 5 consecutive days. Initial value, 20 mg on day 1 b) 1 and 14 days after 50 ppm trichloroethylene, 6 hr/day, on 5 consecutive days, plus ethanol pretreatment. Final value, 7 mg on day 14 24 hr excretions Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189
3518 Urine		Photometry	2117	Less than 1->500 mg/l	Not given	After exposure to trichloroethylene Data also given for age- and sex-specific mortality from neoplasms and total mortality as compared with mortality of Finnish population. Ages 15-65 yr or more. FINLAND; ADULTS; URINE; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; INDUSTRIAL ATMOSPHERES; METABOLITES	Tola, S. Vilhunen, R. Jarvinen, E. Korkala, M. 1980 Journal of Occupational Medicine 22(11):737-740

Acetoacetic acid, butyl ester (8 CI)
Butanoic acid, 3-oxo-, butyl ester (9 CI)
591-60-6
C8-H14-03
MW 158.20, MP -35.6 C, BP 214 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3519 Breath		GC-MS	54 (387 samples)	Not given	0.192 ng/l Geometric	Measured at 25 C and 760 mm Hg 18.1% occurrence Lower and upper one-Sigma limits 0.059 and 0.613 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetone (8 CI)
2-Propanone (9 CI)
67-64-1
C3-H6-O
MW 58.08, MP -94.6 C, BP 56.48 C, VP 400 mm Hg at 39.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3520 Breath		GC/MS	13	0.22-0.87 ppm	0.52 ppm	Corrected for level in inhaled air Healthy adults SWEDEN; ADULTS; MEASUREMENT METHODS; METHANOL	Jansson, B.O. Larsson, B.T. 1969 Journal of Laboratory and Clinical Methods 74(6):961-966
3521 Breath		GC/MS	8	1.3-2000.0 ug/hr	500.6 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3522 Breath		GC-MS	54 (387 samples)	Not given	101.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 100% occurrence Lower and upper one-Sigma limits 56.6 and 181.7 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234
3523 Breath		GC	a) 5 b) 5	a) Not given b) Not given	a) 309.0 + or - 3.1 nmoles/l b) 20.3 + or - 3.1 nmoles/l	a) Subjects taking 250 mg/day sulfiram b) Controls Significant increase ($P < 0.001$) in drug-treated subjects. Non-fasting subjects, ages 25-44 yr, taking disulfiram for treatment of alcoholism for 1-7 mo. Normal, non-fasting controls, ages 20-55 yr. DRUG THERAPY; MINNESOTA; ADULTS; DRUGS	DeMaster, E.G. Nagaswa, H.T. 1977 Research Communications in Chemical Pathology and Pharmacology 18(2):361-364

Acetonitrile
75-05-8
C2-H3-N
MW 41.05, MP -45 C, BP 81.1 C, VP 100 mm Hg at 27 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3524 Breath		GC-MS	54 (387 samples)	Not given	7.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 19.4% occurrence Lower and upper one-Sigma limits 3.4 and 16.0 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Acetylene, dichloro- (8 CI)
Ethyne, dichloro- (9 CI)
7572-29-4
C2-Cl2
MW 94.94, MP -66 to -68.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3525 Breath		GC-MS	54 (387 samples)	Not given	10.8 ng/l Geometric	Measured at 25 C and 760 mm Hg 11.9% occurence Lower and upper one-Sigma limits 2.8 and 41.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Riddily-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Alanine, 3-(methylthio)-, L- (8 CI)
L-Cysteine, S-methyl- (9 CI)
1187-84-4
C4-H9-N-02-S
MW 135.20

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3526 Urine	Inhalation	CC	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1 g) 17	a) 100-475 mmol b) 200-425 mmol c) 25-90 mmol d) 175-415 mmol e) 240-675 mmol f) 40-150 mmol All are /mol creatinine	a) 336 mmol b) 380 mmol c) 38 mmol d) 289 mmol e) 512 mmol f) 72 mmol g) 45 + or - 23 mmol All are /mol creatinine	a) Methyl chloride exposure, 30-70 ppm b) Methyl chloride exposure, 30-50 ppm c) Methyl chloride exposure, 40-80 ppm d) Methyl chloride exposure, 40-70 ppm e) Methyl chloride exposure, 35-65 ppm f) Methyl chloride exposure, 50-90 ppm g) Control Samples taken 2X/day 7 days Chemical plant workers NETHERLANDS; ADULTS; URINE; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; METABOLITES; CHLORINATED HYDROCARBONS	van Doorn, R. Born, P.J.A. Leijdekkers, C.-M. Henderson, P.T. Reuvers, J. van Bergin, T.J. 1980 International Archives of Occupational and Environmental Health 46:99-109

Alanine, 3-(4-(4-hydroxy-3-iodophenoxy)-3,5-diiodophenyl)-, L- (8 CI)
L-Tyrosine, O-(4-hydroxy-3-iodophenyl)-3,5-diiodo- (9 CI)
6893-02-3
C15-H12-I3-N-04
MW 651.01, MP 236-237 C (dec)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3527 Blood, serum		RIA	a) 243 b) 42 c) 27 d) 22	a) 80-250 ng/100 ml b) 273->1000 ng/100 ml c) < 36-145 ng/100 ml d) 174-410 ng/100 ml	a) 183 ng/100 ml b) Not given c) Not given d) 275 ng/100 ml	a) Euthyroid volunteers b) Hyperthyroid patients c) Hypothyroid patients d) Normal, pregnant women Limit of detection, 36 ng/100 ml HORMONES; MEASUREMENT METHODS; BLOOD SERUM; TEXAS	Brown, H.L. Metheany, J. 1978 Journal of Pharmaceutical Sciences 63(8):1214-1217

Allyl alcohol (8 CI)
2-Propen-1-ol (9 CI)
107-18-6
C3-H6-O
MW 58.08, MP -50 C, BP 96-97 C, VP 10 mm Hg at 10.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3528 Breath		GC/MS	8	Not detected-9.5 ug/hr	1.3 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Aluminum
7429-90-5
Al
AtW 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3529 Aorta		NA	2	8.5-20 ug/g (wet wt)	14 + or - 8 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3530 Blood, serum		AAS	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 125 ug/l b) 875 ug/l c) 1280 ug/l d) 125 ug/l	a) Initial measurement b) Peak, day 100 of treatment with desferrioxamine c) Peak, day 230 of treatment with desferrioxamine d) Final measurement, day 290 Levels showed short-term cyclic variations, and long-term upward trend during treatment. Estimated from graph. 36 yr old man with dialysis encephalopathy. Epileptic seizures, myoclonic jerks, aphasia, mutism. Dialysis encephalopathy, osteodystrophy, proximal myopathy. ALUMINUM; NERVOUS SYSTEM DISEASES; HEMODIALYSIS; METALS; UNITED KINGDOM; BLOOD SERUM	Ackrill, P. Ralston, A.J. Day, J.P. Hodge, K.C. 1980 Lancet 2(8196):692-693
3531 Blood, serum		AAS	a) 44 b) 69 c) 23	a) Not given b) Not given c) Not given	a) 14.15 + or - 12.2 ug/l b) 31.07 + or - 24.6 ug/l c) 58.43 + or - 30.98 ug/l	a) Controls b) Uremic patients on hemodialysis. Dialysate, 7.7 + or - 7.51 ug/l, pH 7.3 c) Uremic patients on intermittent peritoneal dialysis. Dialysate, 10.07 + or - 6.3 ug/l, pH < 5.5 KIDNEY DISEASES; ALUMINUM; METALS; BLOOD SERUM; ITALY; HEMODIALYSIS	Gilli, P. Farinelli, A. Fagioli, F. DeBastiani, P. Buoncristiani, U. 1980 Lancet 2(8197):742-743
3532 Bone		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 3.3 + or - 2.9 mg/kg b) 27.4 + or - 20.9 mg/kg c) 116 + or - 107 mg/kg d) 281 + or - 143 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516

(NEXT PAGE)

Aluminum
7429-90-5
Al
Atw 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3533 Brain		NA		a) 8.0-19 ug/g (wet wt) b) 22-23 ug/g (wet wt) c) 8.9-15 ug/g (wet wt) d) 12-22 ug/g (wet wt)	a) 15 + or - 4 ug/g (wet wt) b) 23 + or - 1 ug/g (wet wt) c) 11 + or - 2 ug/g (wet wt) d) 15 + or - 5 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 5 subject From a group of 61 autopsies, forensic medical examinations, Males, mean age 40.6 yr. Fema mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. of l Health
3534 Brain		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 2.4 + or - 1.3 mg/kg b) 4.1 + or - 1.7 mg/kg c) 8.5 + or - 3.5 mg/kg d) 24.5 + or - 9.9 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516
3535 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3536 Hair		NA	a) 42 b) 40	a) 1-17 ug/g b) <1-29 ug/g	a) 5 ug/g b) 5 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

(NEXT PAGE)

Aluminum
7429-90-5
Al
AtW 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3537 Heart		NA	a) 4 b) 2	a) 4.7-26 ug/g (wet wt) b) 23-34 ug/g (wet wt)	16 + or - 9 ug/g (wet wt) b) 29 + or - 8 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
3538 Heart		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 1.0 + or - 0.8 mg/kg b) 6.9 + or - 10.6 mg/kg c) 22.5 + or - 20.5 mg/kg d) 42.7 + or - 22.9 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516
3539 Kidney		NA	a) 6 b) 2	a) 10-41 ug/g (wet wt) b) 12-12 ug/g (wet wt)	a) 20 + or - 11 ug/g (wet wt) b) 12 + or - 0 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Aluminum
7429-90-5
Al
AtW 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3540 Liver		NA	a) 9 b) 3	a) 10-25 ug/g (wet wt) b) 5.5-20 ug/g (wet wt)	a) 18 + or - 6 ug/g (wet wt) b) 15 + or - 7 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3541 Liver		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 4.1 + or - 1.7 mg/kg b) 25.5 + or - 33.1 mg/kg c) 161 + or - 124 mg/kg d) 301 + or - 214 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516
3542 Lung		NA	a) 2 b) 2	a) 18-100 ug/g (wet wt) b) 10-23 ug/g (wet wt)	a) 59 + or - 58 ug/g (wet wt) b) 17 + or - 9 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3543 Lung		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 43 + or - 43 mg/kg b) 75.2 + or - 77.3 mg/kg c) 89.5 + or - 76.8 mg/kg d) 215 + or - 220 mg/kg Defatted samples.	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516

(NEXT PAGE)

Aluminum
7429-90-5
Al
Atm 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3544 Muscle		NA	a) 8 b) 8	a) 8.3-16 ug/g (wet wt) b) 7.8-29 ug/g (wet wt)	a) 13 + or - 3 ug/g (wet wt) b) 17 + or - 7 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3545 Muscle		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 1.2 + or - 1.2 mg/kg b) 2.6 + or - 3.1 mg/kg c) 9.1 + or - 14.6 mg/kg d) 14.9 + or - 13.7 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516
3546 Pancreas		NA	a) 5 b) 2	a) 8.3-30 ug/g (wet wt) b) 18-25 ug/g (wet wt)	a) 15 + or - 9 ug/g (wet wt) b) 22 + or - 5 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Aluminum
7429-90-5
Al
At# 26.98154, MP 660 C, BP 2327 C, VP 1 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3547 Spleen		NA	a) 5 b) 3	a) 6.7-25 ug/g (wet wt) b) 16-44 ug/g (wet wt)	a) 14 + or - 8 ug/g (wet wt) b) 26 + or - 16 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCHIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3548 Spleen		AAS	a) 16 b) 30 c) 57 d) 38	a) Not given b) Not given c) Not given d) Not given	a) 2.6 + or - 2.1 mg/kg b) 35.3 + or - 72.3 mg/kg c) 243 + or - 250 mg/kg d) 493 + or - 463 mg/kg Defatted samples	a) Controls from U.S. b) Nondialyzed patients c) Dialyzed patients d) Dialyzed patients with encephalopathy Uremic patients in U.S. and Australia. Some died of dialysis encephalopathy. AUSTRALIA; UNITED STATES; AUTOPSIES; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES; BONES; BRAIN; HEART; LIVER; LUNGS; MUSCLES; SPLEEN; HEMODIALYSIS; ALUMINUM; METALS	Alfrey, A.C. Hegg, A. Craswell, P. 1980 American Journal of Clinical Nutrition 33:1509-1516

Amphiboles
1318-09-8
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3549 Intestine	Ingestion	EM	a) 21 b) 32	a) Not given b) Not given	a) 0 b) 3.20X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Autopsies, jejunum wall 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.F. 1980 Environmental Research 21:85-93

(NEXT PAGE)

Amphiboles
1318-09-8
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3550 Liver	Ingestion	EM		a) Not given b) Not given	a) 0.36X10(E-5) fibers/g b) 5.86X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Autopsies 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.F. 1980 Environmental Research 21:85-93
3551 Lung	Ingestion	EM	a) 20 b) 32	a) Not given b) Not given	a) 0.51X10(E-5) fibers/g b) 16.21X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Autopsies 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.F. 1980 Environmental Research 21:85-93

Aniline, 4,4'-methylenebis(2-chloro- (8 CI)
Benzenamine, 4,4'-methylenebis(2-chloro- (9 CI)
101-14-4
C13-H12-C12-N2
MW 267.2

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3552 Urine	Inhalation Dermal	Colorimetry	4	0.04-3.8 mg/l	Not given	Air concentrations only slightly above threshold of detection (0.01 mg/cu m). Exposed workers, New Jersey OCCUPATIONAL HAZARDS; URINE; CHLORINE ORGANIC COMPOUNDS; MEASUREMENT METHODS; INDUSTRIAL HYGIENE	Linch, A.L. 1974 American Industrial Hygiene Association Journal 35:426-432

Antimony
7440-36-0
Sb
AtW 121.75, BP 630 C, BP 1635 C, VP 1 mm Hg at 886 C, 10 mm Hg at 960

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3553 Aorta		NA	3	Not given	0.01 + or - 0.02 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3554 Brain		NA		a) Not given b) None detected	a) 0.01 + or - 0.02 ug/g (wet wt) b) None detected	a) Females, cerebrum, 4 subjects b) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3555 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Antimony
7440-36-0
Sb
AtW 121.75, MP 630 C, BP 1635 C, VP 1 mm Hg at 886 C, 10 mm Hg at 960

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3556 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
3557 Heart		NA	a) 10 b) 4	a) Not given b) Not given	a) 0.01 + or - 0.02 ug/g (wet wt) b) 0.02 + or - 0.02 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3558 Kidney		NA	a) 22 b) 3	a) Not given b) Not given	a) 0.01 + or - 0.03 ug/g (wet wt) b) 0.01 + or - 0.02 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Antimony
7440-36-0
Sb
AtW 121.75, MP 630 C, BP 1635 C, VP 1 mm Hg at 886 C, 10 mm Hg at 960

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3559 Kidney		NA	a) 8 b) 9 c) 11	a) 0.0010-0.042 ug/g b) 0.0010-0.044 ug/g c) 0.0020-0.047 ug/g Wet wt	a) 0.0040 ug/g b) 0.0018 ug/g c) 0.012 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3560 Liver		NA	8	Not given	0.02 + or - 0.05 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3561 Liver		NA	a) 8 b) 9 c) 11	a) 0.0010-0.036 ug/g b) 0.0020-0.046 ug/g c) 0.0020-0.097 ug/g Wet wt	a) 0.0060 ug/g b) 0.011 ug/g c) 0.013 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Antimony
7440-36-0
Sb
AtW 121.75, MP 630 C, BP 1635 C, VP 1 mm Hg at 886 C, 10 mm Hg at 960

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3562 Lung		NA	a) 3 b) 2	a) 0.22-0.52 ug/g (wet wt) b) Not given	a) 0.33 + or - 0.17 ug/g (wet wt) b) 0.28 + or - 0.40 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3563 Lung		NA	a) 9 b) 13 c) 23	a) 0.011-0.067 ug/g b) 0.033-0.68 ug/g c) 0.023-2.6 ug/g Wet wt	a) 0.029 ug/g b) 0.27 ug/g c) 0.32 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3564 Muscle		NA	a) 5 b) 8	a) Not given b) Not given	a) 0.01 + or - 0.01 ug/g (wet wt) b) 0.02 + or - 0.02 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Antimony
7440-36-0
Sb
AtW 121.75, MP 630 C, BP 1635 C, VP 1 mm Hg at 886 C, 10 mm Hg at 960

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3565 Pancreas		NA	a) 6 b) 3	a) Not given b) Not given	a) 0.01 + or - 0.02 ug/g (wet wt) b) 0.01 + or - 0.01 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3566 Spleen		NA	a) 9 b) 3	a) Not given b) Not given	a) 0.03 + or - 0.08 ug/g (wet wt) b) 0.01 + or - 0.01 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Arcclor 1260
11096-82-5
EXACT FORMULA UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3567 Blood, whole		GC-EC	a) 36 b) 12	a) Not applicable b) Not detected	a) 8 ng/g b) Not detected	a) Love Canal residents, 1 positive sample b) Volunteers Mean of positive samples. Limit of measurement, 4.4 ug/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3568 Aorta		NA	2	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3569 Blood		Colorimetry	1	Not applicable	1.3 ug/g	Death involving As. Tissue specimens limited in some cases by prior autopsies. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; SKIN; NAILS; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3570 Bone		Colorimetry	5	0.4-2.0 ug/g	1.3 ug/g	Deaths involving As. Normals, 0.1 and 0.24 ug/g (secondary reference). Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; NAILS; SKIN; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223
3571 Brain		NA		a) None detected b) None detected c) None detected d) < or = 1.3 ug/g (wet wt)	a) None detected b) None detected c) None detected d) 0.31 + or - 0.54 ug/g (wet wt)	a) Males, cerebrum, 13 subjects b) Females, cerebrum, 5 subjects c) Males, cerebellum, 11 subjects d) Females, cerebellum, 7 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
3572 Brain		Colorimetry	2	1.0-2.0 ug/g	1.5 ug/g	Deaths involving As. Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; SKIN; NAILS; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223
3573 Hair						Review. 28 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Arsenic
7440-38-2
As
Atw 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3574 Hair		Colorimetry	3	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) 6.0 ug/g b) 9.0 ug/g c) 27 ug/g d) 10 ug/g e) 15 ug/g	a) Case 1, hair b) Case 2, scalp hair c) Case 3, scalp hair - proximal d) Case 3, scalp hair - distal e) Case 3, whole Deaths involving As. Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; SKIN; NAILS; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.E. 1979 Journal of Analytical Toxicology 3:222-223
3575 Hair	Ingestion Inhalation	NA	9	a) 10.8-76.1 ppm b) 8.26-11.7 ppm c) 3.33-16.0 ppm d) 8.6-63.1 ppm e) 4.22-12.7 ppm f) 5.61-38.5 ppm	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) From head, steel bronze workers b) From head, other workers at factory c) From head, steel bronze workers at other factories d) From pubic area, steel bronze workers e) From pubic area, other workers at factory f) From pubic area, steel bronze workers at other factories Workers in factory where arsine poisoning occurred and in other area factories, U.K. UNITED KINGDOM; ADULTS; METAL POISONING; HAIR; NAILS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; ARSENIC; DUST; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES	Clay, J.E. Dale, I. Cross, J.D. 1977 Journal of the Society of Occupational Medicine 27:102-104
3576 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3577 Heart		NA	a) 10 b) 5	a) < Or = 1.4 ug/g (wet wt) b) None detected	a) 0.14 + or - 0.44 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3578 Kidney		NA	a) 23 b) 3	a) < or = 1.7 ug/g (wet wt) b) < or = 1.4 ug/g (wet wt)	a) 0.14 + or - 0.43 ug/g (wet wt) b) 0.47 + or - 0.81 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3579 Kidney		NA	a) 8 b) 9 c) 9	a) 0.0030-0.014 ug/g b) 0.0020-0.016 ug/g c) 0.0020-0.052 ug/g Wet wt	a) 0.0040 ug/g b) 0.0095 ug/g c) 0.0038 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3580 Liver		NA	a) 15 b) 8	a) < or = 3.2 ug/g (wet wt) b) None detected	a) 0.29 + or - 0.85 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3581 Liver		NA	a) 8 b) 9 c) 10	a) 0.0010-0.013 ug/g b) 0.0030-0.043 ug/g c) 0.0020-0.0090 ug/g Wet wt	a) 0.0030 ug/g b) 0.0085 ug/g c) 0.0040 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3582 Liver		Colorimetry	8	2-56 ug/g	18.6 ug/g	Deaths involving As. Normals, 0.05 and 0.24 ug/g (secondary reference). Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; NAILS; SKIN; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3583 Lung		NA	a) 5 b) 4	a) < or = 5.3 ug/g (wet wt) b) < or = 0.54 ug/g (wet wt)	a) 1.3 + or - 2.3 ug/g (wet wt) b) 0.14 + or - 0.27 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3584 Lung		NA	a) 9 b) 13 c) 22	a) 0.0010-0.018 ug/g b) 0.023-0.013 ug/g c) 0.014-0.21 ug/g Wet wt	a) 0.0080 ug/g b) 0.043 ug/g c) 0.048 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, *exposed to* heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3585 Muscle		NA	a) 5 b) 10	a) < or = 0.50 ug/g (wet wt) b) < or = 0.85 ug/g (wet wt)	a) 0.10 + or - 0.22 ug/g (wet wt) b) 0.09 + or - 0.27 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3586 Muscle		Colorimetry	5	0.8-5.0 ug/g	3.4 ug/g	Deaths involving As. Normal, 0.43 ug/g (secondary reference). Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. Case admitted to emergency room with gastritis died 1 day later after becoming cyanotic and incoherent. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; SKIN; NAILS; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223
3587 Nail	Ingestion Inhalation	NA	9	a) 15.0-188.0 ppm b) 4.97-6.00 ppm c) 6.45-53.3 ppm d) 10.8-60.9 ppm e) 2.98-4.81 ppm f) 1.06-5.79 ppm	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) From fingers, steel bronze workers b) From fingers, other workers at factory c) From fingers, steel bronze workers at other factories d) From toes, steel bronze workers e) From toes, other workers at factory f) From toes, steel bronze workers at other factories Workers in factory where arsine poisoning occurred and in other area factories, U.K. UNITED KINGDOM; ADULTS; METAL POISONING; HAIR; NAILS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; ARSENIC; DUST; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES	Clay, J.E. Dale, I. Cross, J.D. 1977 Journal of the Society of Occupational Medicine 27:102-104
3588 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3589 Pancreas		NA	a) 8 b) 4	a) < or = 1.3 ug/g (wet wt) b) None detected	a) 0.28 + or - 0.48 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3590 Skin		Colorimetry	4	0.4-1.0 ug/g	0.66 ug/g	Deaths involving As. Normal 0.59 ug/g (secondary reference). Tissue specimens limited in some cases by prior autopsies. 11 exhumed bodies buried 2 wk-97 yr. NORTH CAROLINA; AUTOPSIES; CADAVERS; METAL POISONING; BLOOD; BONES; BRAIN; HAIR; LIVER; MUSCLES; SKIN; NAILS; MEASUREMENT METHODS; METALS; FORENSIC MEDICINE	McBay, A.J. Hudson, R.P. Boling, V.R. 1979 Journal of Analytical Toxicology 3:222-223
3591 Spleen		NA	a) 10 b) 6	a) < or = 0.55 ug/g (wet wt) b) None detected	a) 0.07 + or - 0.18 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Arsenic
7440-38-2
As
AtW 74.9216, MP 817 C at 28 atm, BP 613 C (sublimes), VP 1 mm Hg at 380 C, 10 mm Hg at 440 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3592 Urine				a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 0.8 ug/g creatinine b) 2.2 ug/g creatinine c) 31 ug/g creatinine d) 17.5 ug/g creatinine e) 37 ug/g creatinine f) 5 ug/g creatinine g) 7 ug/g creatinine Medians	a) 9 rural children, inorganic As b) 14 children living < 1 km from smelter, inorganic As c) 17 boys living < 1 km from smelter, total As d) 23 boys, 2.5 km from smelter, total As e) 16 girls, 2.5 km from smelter, total As f) 21 rural boys, total As g) 22 rural girls, total As c)-g) estimated from graph School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108
3593 Urine		AAS	30	a) 74-934 ug/l b) 91-953 ug/l c) 4.4-23.9 ug/l d) 6.5-42.5 ug/l e) 6.9-25.6 ug/l f) 36-1180 ug/l g) 15.5-113.1 ug/l h) 22-379 ug/l	a) 347.4 ug/l b) 368.8 ug/l c) 14.5 ug/l d) 18.66 ug/l e) 14.73 ug/l f) 382.6 ug/l g) 50.73 ug/l h) 114.3 ug/l	a) Exposed workers, AG-AAS technique b) Exposed workers, ET-AAS technique c) Controls, AG-AAS technique d) Controls, ET-AAS technique e) Mediterranean workers, AG-AAS technique f) Mediterranean workers, ET-AAS technique g) Belgian workers, AG-AAS technique h) Belgian workers, ET-AAS technique Arsine generation-AAS (AG-AAS) Electrothermal-AAS (ET-AAS) 24 hr urines 5 workers exposed to As203 and 5 controls. 10 Mediterraneans, 10 Belgian, both possibly exposed to inorganic As but different fish consumption. Data available for volunteers and attempted suicides. BELGIUM; URINE; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; ARSENIC; ARSENIC ORGANIC COMPOUNDS; DIETS; INDUSTRIAL PLANTS; MINERAL METABOLISM	Buchet, J.P. Lauwerys, R. Roels, H. 1980 International Archives of Occupational and Environmental Health 46:11-29

Arsine
7784-42-1
As-H3
MW 77.93, MP -117 C, BP -62.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3594 Hair	Inhalation		4	a) 39-236 ppm b) 22-107 ppm	a) 107.3 ppm b) 48.3 ppm	a) After 9 days. Root segment b) After 19 days. 0-1 cm from root 20-51 yr old sailors. Fever, weakness, nausea, vomiting, diarrhea, abdominal pain. Hemoglobinuria, intravascular hemolysis, marrow depression, thrombocytopenia, renal failure, peripheral neuropathy. ARSENIC; HAIR; OCCUPATIONAL HAZARDS	Wilkinson, S.P. McHugh, P. Horsley, S. Tubbs, H. Lewis, M. Thould, A. Winterton, M. Parsons, V. Williams, R. 1975 British Medical Journal 3(5983):559-563

Arsine oxide, hydroxydimethyl- (8 CI)
Arsinic acid, dimethyl- (9 CI)
75-60-5
C2-H7-As-O2
MW 137.99, MP 200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3595 Urine			a) 9 b) 14	a) Not given b) Not given	a) 9.2 ug/g creatinine b) 11.2 ug/g creatinine	a) Rural children b) Children near smelter School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3596 Gastric liquid		Microscopy	13	0-2500 ferruginous bodies/20 ml	Not given	33-72 yr olds with 1-50 yr occupational exposure ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Bignon, J. Sebastien, P. Monchaux, G. Bonnaud, G. 1974 INSERM 29:205-218

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3597 Gastric liquid		Microscopy		a) 0-158/20 ml b) 0-4/20 ml c) 0-3/20 ml	a) Not given b) Not given c) Not given	a) Workers handling raw asbestos b) Workers manufacturing asbestos products c) Workers exposed to mixed industrial dusts 33-86 yr olds, with variuos diseases, occupationally exposed to asbestos. ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; OCCUPATIONAL DISEASES; AUTOPSIES; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Chatel, A. Mignon, F. Sebastien, P. Hirsch, A. Bignon, J. Bader, J.-P. Chretien, J. 1978 Gastroenterol Clin Biol 2:459-464
3598 Intestine	Ingestion	EM	a) 21 b) 32	a) Not given b) Not given	a) 150.0X10(E-5) fibers/g b) 14.3X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Autopsies, jejunum 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.F. 1980 Environmental Research 21:85-93
3599 Larynx		Microscopy	5	a) Not applicable b) Not applicable	a) 1 asbestos body b) 12 asbestos bodies	a) 73 yr old insulation worker b) 70 yr old insulation worker No asbestos bodies in 3 of 5 cases or in 10 controls. Autopsies. 3 former asbestos pipe insulation workers and 2 patients with asbestosis, lung cancer and pleural mesotheliosa. Ages 48-73 yr. Controls, ages 53-77 yr. AUTOPSIES; OCCUPATIONAL HAZARDS; NEOPLASMS; DISEASES; ASBESTOS; LUNGS; LARYNX	Roggli, V.L. Greenberg, S.D. McLarty, J.L. Hurst, G.A. Spivey, C.G. Hieger, L.R. 1980 Archives of Otolaryngology 106:533-535

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3600 Larynx	Inhalation	EM Microscopy	2	a) Not applicable b) Not applicable	a) 500 fibers/mg b) 3600 fibers/mg Dry wt	a) Patient 1. Fiber mean length 2.4 u, mean diameter 0.08 u. More chrysotile than amphibole fibers. No ferruginous bodies b) Patient 2. Fiber mean length 3.4 u, mean diameter 0.14 u. More amphibole than chrysotile fibers Normal tissue. Patient 1, age 51 yr. Exposure between ages 13-15 yr in welding factory and between ages 20-40 yr as electric arc welder. Patient 2, smoker, age 58 yr. Heavy exposure in asbestos cement plant, pre-World War 2. Pneumoconiosis, bronchitis. Benign polyp on vocal cord (Patient 1), squamous cell carcinoma of larynx (Patient 2). Lung opacities, costophrenic angle obliteration, pleural wall thickened. FRANCE; ADULTS; CASE HISTORIES; INDUSTRIAL DISEASES; NEOPLASMS; OCCUPATIONAL DISEASES; PNEUMOCONIOSIS; LUNGS; LYMPH NODES; BIOACCUMULATION; FIBERS; INHALATION; ASBESTOS	Hirsch, A. Bignon, J. Sebastien, P. Gaudichet, A. 1979 CHEST 76:697-699
3601 Liver	Ingestion	EM	a) 20 b) 32	a) Not given b) Not given	a) 153.5X10(E-5) fibers/g b) 32.4X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Chrysotile fibers Autopsies 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.P. 1980 Environmental Research 21:85-93
3602 Lung		EM	1	a) 1.4x10(E+7)-3.3x10(E+7) fibers/g b) 2.7x10(E+7)-6.5x10(E+7) fibers/g Dry wt	a) 2.1x10(E+7) fibers/g b) 3.9x10(E+7) fibers/g Dry wt	a) Analyzed at University of Cardiff b) Analyzed by laboratory in Paris Parenchyma from case of pleural mesothelioma Data also for chrysotile fibers. LUNGS; ASBESTOS; NEOPLASMS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; FRANCE	Sebastien, P. Billon, M.A. Janson, X. Bonnaud, G. Bignon, J. 1978 Archives des Maladies Professionnelles, de Medicine du Travail et de Securite Sociale (Paris) 39(4-5):229-248
3603 Lung		Microscopy	13	Not determined-200,000 ferruginous bodies/cu cm	Not given	33-72 yr olds with 1-50 yr occupational exposure ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Bignon, J. Sebastien, P. Monchaux, G. Bonnaud, G. 1974 INSERM 29:205-218

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3604 Lung		EM	1	1.5-3x10(E+6) ferruginous bodies/cc	Not given	Autopsy material Occupationally exposed 66 yr old with pleural mesothelioma. ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; AUTOPSIES; NEOPLASMS; FRANCE	Sebastien, P. Jaurand, M.C. Bonnaud, G. Goni, J. Bignon, J. 1973 Archives des Maladies Professionnelles, de Medecine du Travail et de Securite Sociale (Paris) 34(6):335-344
3605 Lung		Microscopy		a) 200,000-700,000 fibers/cc b) 85-135,000 fibers/cc	a) Not given b) Not given	a) Workers handling raw asbestos b) Workers manufacturing asbestos products 33-86 yr olds, with various diseases, occupationally exposed to asbestos. ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; OCCUPATIONAL DISEASES; AUTOPSIES; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Chatel, A. Mignon, F. Sebastien, P. Hirsch, A. Bignon, J. Bader, J.-P. Chretien, J. 1978 Gastroenterol Clin Biol 2:459-464
3606 Lung		Microscopy	5	64-7,840 asbestos body/g (wet wt)	Not given	Averages of upper and lower lobes, + or - 1 SD. Autopsies. 3 former asbestos pipe insulation workers and 2 patients with asbestosis, lung cancer and pleural mesothelioma. Ages 48-73 yr. Carcinoma, pulmonary fibrosis AUTOPSIES; OCCUPATIONAL HAZARDS; NEOPLASMS; DISEASES; ASBESTOS; LUNGS; LARYNX	Roggli, V.L. Greenberg, S.D. McLarty, J.L. Hurst, G.A. Spivey, C.G. Hieger, L.R. 1980 Archives of Otolaryngology 106:533-535
3607 Lung		Microscopy		a) 1-20 ferruginous bodies/cu m b) 21-100 ferruginous bodies/cu m c) 101-1000 ferruginous bodies/cu m d) >1000 ferruginous bodies/cu m	a) Not given b) Not given c) Not given d) Not given	a) 41 cases b) 38 cases c) 18 cases d) 3 cases No significant correlation with sex or occupation. % of cases with 21-100 bodies/cu m increased after age 60. % of cases with highest density decreased after age 50. 24.7% of cases with highest density lived in Paris. Autopsies, 13-91 yr olds, rural and urban areas, France. Relationship with lung cancer cannot be accurately analyzed because 90% were smokers. FRANCE; ADOLESCENTS; ADULTS; AGE; AUTOPSIES; NEOPLASMS; LUNGS; ASBESTOS; ATMOSPHERE; HEALTH HAZARDS; INHALATION	Bignon, J. Goni, J. Bonnaud, G. Jaurand, M.C. Dufour, G. Pinchon, M.C. 1970 Environmental Research 3:430-442

(NEXT PAGE)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3608 Lung	Ingestion	EM	a) 20 b) 32	a) Not given b) Not given	a) 570.6X10(E-5) fibers/g b) 1143.7X10(E-5) fibers/g Ash wt	a) Controls b) Residents with long term, high level exposure from drinking contaminated water Chrysotile fibers Autopsies 52-89 yr old residents near taconite processing plant, Minnesota. 17-77 yr old controls, Minnesota and Texas. MINNESOTA; TEXAS; AUTOPSIES; INTESTINES; LIVER; LUNGS; DRINKING WATER; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; WATER POLLUTION; ASBESTOS	Carter, R.E. Taylor, W.F. 1980 Environmental Research 21:85-93
3609 Lung	Inhalation	EM Microscopy	1	a) Not applicable b) Not applicable	a) 46 ferruginous bodies/mg b) 3500 fibers/mg Dry wt	Fiber mean length 2.8 u, mean diameter 0.13 u. More amphibole than chrysotile fibers Pulmonary parenchyma samples. 51 yr old patient. Exposure between ages 13-15 yr in welding factory and between ages 20-40 yr as electric arc welder. Pneumoconiosis, bronchitis. Benign polyp on vocal cord. Lung opacities, costophrenic angle obliteration, pleural wall thickened. FRANCE; ADULTS; CASE HISTORIES; INDUSTRIAL DISEASES; NEOPLASMS; OCCUPATIONAL DISEASES; PNEUMOCONIOSIS; LUNGS; LYMPH NODES; BIOACCUMULATION; FIBERS; INHALATION; ASBESTOS	Hirsch, A. Bignon, J. Sebastien, P. Gaudichet, A. 1979 CHEST 76:697-699
3610 Lung	Inhalation		9	1000-10(E+6) ferruginous bodies per cu cm	Not given	Data correlated well with number of fibers in sputum. Asbestos workers, mean age 54 yr. FRANCE; ADULTS; RESPIRATORY SECRETION; INDUSTRIAL HYGIENE; ASBESTOS; OCCUPATIONAL HAZARDS	Bignon, J. Sebastien, P. Jaurand, M.C. Hem, B. 1974 Environmental Health Perspectives 9:155-160
3611 Lung	Inhalation	EM	a) 22 b) 22 c) 22 d) 12 e) 8 f) 14	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 3.7 + or - 1.8 fibers/ng dust b) 4.8 + or - 2.5 fibers/ng dust c) 50 + or - 81 fibers/ng dust d) 171 + or - 201 fibers/ng dust e) 322 + or - 351 fibers/ng dust f) 455 + or - 502 fibers/ng dust	a) Normal tissue b) Spontaneous mesothelioma c) Occupational mesothelioma d) Asbestosis with mesothelioma e) Asbestosis with bronchial carcinoma f) Asbestosis Occupationally exposed workers, Germany GERMANY; AUTOPSIES; INDUSTRIAL DISEASES; LUNGS; ASBESTOS; FIBERS; INHALATION; OCCUPATIONAL HAZARDS	Friedrichs, K.H. Otto, H. 1981 American Industrial Hygiene Association Journal 42(2):150-156

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3612 Lung	Inhalation	Microscopy	21	a) < 0.1-370X10(E+6) fibers/g b) 3.4-11500X10(E+3) fibers/g c) < 0.1-0.4X10(E+6) fibers/g d) 1.0-100X10(E+3) fibers/g e) < 0.1-2.1X10(E+6) fibers/g f) 0-210X10(E+3) fibers/g Dry wt	a) 43.27X10(E+6) fibers/g b) 1783.74X10(E+3) fibers/g c) 0.2X10(E+6) fibers/g d) 34.77X10(E+3) fibers/g e) 0.45X10(E+6) fibers/g f) 28.93X10(E+3) fibers/g Dry wt	a) Uncoated fibers, death from mesothelial tumors b) Coated fibers, death from mesothelial tumors c) Uncoated fibers, death from lung cancer d) Coated fibers, death from lung cancer e) Uncoated fibers, non-cancer deaths f) Coated fibers, non-cancer deaths less than 1% of coated fibers were < 10 um long, 10% exceeded 80 um. Necropsies, 19-88 yr olds. Cancer cases occupationally exposed. United Kingdom. ASBESTOS; LUNGS; CARCINOGEN; COMPARATIVE EVALUATIONS; UNITED KINGDOM; OCCUPATIONAL HAZARDS	Morgan, A. Holmes, A. 1980 British Journal of Industrial Medicine 37:25-32
3613 Lymph node	Inhalation	EM Microscopy	1	a) Not applicable b) Not applicable	a) 0.7 ferruginous bodies/mg b) 6,400 fibers/mg Dry wt	Fiber mean length 3.3 u, mean diameter 0.15 u. More amphibole than chrysotile fibers Mediastinal lymph nodes. 51 yr old patient. Exposure between ages 13-15 yr in welding factory and between ages 20-40 yr as electric arc welder. Pneumoconiosis, bronchitis. Benign polyp on vocal cord. Lung opacities, costophrenic angle obliterated, pleural wall thickened. FRANCE; ADULTS; CASE HISTORIES; INDUSTRIAL DISEASES; NEOPLASMS; OCCUPATIONAL DISEASES; PNEUMOCONIOSIS; LUNGS; LYMPH NODES; BIOACCUMULATION; FIBERS; INHALATION; ASBESTOS	Hirsch, A. Bignon, J. Sebastien, P. Gaudichet, A. 1979 CHEST 76:697-699
3614 Respiratory secretion	Inhalation	EM	a) 8 b) 7 c) 5	a) 20-2000 ferruginous bodies b) 10-20 ferruginous bodies c) 0-10 ferruginous bodies	a) Not given b) Not given c) Not given	a) High risk exposure for 15 yr b) Moderate exposure for 25 yr c) Insignificant exposure for 28 yr Values for sputum Occupationally exposed persons with thoracic pathology related to asbestos Chronic bronchitis in 65% of 18 smokers and the 2 non-smokers. Fibrosis, calcification of pleura, cancer of the lung or pluera. Lesions of small airways found in 80% of cases. FRANCE; INDUSTRIAL DISEASES; NEOPLASMS; OCCUPATIONAL DISEASES; RESPIRATORY SECRETIONS; ASBESTOS; FIBERS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMOKING; TOBACCOS	Di Menza, L. Ruff, F. Bignon, J. Bonnaud, G. Brouet, G. 1976 Annales D'Anatomie Pathologique 21(2):261-268

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3615 Respiratory secretion	Inhalation	EM Microscopy	2	a) Not applicable b) Not applicable c) Not applicable	a) 20 ferruginous bodies/sample b) 3 ferruginous bodies/sample c) 50,000 fibers/sample	a) Patient 1 b) Patient 2 c) Patient 2. Fiber mean length 2.8 u, mean diameter 0.10 u. More chrysotile than amphibole fibers Values for sputum Patient 1, age 51 yr. Exposure between ages 13-15 yr in welding factory and between ages 20-40 yr as electric arc welder. Patient 2, smoker, age 58 yr. Heavy exposure in asbestos cement plant, pre-World War 2. Pneumoconiosis, bronchitis. Benign polyp on vocal cord (Patient 1), squamous cell carcinoma of larynx (Patient 2). Lung opacities, costophrenic angle obliteration, pleural wall thickened. FRANCE; ADULTS; CASE HISTORIES; INDUSTRIAL DISEASES; NEOPLASMS; OCCUPATIONAL DISEASES; PNEUMOCONIOSIS; LUNGS; LYMPH NODES; BIOACCUMULATION; FIBERS; INHALATION; ASBESTOS	Hirsch, A. Bignon, J. Sebastien, P. Gaudichet, A. 1979 CHEST 76:697-699
3616 Respiratory secretion	Inhalation	Microscopy	a) 64 b) 42 c) 16	a) 2-10 ferruginous bodies (FB) b) 2-300 FB c) 3-1500 FB	a) 1 ferruginous body (FB) b) 10 FB c) 100 FB	a) Workers with industrial mixed dust exposure b) Workers manufacturing asbestos products c) Workers handling raw asbestos Values for sputum Estimated from graph 122 male and 3 female industrial workers, mean age 54 yr, France. 7 of 9 patients with mesothelioma, 21 of 23 with lung fibrosis and 16 of 23 with lung carcinoma had ferruginous bodies in their sputum. FRANCE; ADULTS; RESPIRATORY SECRETION; INDUSTRIAL HYGIENE; ASBESTOS; OCCUPATIONAL HAZARDS	Bignon, J. Sebastien, P. Jaurand, M.C. Hem, B. 1974 Environmental Health Perspectives 9:155-160
3617 Sputum		Microscopy	a) 13 b) 16 c) 45 d) 64	a) 0-1850 ferruginous bodies b) Not given c) Not given d) Not given	a) Not given b) 100 ferruginous bodies c) 10 ferruginous bodies d) 1 ferruginous body	a) Preliminary study b) Workers handling raw asbestos c) Workers manufacturing asbestos products d) Workers with mixed industrial dust exposure Controls had no ferruginous bodies Preliminary study of 33-72 yr olds with 1-50 yr occupational exposure. Mean ages for b)-c), 52, 53, 56 yr. ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Bignon, J. Sebastien, P. Monchaux, G. Bonnaud, G. 1974 INSERM 29:205-218

(NEXT PAGE)

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3618 Sputum		EM	1	Not given	300 ferruginous bodies/sample	Occupationally exposed, with pleural mesothelioma 66 yr old man ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; AUTOPSIES; NEOPLASMS; FRANCE	Sebastien, P. Jaurand, M.C. Bonnaud, G. Goni, J. Bignon, J. 1973 Archives des Maladies Professionnelles, de Medecine du Travail et de Securite Sociale (Paris) 34(6):335-344
3619 Sputum		Microscopy		a) 29-523 fibers/sample b) 0-48 fibers/sample c) 0-6 fibers/sample	a) Not given b) Not given c) Not given	a) Workers handling raw asbestos b) Workers manufacturing asbestos products c) Workers exposed to mixed industrial dusts 33-86 yr olds, with various diseases, occupationally exposed to asbestos. ASBESTOS; OCCUPATIONAL HAZARDS; LUNGS; OCCUPATIONAL DISEASES; AUTOPSIES; INDUSTRIAL ATMOSPHERES; DUST; FRANCE	Chatel, A. Bignon, P. Sebastien, P. Hirsch, A. Bignon, J. Bader, J.-P. Chretien, J. 1978 Gastroenterol Clin Biol 2:459-464

Barium
7440-39-3
Ba
AtW 137.34, MP 710 C (approx), BP 1600 C (approx), VP 10 mm Hg at 1049 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3620 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; *AUSTRALIA; MEASUREMENT METHODS;* METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

Benzaldehyde
100-52-7
C7-H6-O
MW 106.12, MP -26 C, BP 179 C, VP 1 mm Hg at 26.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3621 Breath		GC/MS	8	Not detected-1.5 ug/hr	0.2 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3622 Breath		GC-MS	54 (387 samples)	Not given	0.513 ng/l Geometric	Measured at 25 C and 760 mm Hg 25.1% occurrence Lower and upper one-Sigma limits 0.158 and 1.66 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene
71-43-2
C6-H6
MW 78.11, MP 5.51 C, BP 80.093-80.094 C, VP 10 mm Hg at 26.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3623 Breath		GC/MS	8	Not detected-250.0 ug/hr	40.8 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3624 Breath		GC-MS	54 (387 samples)	Not given	4.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 41.1% occurrence Lower and upper one-Sigma limits 1.6 and 11.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene, chloro-
108-90-7
C6-H5-Cl
MW 112.56, MP -45 C, BP 131.7 C, VP 10 mm Hg at 22.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3625 Breath		GC/MS	8	Not given-0.002 ug/hr	0.0003 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Benzene, ethyl-
100-41-4
C8-H10
MW 106.16, MP -94.97 C, BP 136.25 C, VP 10 mm Hg at 25.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3626 Blood	Inhalation	GC	4	0.50-0.80 mg/l	0.6925 mg/l	Measured at end of working day. Mean air levels 34-41 ppm. Laboratory assistants working with organic solvents. OCCUPATIONAL HAZARDS; GERMANY; ADULTS; BLOOD; CARCINOGEN	Angerer, J. Lehnert, G. 1979 International Archives of Occupational and Environmental Health 43:154-150
3627 Breath		GC/MS	8	Not detected-14.0 ug/hr	3.0 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3628 Breath		GC-MS	54 (387 samples)	Not given	1.8 ng/l Geometric	Measured at 25 C and 760 mm Hg 16.5% occurrence Lower and upper one-Sigma limits 0.44 and 7.4 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene, hexachloro-
118-74-1
C6-C16
MW 284.80, MP 231 C, BP 323-326 C, VP 1 mm Hg at 114.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3629 Adipose		GC	60	0.23-10.70 ppm	1.36 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, R.H. 1978 Toxicological European Research 2(2):93-98
3630 Adipose		GC-EC	a) 22 b) 14 c) 6 d) 6 e) 6	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.24 + or - 0.09 mg/kg b) 0.36 + or - 0.24 mg/kg c) 0.12 + or - 0.06 mg/kg d) 0.08 +or - 0.07 mg/kg e) 0.09 + or - 0.03 mg/kg	a) Elderly men b) Elderly women c) Young men d) Young women e) Newborns Perirenal tissue 1976 survey. Autopsies from 3 donor groups, average ages 70 yr, 24 yr, and 25-35 wk, Oslo, Norway. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
3631 Blood	Ingestion Inhalation Dermal			a) 5-1121 ppb b) 30-990 ppb c) 3-600 ppb d) 22-467 ppb e) Not given	a) 310.7 + or - 287.7 ppb b) 311.5 + or - 242.9 ppb c) 159.9 + or - 142.7 ppb d) 170.3 + or - 111.8 ppb e) 0.1 + or - 0.6 ppb	a) 50 exposed workers, 1974 b) 49 exposed workers, 1975 c) 49 exposed workers, 1976 d) 44 exposed workers, 1977 e) 44 controls, 1977 a)-d) analyzed by different laboratories. Employees of a chlorinated solvents plant in Iberville parish, LA, 1974-1977. Controls worked in a polyethylene production plant. No detected differences between exposed and controls studied in 1977. HEXACHLOROBENZENE; FUNGICIDES; BLOOD; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; AGE; RACIAL STUDIES; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; COMPARATIVE EVALUATIONS	Currier, H.F. McClimans, C.D. Barna-Lloyd, G. 1980 Journal of Toxicology and Environmental Health 6:367-377

(NEXT PAGE)

Benzene, hexachloro-
118-74-1
C6-Cl6
MW 284.80, MP 231 C, BP 323-326 C, VP 1 mm Hg at 114.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3632 Blood, whole		GC-EC	a) 35 b) 12	a) 0.1-3 ng/g b) 0.1-1 ng/g	a) 0.6 ng/g b) 0.3 ng/g	a) Love Canal residents, 100% positive samples b) Volunteers, 100% positive samples Limit of measurement, 0.011 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.
3633 Milk		GC-EC GC/MS	10	1.6-17.1 ug/kg	5.9 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olic, K. 1980 Pesticides Monitoring Journal 14(1):1-2
3634 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 5.5 + or - 3.7 ug/kg b) 9.2 + or - 4.0 ug/kg c) 2.7 + or - 1.0 ug/kg d) 3.2 + or - 1.2 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Porsgrunn, non-industrialized fishing community 1976 survey. Significant difference ($P < 0.05$) between sampling sites: Bergen > Oslo > Harstad, Porsgrunn Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63

Benzene, o-dichloro- (8 CI)
Benzene, 1,2-dichloro- (9 CI)
95-50-1
C6-H4-C12
MW 147.0, MP -17.5 C, BP 180-183 C, VP 1 mm Hg at 20.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3635 Breath		GC-MS	54 (387 samples)	Not given	2.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 13.9% occurrence Lower and upper one-Sigma limits 0.83 and 13.5 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene, o-diethyl- (8 CI)
Benzene, 1,2-diethyl- (9 CI)
135-01-3
C10-H14
MW 134.22, MP -31.2 C, BP 183.4 C, VP 1 mm Hg at 22.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3636 Breath		GC-MS	54 (387 samples)	Not given	0.092 ng/l Geometric	Measured at 25 C and 760 mm Hg 30.8% occurrence Lower and upper one-Sigma limits 0.022 and 0.391 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene, p-dichloro- (8 CI)
Benzene, 1,4-dichloro- (9 CI)
106-46-7
C6-H4-C12
MW 147.01, MP 53 C, BP 174.12 C, VP 10 mm Hg at 54.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3637 Adipose	Inhalation	GC/MS	34	0.2-11.7 ug/g (fat basis)	2.3 ug/g (fat basis)	Samples from hospitals and medical examiner's office in Tokyo. JAPAN; ADIPOSE TISSUE; BLOOD; CHLOROBENZENES; PESTICIDES; POLYCHLORINATED BIPHENYLS; ATMOSPHERE	Morita, M. Ohi, G. 1975 Environmental Pollution 8:269-274

(NEXT PAGE)

Benzene, p-dichloro- (8 CI)
Benzene, 1,4-dichloro- (9 CI)
106-46-7
C6-H4-C12
MW 147.01, MP 53 C, BP 174.12 C, VP 10 mm Hg at 54.8 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3638 Blood, whole	Inhalation	GC	6	4-16 ng/ml	9.5 ng/ml	Healthy Japanese, ages 21-35 yr. JAPAN; ADIPOSE TISSUE; BLOOD; CHLOROBENZENES; PESTICIDES; POLYCHLORINATED BIPHENYLS; ATMOSPHERE	Morita, M. Ohi, G. 1975 Environmental Pollution 8:269-274
3639 Breath		GC-MS	54 (387 samples)	Not given	13.6 ng/l Geometric	Measured at 25 C and 760 mm Hg 98.9% occurrence Lower and upper one-Sigma limits 4.8 and 38.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzene, pentachloro-
608-93-5
C6-H-C15
MW 250.34, MP 86 C, BP 277 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3640 Milk		GC-EC GC/MS	6	0-3.4 ug/kg	2.0 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2

Benzene, pentachloronitro-
82-68-8
C6-Cl5-N-02
MW 295.4, MP 146 C, BP 328 C, VP 0.013 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3681 Blood, whole		GC-EC	a) 35 b) 11	a) Not applicable b) Not detected	a) 0.2 ng/g b) Not detected	a) Love Canal residents, 3% (1) positive b) Volunteers Mean of positive samples. Limit of measurement, 0.15 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Benzene, propyl-
103-65-1
C9-H12
MW 120.2, MP -99.5 C, BP 159.2 C, VP 10 mm Hg at 43.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3682 Breath		GC/MS	8	Not detected-6.5 ug/hr	1.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Benzene, trimethyl-
25551-13-7
C9-H12
MW 120.2, MP -25.37 C, BP 176.1 C, VP 100 mm Hg at 108.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3643 Breath		GC/MS	8	Not detected-9.3 ug/hr	1.2 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Benzonitrile
100-47-0
C7-H5-N
MW 103.1, MP -12.8 C, BP 191 C, VP 1 mm Hg at 28.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3644 Breath		GC-MS	54 (387 samples)	Not given	0.105 ng/l Geometric	Measured at 25 C and 760 mm Hg 24.6% occurrence Lower and upper one-Sigma limits 0.029 and 0.374 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Benzylamine (8 CI)
Benzenemethanamine (9 CI)
100-46-9
C7-H9-N
MW 107.2, BP 185 C, VP 1 mm Hg at 29.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3645 Breath		GC-MS	54 (387 samples)	Not given	0.007 ng/l Geometric	Measured at 25 C and 760 mm Hg 12.9% occurrence Lower and upper one-Sigma limits 0.0015 and 0.0327 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Beryllium
7440-41-7
Be
AtW 9.01218, MP 1287 C, BP 2500 C, VP 1 mm Hg at 1520 C, 10 mm Hg at 1860 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3646 Blood		AAS	10	Not given	1.0 + or - 0.4 ng/g	Control values. Increase by factor of 4 for exposed group. 8 persons working 4-6 hr daily in area with BeCl2 leakage and 2 non-exposed controls, Federal Republic of Germany. GERMANY; BLOOD; URINE; BERYLLIUM; METALS; POPULATION EXPOSURE; RATS	Stiefel, T. Schulze, K. Zorn, H. Tolg, G. 1980 Archives of Toxicology 45:81-92
3647 Urine		AAS	a) 2 b) 8	a) Not given b) Not given	a) 0.9 + or - 0.5 ng/g b) 4 ng/g	a) Controls b) Exposed group. Peak at 4 days, estimated from graph. Men working 4-6 hr daily in area with BeCl2 leakage and non-exposed controls, Federal Republic of Germany. GERMANY; BLOOD; URINE; BERYLLIUM; METALS; POPULATION EXPOSURE; RATS	Stiefel, T. Schulze, K. Zorn, H. Tolg, G. 1980 Archives of Toxicology 45:81-92

Biphenyl (8 CI)
1,1'-Biphenyl (9 CI)
92-52-4
C12-H10
MW 154.2, MP 70 C, BP 255 C, VP 1 mm Hg at 70.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3648 Breath		GC-MS	58 (387 samples)	Not given	0.032 ng/l Geometric	Measured at 25 C and 760 mm Hg 28.7% occurrence Lower and upper one-Sigma limits 0.0096 and 0.109 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Biphenyl, chloro (8 CI)
1,1'-Biphenyl, chloro derivs (9 CI)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3649 Adipose		GC/MS	16	1.6-3.2 ug/g (fat basis)	2.1 ug/g (fat basis)	Samples from hospitals and medical examiner's office in Tokyo. JAPAN; ADIPOSE TISSUE; BLOOD; CHLOROBENZENES; PESTICIDES; POLYCHLORINATED BIPHENYLS; ATMOSPHERE	Morita, M. Ohi, G. 1975 Environmental Pollution 8:269-274

(NEXT PAGE)

Biphenyl, chloro (8 CI)
1,1'-Biphenyl, chloro derivs (9 CI)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3650 Adipose			a) 33 b) 1 c) 1	a) Not given b) Not given c) Not given	a) 2.6 + or - 1.90 ppm b) 3.2 ppm, fat basis c) 4.2 ppm, fat basis	a) Hospital patients b) 13 yr old female with Yusho c) 46 yr old male with chronic PCB poisoning Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3651 Adipose		GC-EC	a) 22 b) 14 c) 6 d) 6 e) 6 f) 36	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 2.14 + or - 0.86 mg/kg b) 1.65 + or - 0.83 mg/kg c) 0.92 + or - 0.38 mg/kg d) 0.63 + or - 0.53 mg/kg e) 0.90 + or - 0.42 mg/kg	a) Elderly men b) Elderly women c) Young men d) Young women e) Newborns Perirenal tissue 1976 survey. Significant increase in elderly compared to 1969/70 survey. Autopsies from 3 donor groups, average ages 70 yr, 24 yr, and 25-35 wk, Oslo, Norway. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
3652 Adipose		GC-EC	2	a) Not given b) Not given	a) 200 ppm b) 600 ppm	a) Sample 1 b) Sample 2 Dose and origin unknown Data also for GC/MS, identifying PCBs from pentachlorobiphenyl to decachlorobiphenyl, at least 14 isomers and Cl analogs ADIPOSE TISSUE; MEASUREMENT METHODS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; POPULATION EXPOSURE	Biros, F.J. Walker, A.C. Medbery, A. 1970 Bulletin of Environmental Contamination and Toxicology 5(4):317-323
3653 Blood		GC-EC		a) <0.5-8 ppb b) 1-22 ppb c) 1-12 ppb d) 1-12 ppb e) 1-18 ppb f) 1-23 ppb	a) 3.0 + or - 1.5 ppb b) 3.5 + or - 2.3 ppb c) 3.8 + or - 2.0 ppb d) 3.7 + or - 1.9 ppb e) 3.3 + or - 1.9 ppb f) 3.1 + or - 2.3 ppb	a) 1972, 129 samples b) 1973, 123 samples c) 1974, 117 samples d) 1975, 113 samples e) 1976, 100 samples f) 1977, 101 samples Concentrations highest in 1st parity mothers. 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; LACTATION; BLOOD; MILK; BIOACCUMULATION; PESTICIDES; POLYCHLORINATED BIPHENYLS; ORGANIC CHLORINE COMPOUNDS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15

(NEXT PAGE)

Biphenyl, chloro (8 Cl)
1,1'-Biphenyl, chloro derivs (9 Cl)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3654 Blood		GC	a) 17 b) 16	a) <0.2-12.8 ppb b) 1.7-4.6 ppb	a) 3.8 + or - 3.6 ppb b) 2.8 + or - 0.8 ppb	a) 1 mo-6 yr olds b) Mothers of children Children's blood level varied with length of breast-feeding. Residents of Osaka, Japan. Mothers with no occupational exposure to PCB. POLYCHLORINATED BIPHENYLS; MILK; BLOOD; CHILDREN; FOODS; PESTICIDES; JAPAN	Kuwabara, K. Yakushiji, T. Watanabe, I. Yoshida, S. Koyama, K. Kunita, N. 1979 Bulletin of Environmental Contamination and Toxicology 21:458-462
3655 Blood		GC	37	a) Not given b) Not given c) Not given d) 1.25-4 ppb e) 1.8-0.4 ppb	a) 3 ppb b) 4.8 ppb c) 2.55 ppb d) Not given e) Not given	a) Mothers, 8 mo prepartum, 1977 b) Mothers, 4 mo prepartum, 1977 c) Mothers, 5 mo postpartum, 1977 d) Breast-fed infants, birth and 1 yr. Final value 1.7 ppb at 3 yr e) Bottle-fed infants, birth and 2 yr. Final value 0.5 ppb at 3 yr Values from graphs. Other data for 1974-1976. 17 normal pregnant women, 20 infants. POLYCHLORINATED BIPHENYLS; NEWBORN; PREGNANCY; JAPAN; BLOOD; MILK; LACTATION	Kodama, H. Ota, H. 1980 Archives of Environmental Health 35(2):95-100
3656 Blood	Ingestion	GC-EC	66	11-720 ppb	49 ppb	Patients with skin disease caused by rice oil contaminated with highly-chlorinated PCBs. Tested 9 mo-1 yr after intoxication. Taiwan CHLORINE ORGANIC COMPOUNDS; BIPHENYL COMPOUNDS; FOOD CONTAMINATION; CHINA; SKIN DISEASES; BLOOD	Chen, P.H. Gaw, J.M. Wong, C.K. Chen, C.J. 1980 Bulletin of Environmental Contamination and Toxicology 25:325-329
3657 Blood		GC	a) 24 b) 15 c) 2 d) 37	a) 3-26 ppb b) 2-11 ppb c) Not applicable d) 1-7 ppb	a) 9 ppb b) 4 ppb c) 2 ppb d) 3 ppb	a) Patients - gas chromatogram (GC) pattern peculiar to Yusho b) Patients - GC pattern similar to a) c) Patients - GC pattern similar to d) d) Controls Significance of similarities not discussed in English abstract. Yusho patients, normal controls JAPAN; BLOOD; BIPHENYL COMPOUNDS; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Masuda, Y. Kagawa, R. Shimamura, K. Takada, M. Kuratsune, M. 1974 Fukuoka Medical Journal 65(1):25-27
3658 Blood, plasma	Ingestion	GC	a) 30 b) 18 c) 11	a) Not given b) Not given c) Not given	a) 6.0 ppb b) 10.8 ppb c) 3.7 ppb	a) Yusho children b) Mothers who consumed PCB-contaminated oil c) Control children. Exposed mothers, their offspring, and controls in Japan. Diarrhea, physical dullness, abdominal pain. POLYCHLORINATED BIPHENYLS; BLOOD PLASMA; JAPAN; FOOD CONTAMINATION; CHILDREN	Abe, S. Inoue, Y. Takamatsu, M. 1975 Fukuoka Medical Journal 66(10):605-609

(NEXT PAGE)

Biphenyl, chloro (8 Cl)
1,1'-Biphenyl, chloro derivs (9 Cl)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3659 Blood, plasma		GC	a) 82 b) 15	a) 1-7 ppb b) 2-15 ppb	a) 3.0 + or - 1.3 ppb b) 6.3 + or - 4.0 ppb	a) Controls b) PCB-poisoned patients BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; BLOOD; BLOOD PLASMA; JAPAN	Takamatsu, M. Inoue, Y. Abe, S. 1974 Fukuoka Medical Journal 65(1):28-31
3660 Blood, plasma			a) 33 b) 19 c) 30 d) 1 e) 1 f) 1	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 6.1 + or - 3.52 ppb b) 8.4 + or - 4.26 ppb c) 4.7 + or - 2.17 ppb d) 92 ppb e) 230 ppb f) 5 ppb	a) Hospital patients b) Emaciated persons c) Non-emaciated persons d) 24 yr old male with aplastic anemia and stomach cancer e) 73 yr old male with colon cancer f) 13 yr old female with Yusho Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3661 Blood, plasma		GC	a) 107 b) 151 c) 166 d) 192	a) 0-20.6 ppb b) 0-29.0 ppb c) 0-22.0 ppb d) 0-16.6 ppb	a) 0.3 ppb b) 1.9 ppb c) 2.3 ppb d) 3.1 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Finklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651
3662 Blood, whole		GC	6	2.2-4.0 ng/ml	2.9 ng/ml	Healthy Japanese, ages 21-35 yr. JAPAN; ADIPOSE TISSUE; BLOOD; CHLOROBENZENES; PESTICIDES; POLYCHLORINATED BIPHENYLS; ATMOSPHERE	Morita, M. Ohi, G. 1975 Environmental Pollution 8:269-274
3663 Blood, whole		GC	a) 11 b) 25	a) 1-6 ppb b) 1-12 ppb	a) 2.8 + or - 1.5 ppb b) 4.8 + or - 2.9 ppb	a) Controls b) PCB-poisoned patients BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; BLOOD; BLOOD PLASMA; JAPAN	Takamatsu, M. Inoue, Y. Abe, S. 1974 Fukuoka Medical Journal 65(1):28-31
3664 Kidney			1	Not applicable	36 ppm (fat basis)	24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

(NEXT PAGE)

Biphenyl, chloro (8 CI)
1,1'-Biphenyl, chloro deriva (9 CI)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3665 Liver			1	Not applicable	70 ppm, fat basis	24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; CHEMTOX	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3666 Milk		GC	17	a) Not given b) Not given c) Not given d) Not given	a) 612.5 ppb b) 680.0 ppb c) 482.5 ppb d) 530.0 ppb Fat basis	a) 1 month b) 2 months c) 5 months d) 7 months After parturition in 1977. Estimated from graph. Normal, pregnant women in Japan. POLYCHLORINATED BIPHENYLS; NEWBORN; PREGNANCY; JAPAN; BLOOD; MILK; LACTATION	Kodama, H. Ota, H. 1980 Archives of Environmental Health 35(2):95-100
3667 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 24 + or - 9 ug/kg b) 24 + or - 9 ug/kg c) 29 + or - 8 ug/kg d) 19 + or - 6 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Porsgrunn, non-industrialized fishing community 1976 survey. Significant increase (P < 0.05) in Oslo, Bergen, and Harstad samples compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
3668 Milk						Review of biological impact of PCBs on breast-fed infants and recommendations for nursing mothers JAPAN; ADULTS; INFANTS; SKIN DISEASES; MILK; REVIEW; POLYBROMINATED BIPHENYLS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FIRE RETARDANTS; PCDD CONTAMINATION; FOODS; LACTATION; POPULATION EXPOSURE	Miller, R.W. Finberg, L. 1977 Journal of Pediatrics 90(3):510-512
3669 Milk		GC TLC	8	<0.04-0.1 ppm	0.05 ppm	Highest 2 levels in housewives who had never lived outside Colorado. 19-26 yr olds in 2 Colorado communities with populations of about 45,000, primarily agricultural, light industry. COLORADO; ADULTS; MILK; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS	Savage, E.P. Tessari, J.D. Malberg, J.W. Wheeler, H.W. 1973 Bulletin of Environmental Contamination and Toxicology 9(4):222-226

(NEXT PAGE)

Biphenyl, chloro (8 CI)
1,1'-Biphenyl, chloro derivs (9 CI)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3670 Milk		GC	1,057	a) Trace-5.100 ppm b) 0-< 1 ppm c) 1-< 2 ppm d) 2-< 3 ppm e) > 3 ppm Fat wt basis	a) 1.496 ppm b) Not given c) Not given d) Not given e) Not given Fat wt basis	a) Total, 1977-1978 b) 27% of samples c) 89.5% of samples d) 17.4% of samples e) 6.1% of samples Residents of Michigan MICHIGAN; ADULTS; MILK; POLYCHLORINATED BIPHENYLS; HEALTH HAZARDS; INDUSTRIAL AREAS	Wickizer, T.M. Brilliant, L.B. Copeland, R. Tilden, R. 1981 American Journal of Public Health 71(2):132-137
3671 Milk, whole	Ingestion	GC-EC		a) 0.01-0.10 ppm b) Not given c) Not given d) 0.01-0.14 ppm e) 0.01-0.10 ppm f) 0.01-0.24 ppm	a) 0.032 + or - 0.019 ppm b) 0.038 + or - 0.025 ppm c) 0.040 + or - 0.026 ppm d) 0.036 + or - 0.023 ppm e) 0.033 + or - 0.017 ppm f) 0.039 + or - 0.02 ppm	a) 1972, 141 samples b) 1973, 123 samples c) 1974, 119 samples d) 1975, 113 samples e) 1976, 100 samples f) 1977, 101 samples Levels highest in 1st parity mothers. 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; LACTATION; BLOOD; MILK; BIOACCUMULATION; PESTICIDES; POLYCHLORINATED BIPHENYLS; ORGANIC CHLORINE COMPOUNDS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
3672 Omentum			a) 1 b) 1	a) Not applicable b) Not applicable	a) 140 ppm (fat basis) b) 4.1 ppm (fat basis)	a) 73 yr old male with colon cancer b) 66 yr old male with stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, M. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

Boron
7440-42-8
B
Atw 10.81, MP 2200 C (approx), BP 2550 C, VP 1.56X10(E-5) atm at 2140 C, 1 mm Hg at 2660 C, 10 mm Hg at 3030 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3673 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

Bromine
7726-95-6
Br
Atw 79.904, MP -7.25 C, BP 59.47 C, VP 1 mm Hg at -60 C, 10 mm Hg at -30 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3674 Breath	Inhalation	PIXE	1	40-0.01 ug/cu m	Not given	After automotive Pb halide aerosol exposure. Levels a function of particle size. Extimated from graph. Tidal volume of about 900 cu m and respiratory frequency of 15 cycles/min maintained during 10-min sampling time. BREATH; BROMINE; CALCIUM; CHLORINE; LEAD; AUTOMOTIVE; ATMOSPHERE; PARTICULATES	Desaedeleer, G.G. Winchester, J.W. Environmental Science and Technology 9(10):971-972
3675 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Bromine
7726-95-6
Br
AtW 79.904, MP -7.25 C, BP 59.47 C, VP 1 mm Hg at -60 C, 10 mm Hg at -30 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3676 Hair		NA	a) 42 b) 40	a) 0.7-93.1 ug/g b) 0.3-273.2 ug/g	a) 4.6 ug/g b) 5.0 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

Butane
106-97-8
C4-H10
MW 58.12, MP -138.35 C, BP -0.5 C, VP 2 atm at 18.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3677 Breath		GC/MS	8	Not detected-9.4 ug/hr	3.9 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Butyl alcohol (8 CI)
1-Butanol (9 CI)
71-36-3
C4-H10-O
MW 74.12, BP 117.5 C, VP 5 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3678 Breath		GC/MS	8	Not detected-35.0 ug/hr	7.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Butyl alcohol (8 CI)
1-Butanol (9 CI)
71-36-3
C4-H10-O
MW 74.12, BP 117.5 C, VP 5 mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3679 Breath		GC-MS	54 (387 samples)	Not given	1.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 38.2% occurrence Lower and upper one-Sigma limits 0.41 and 4.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3680 Aorta		NA	3	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
3681 Blood	Inhalation	AAS		0.7-3.8 ug/l	1.5 ug/l	12 samples Direct determination and extraction procedures agree. Welders, garage personnel and putty workers in Swedish airplane factory. INDUSTRIAL POLLUTION; COMPARATIVE EVALUATIONS; CADMIUM; SWEDEN; ADULTS; BLOOD; URINE; BIOACCUMULATION	Lagesson, V. Andrasko, L. 1979 Clinical Chemistry 25(11):1948-1953

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3682 Blood	Inhalation	Electrochem AAS	18	1.19-2.60 ug/100g	Not given	Levels correlated with serum beta-2-microglobulin, r = 0.76, p < 0.05. Values estimated from graph. Exposed and non-exposed workers at a Cd-Ag alloy production plant. Proteinuria/albuminuria, high-exposure group. Reduced tubular reabsorption of phosphate and significantly increased excretion of beta-2-microglobin relative to creatinine, p < 0.01, in high-exposure group. CADMIUM; BLOOD; URINE; JAPAN; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; INDUSTRIAL ATMOSPHERES	Iwao, S. Tsuchiya, K. Sakurai, H. 1980 Journal of Occupational Medicine 22(6):399-402
3683 Blood						A review of research in industrial uses for and environmental effects of Cd, as reported by the International Lead Zinc Organization. REVIEW; CADMIUM; METALS; MEASUREMENT METHODS; IN VIVO ANALYSIS; BLOOD; URINE; KIDNEY DISEASES; BONE DISEASES; OCCUPATIONAL DISEASES; POPULATION EXPOSURE; INDUSTRIAL POLLUTION	Ponikvar, A.L. Volpe, R. 1979 Cadmium Research Digest No. 4, 24 pp.
3684 Blood	Ingestion Inhalation		a) 18 b) 20 c) 40 d) 19 e) 7 f) 43	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.19 ug/100 ml b) 0.16 ug/100 ml c) 0.11 ug/100 ml d) 0.1 ug/100 ml e) 0.09 ug/100 ml f) 0.08 ug/100 ml Medians	a) Boys living < 1 km from smelter b) Girls living < 1 km from smelter c) Children at 2.5 km from smelter d) Urban boys e) Urban girls f) Rural children Estimated from graph School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108
3685 Blood			a) 70 b) 60	a) 0.02-0.45 ug/100 ml b) 0.05-0.55 ug/100 ml	a) 0.12 + or - 0.01 ug/100 ml b) 0.16 + or - 0.01 ug/100 ml (S.E.)	a) Controls b) Residents of polluted area Women, mean age 82.3 yr, from Cd-polluted area (Liege), and controls, mean age 81.1 yr, from Charleroi, Belgium. BLOOD; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; ZINC; METALS; BELGIUM; AGE; POPULATION EXPOSURE; INDUSTRIAL POLLUTION; SMELTERS; KIDNEY DISEASES	Lauwerys, R. Roels, H. Bernard, A. Buchet, J.P. 1980 International Archives of Occupational and Environmental Health 45:271-274
3686 Blood			5	3.3-29.0 ug/l	Not given	Occupationally exposed 6-30 yr. No other details given. 33-64 yr olds, Sweden ADULTS; BLOOD; KIDNEYS; URINE; IN VIVO ANALYSIS; MEASUREMENT METHODS; CADMIUM; OCCUPATIONAL HAZARDS; METALS	Ahlgren, L. Mattsson, S. 1981 Physics in Medicine and Biology 26(1):19-26

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3687 Blood, plasma	Inhalation	AAS	a) 60 b) 45 c) 70	a) 0.05-0.55 ug/100 ml b) 0.01-0.28 ug/100 ml c) 0.02-0.45 ug/100 ml	a) 0.13 ug/100 ml b) 0.04 ug/100 ml c) 0.10 ug/100 ml Geometric	a) Residents of Liege (most polluted area) b) Residents of Brussels (less polluted area) c) Residents of Charleroi (control area) Liege residents differed from Charleroi ($p<0.01$) and from Brussels ($p<0.001$). Healthy subjects >60 yr old, residents of the same areas 25 yr, Belgium BELGIUM; ADULTS; AGE; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; METALS; ZINC; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS	Roels, H.A. Lauwerys, R.R. Buchet, J-P Bernard, A. 1981 Environmental Research 24:117-130
3688 Blood, serum						Review Current dietary intake close to provisional maximum intake of 400-500 ug/wk (WHO). AIR POLLUTION; BIOACCUMULATION; DRINKING WATER; FOOD CONTAMINATION; FOODS; GROUND WATER POLLUTION; INDUSTRIAL EMISSIONS; INHALATION; RATS; RURAL AREAS; SOILS; TOBACCOS; URBAN AREAS; VEGETATION; WATER POLLUTION; CADMIUM; BLOOD SERUM; GASTROINTESTINAL SYSTEM; KIDNEYS; LIVER; LUNGS; URINE; REVIEW; AUSTRALIA; CALIFORNIA; FINLAND; ILLINOIS; KANSAS; MASSACHUSETTS; MICHIGAN; MISSOURI; MONTANA; NEBRASKA; NEW YORK; SWEDEN; UNITED STATES; VERMONT; WASHINGTON; ADULTS; AGE; AUTOPSIES; HEART DISEASES; KIDNEY DISEASES; METAL POISONING; NEOPLASMS; METALS	Varma, M.M. Katz, M.M. 1978 Journal of Environmental Health 40(6):308-314
3689 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 16.4 + or - 6.3 ug/l b) 1.2 + or - 1.1 ug/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level ($P<0.01$) in hard-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3690 Bone		AAS NA	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 8.3 ppm b) 26 + or - 13 ppm c) 3.2 ppm d) 2.1 ppm	a) Spine, measured by AAS b) Spine, measured by NA c) Rib, measured by AAS d) Femur, measured by AAS Autopsy specimens. Battery plate maker, worked with Cd for 36 yr. BONES; KIDNEYS; LIVER; AUTOPSIES; CADMIUM; METALS; OCCUPATIONAL HAZARDS; UNITED KINGDOM; OCCUPATIONAL DISEASES; URINE	Blainey, J.D. Adams, R.G. Brewer, D.B. Harvey, T.C. 1980 British Journal of Industrial Medicine 37:278-284
3691 Brain		NA		a) None detected b) None detected c) None detected d) None detected	a) None detected b) None detected c) None detected d) None detected	a) Males, cerebrum, 8 subjects b) Females, cerebrum, 8 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3692 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 1.72 ppm b) 1.08 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SCIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
3693 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3694 Hair		ASV	1	0.66-3.88 ug/g	1.72 + or - 0.78 ug/g	Beard hair - 10 wk period. Daily doses of 100-300 mg Zn. 29 determinations. Australia AUSTRALIA; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; LEAD; METALS; TRACE ELEMENTS; ZINC	Chittleborough, G. Steel, B.J. 1980 Science of the Total Environment 15:25-35
3695 Hair		NA	a) 19 b) 7 c) 11 d) 10 e) 10	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.20 ppm b) 2.17 + or - 0.84 ppm c) 1.48 + or - 1.14 ppm d) 0.67 + or - 0.56 ppm e) 0.81 + or - 0.67 ppm Wet wt	a) Abortuses b) Ages 2-5 yr c) Ages 13-18 yr d) Ages 25-34 yr e) Ages 65+ yr Data also given by race and occupation. Autopsies of accidental deaths in Ohio, ages, <1 mo-greater than 65 yr, and abortuses. METALS; CADMIUM; HAIR; KIDNEYS; LIVER; AUTOPSIES; SMOKING; TOBACCOS; AGE; POPULATION EXPOSURE; ADULTS; ADOLESCENTS; CHILDREN; FETUS; OHIO	Gross, S.B. Yeager, D.W. Middendorf, M.S. 1975 Preliminary Final Report, October 7, 1975
3696 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
3697 Heart		NA	a) 10 b) 4	a) Not given b) None detected	a) 0.11 + or - 0.28 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3698 Kidney		AAS		a) Not given b) Not given c) Not given d) Not given e) 551-1891 ppm f) 832-929 ppm g) 2000-4000 ppm h) 1230-2850 ppm Ash wt	a) 3231 ppm b) 2061 ppm c) 1286 ppm d) 2812 ppm e) 1221 ppm f) 881 ppm g) 2941 ppm h) 2197 ppm Ash wt	a) 17 cancer patients b) 58 non-cancer patients c) 10 nonsmokers (never smoked) d) 5 smokers, 1.5 packs/day e) 2 males, ages 10-19 yr f) 2 females, ages 10-19 yr g) 9 males, ages 50-59 yr h) 4 females, ages 50-59 yr Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963
3699 Kidney		NA	a) 19 b) 3	a) 5.6-110 ug/g (wet wt) b) 58-67 ug/g (wet wt)	a) 52 + or - 32 ug/g (wet wt) b) 60 + or - 6.7 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3700 Kidney		AAS	a) 8 b) 9 c) 12	a) 1.67-13.1 ug/g b) 2.84-37.2 ug/g c) 0.008-27.6 ug/g Wet wt	a) 2.4 ug/g b) 15.8 ug/g c) 14.8 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3701 Kidney		AAS NA	1	a) Not applicable b) Not applicable	a) 77 ppm b) 80 + or - 20 ppm	a) Measured by AAS b) Measured by NA Autopsy specimens. Battery plate maker, worked with Cd for 36 yr. Osteomalacia, renal tubular dysfunction BONES; KIDNEYS; LIVER; AUTOPSIES; CADMIUM; METALS; OCCUPATIONAL HAZARDS; UNITED KINGDOM; OCCUPATIONAL DISEASES; URINE	Blainey, J.D. Adams, E.G. Brewer, D.B. Harvey, T.C. 1980 British Journal of Industrial Medicine 37:278-284
3702 Kidney		NA	a) 19 b) 7 c) 11 d) 10 e) 10	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.07 + or - 0.06 ppm b) 13.33 + or - 22.72 ppm c) 8.57 + or - 3.97 ppm d) 24.40 + or - 14.10 ppm e) 20.89 + or - 12.26 ppm Wet wt	a) Abortuses b) Ages 2-5 yr c) Ages 13-18 yr d) Ages 25-34 yr e) Ages 65+ yr Data also given by race and occupation. Autopsies of accidental deaths in Ohio, ages, <1 mo-greater than 65 yr, and abortuses. METALS; CADMIUM; HAIR; KIDNEYS; LIVER; AUTOPSIES; SMOKING; TOBACCOS; AGE; POPULATION EXPOSURE; ADULTS; ADOLESCENTS; CHILDREN; FETUS; OHIO	Gross, S.B. Yeager, D.W. Middendorf, H.S. 1975 Preliminary Final Report, October 7, 1975
3703 Kidney	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
3704 Kidney						Review. A one-compartment model for Cd accumulation is used to assess the impact on body burdens of recent increases in environmental levels, changes in smoking patterns, and age-dependent morphological or functional changes in the kidney. AGE; KIDNEYS; MODEL; CADMIUM; FOODS; SMOKING; REVIEW	Travis, C.C. Haddock, A.G. 1980 Environmental Research 22:46-60

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3705 Kidney						Review Current dietary intake close to provisional maximum intake of 400-500 ug/wk (WHO). AIR POLLUTION; BIOACCUMULATION; DRINKING WATER; FOOD CONTAMINATION; FOODS; GROUND WATER POLLUTION; INDUSTRIAL EMISSIONS; INHALATION; RATS; RURAL AREAS; SOILS; TOBACCOS; URBAN AREAS; VEGETATION; WATER POLLUTION; CADMIUM; BLOOD SERUM; GASTROINTESTINAL SYSTEM; KIDNEYS; LIVER; LUNGS; URINE; REVIEW; AUSTRALIA; CALIFORNIA; FINLAND; ILLINOIS; KANSAS; MASSACHUSETTS; MICHIGAN; MISSOURI; MONTANA; NEBRASKA; NEW YORK; SWEDEN; UNITED STATES; VERMONT; WASHINGTON; ADULTS; AGE; AUTOPSIES; HEART DISEASES; KIDNEY DISEASES; METAL POISONING; NEOPLASMS; METALS	Varma, M.M. Katz, M.M. 1978 Journal of Environmental Health 40(6):308-314
3706 Kidney	Inhalation		1	Not given	30.7 ug/g/ wet wt	30 min exposure Autopsy tissue 34 yr old welder Dyspnea, persistent non-productive cough. Death 5 days after exposure. Lung showed changes typical of acute pneumonitis. UNITED KINGDOM; KIDNEYS; LIVER; LUNGS; URINE; HEALTH HAZARDS; METAL POISONING; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; CADMIUM; METALS; AUTOPSIES	Lucas, P.A. Jariwalla, A.G. Jones, J.H. Gough, J. Vale, P.T. 1980 Lancet 2(8187):205
3707 Kidney		NAA	a) 83 b) 10	a) 0.9-57 mg b) 0.4-11.8 mg	a) 15.3 + or - 2.4 mg b) 3.7 + or - 2.9 mg Geometric	a) Workers, Cd processing plant b) Controls Range of critical levels for Cd-induced tubular proteinuria estimated at 150-300 ug/l. ADULTS; KIDNEY DISEASES; KIDNEYS; LIVER; IN VIVO ANALYSIS; CADMIUM; METALS; OCCUPATIONAL HAZARDS	Ellis, K.J. Morgan, W.D. Zanzi, I. Yasumura, S. Vartsky, D. Cohn, S.H. 1981 Journal of Toxicology and Environmental Health 7:691-703
3708 Kidney		X-Ray Spectrometry	5	30-143 ug/g	Not given	Values for cortex. Occupationally exposed 6-30 yr. No other details given. 33-64 yr olds, Sweden ADULTS; BLOOD; KIDNEYS; URINE; IN VIVO ANALYSIS; MEASUREMENT METHODS; CADMIUM; OCCUPATIONAL HAZARDS; METALS	Ahlgren, L. Mattsson, S. 1981 Physics in Medicine and Biology 26(1):19-26

(NEXT PAGE)

Cadmium
7440-43-9
Cd
Atw 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3709 Liver		AAS		a) Not given b) Not given c) 52-281 ppm d) 75-605 ppm Ash wt	a) 248 ppm b) 244 ppm c) 143 ppm d) 287 ppm Ash wt	a) 17 cancer patients b) 58 non-cancer patients c) 10 non-smokers (never smoked) d) 18 smokers c) and d) 40-70 yr old males. Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, H.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963
3710 Liver		NA	a) 8 b) 6	0.66-11 ug/g (wet wt) b) 2.4-15 ug/g (wet wt)	a) 4.2 + or - 3.5 ug/g (wet wt) b) 8.9 + or - 6.5 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
3711 Liver		AAS	a) 8 b) 9 c) 11	a) 0.071-1.16 ug/g b) 0.080-3.21 ug/g c) 0.0010-4.8 ug/g Wet wt	a) 0.32 ug/g b) 0.96 ug/g c) 0.72 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3712 Liver		AAS NA	1	a) Not applicable b) Not applicable	a) 172 ppm b) 210 + or - 6 ppm	a) Measured by AAS b) Measured by NA Autopsy specimens. Battery plate maker, worked with Cd for 36 yr. BONES; KIDNEYS; LIVER; AUTOPSIES; CADMIUM; METALS; OCCUPATIONAL HAZARDS; UNITED KINGDOM; OCCUPATIONAL DISEASES; URINE	Blainey, J.D. Adams, R.G. Brewer, D.B. Harvey, T.C. 1980 British Journal of Industrial Medicine 37:278-284

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3713 Liver		NA	a) 19 b) 7 c) 11 d) 10 e) 10	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.01 ppm b) 0.33 + or - 0.35 ppm c) 0.97 + or - 0.69 ppm d) 1.25 + or - 0.75 ppm e) 1.97 + or - 1.08 ppm Wet wt	a) Abortuses b) Ages 2-5 yr c) Ages 13-18 yr d) Ages 25-34 yr e) Ages 65+ yr Data also given by race and occupation. Autopsies of accidental deaths in Ohio, ages, <1 mo-greater than 65 yr, and abortuses. METALS; CADMIUM; HAIR; KIDNEYS; LIVER; AUTOPSIES; SMOKING; TOBACCOS; AGE; POPULATION EXPOSURE; ADULTS; ADOLESCENTS; CHILDREN; FETUS; OHIO	Gross, S.B. Yeager, D.W. Biddendorf, M.S. 1975 Preliminary Final Report, October 7, 1975
3714 Liver	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
3715 Liver	Inhalation		1	Not given	4.8 ug/g wet wt	30 min exposure Autopsy tissue 34 yr old welder Dyspnea, persistent non-productive cough. Death 5 days after exposure. Lung showed changes typical of acute pneumonitis. UNITED KINGDOM; KIDNEYS; LIVER; LUNGS; URINE; HEALTH HAZARDS; METAL POISONING; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; CADMIUM; METALS; AUTOPSIES	Lucas, P.A. Jariwalla, A.G. Jones, J.H. Gough, J. Vale, P.T. 1980 Lancet 2(8187):205
3716 Liver		NAA	a) 83 b) 10	a) 0.8-120 ppm b) 0.6-7.9 ppm	a) 22.4 + or - 3.3 ppm b) 2.6 + or - 2.2 ppm Geometric	a) Workers, Cd processing plant b) Controls Range of critical levels for Cd-induced tubular proteinuria estimated at 150-300 ug/g. ADULTS; KIDNEY DISEASES; KIDNEYS; LIVER; IN VIVO ANALYSIS; CADMIUM; METALS; OCCUPATIONAL HAZARDS	Ellis, K.J. Morgan, W.D. Zanzi, I. Yasumura, S. Vartsky, D. Cohn, S.H. 1981 Journal of Toxicology and Environmental Health 7:691-703

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3717 Lung		NA	a) 3 b) 2	a) Not given b) None detected	a) 0.90 + or - 0.85 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Iukawa, H. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3718 Lung		AAS	a) 8 b) 9 c) 11	a) 0.001-0.17 ug/g b) 0.058-0.78 ug/g c) 0.046-1.4 ug/g Wet wt	a) 0.026 ug/g b) 0.42 ug/g c) 0.11 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smeltery workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3719 Lung	Inhalation		1	Not given	4.7 ug/g wet wt	30 min exposure Autopsy sample 34 yr old welder Dyspnea, persistent non-productive cough Death 5 days after exposure. Lung showed changes typical of acute pneumonitis. UNITED KINGDOM; KIDNEYS; LIVER; LUNGS; URINE; HEALTH HAZARDS; METAL POISONING; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; CADMIUM; METALS	Lucas, P.A. Jariwalla, A.G. Jones, J.H. Gough, J. Vale, P.T. 1980 Lancet 2(8187):205
3720 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3721 Muscle		NA	a) 6 b) 4	a) None detected b) Not given	a) None detected b) 0.14 + or - 0.27 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3722 Pancreas		NA	a) 6 b) 2	a) Not given b) Not given	a) 1.2 + or - 1.4 ug/g (wet wt) b) 2.6 + or - 3.6 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3723 Spleen		NA	a) 9 b) 4	a) Not given b) Not given	a) 0.64 + or - 1.3 ug/g (wet wt) b) 0.80 + or - 1.6 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3724 Urine	Inhalation	AAS		0.5-3.2 ug/l	1.6 ug/l	12 samples Direct determination and extraction procedures agree. Welders, garage personnel and putty workers in Swedish airplane factory. INDUSTRIAL POLLUTION; COMPARATIVE EVALUATIONS; CADMIUM; SWEDEN; ADULTS; BLOOD; URINE; BIOACCUMULATION	Lagesson, V. Andrasko, L. 1979 Clinical Chemistry 25(11):1948-1953

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3725 Urine	Ingestion	AAS	a) 34 b) 38 c) 22 d) 20	a) Not given b) Not given c) Not given d) Not given	a) 25.6 + or - 2.57 ug/g creatinine b) 36.7 + or - 3.42 ug/g creatinine c) 4.8 + or - 0.50 ug/g creatinine d) 10.0 + or - 1.93 ug/g creatinine	a) Males b) Females c) Male controls d) Female controls Villagers in heavily polluted Jinzu River Basin, Japan. Ages 40->70 yr. Controls from Ishikawa Prefecture. Ages 50->70 yr. Creatinine clearance and % renal phosphorus reabsorption decreased significantly in Cd-exposed subjects. Proteinurea, glucosurea, and aminoaciduria.	Nogawa, K. Kobayashi, E. Honda, R. Ishizaki, A. Kawano, S. Matsuda, H. 1980 Environmental Research 23:13-23
3726 Urine						A review of research in industrial uses for and environmental effects of Cd, as reported by the International Lead Zinc Organization. REVIEW; CADMIUM; METALS; MEASUREMENT METHODS; IN VIVO ANALYSIS; BLOOD; URINE; KIDNEY DISEASES; BONE DISEASES; OCCUPATIONAL DISEASES; POPULATION EXPOSURE; INDUSTRIAL EMISSION	Ponikvar, A.L. Volpe, R. 1979 Cadmium Research Digest No. 4, 24 pp.
3727 Urine	Ingestion Inhalation		a) 17 b) 15 c) 24 d) 16 e) 19 f) 7 g) 21 h) 23	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 0.85 ug/g creatinine b) 0.75 ug/g creatinine c) 0.55 ug/g creatinine d) 0.70 ug/g creatinine e) 0.45 ug/g creatinine f) 0.32 ug/g creatinine g) 0.30 ug/g creatinine h) 0.20 ug/g creatinine Medians	a) Boys living < 1 km from smelter b) Girls living < 1 km from smelter c) Boys living 2.5 km from smelter d) Girls living 2.5 km from smelter e) Urban boys f) Urban girls g) Rural boys h) Rural girls Estimated from graph School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108
3728 Urine			1	36-21 ug/l	Not applicable	Measured 7 & 10 yr after exposure Autopsy specimens. Battery plate maker, worked with Cd for 36 yr. BONES; KIDNEYS; LIVER; AUTOPSIES; CADMIUM; METALS; OCCUPATIONAL HAZARDS; UNITED KINGDOM; OCCUPATIONAL DISEASES; URINE	Blainey, J.D. Adams, R.G. Brewer, D.B. Harvey, T.C. 1980 British Journal of Industrial Medicine 37:278-284

(NEXT PAGE)

Cadmium
7440-43-9
Cd
AtW 112.40, MP 321 C, BP 765 C, VP 1 mm Hg at 394 C, 10 mm Hg at 486

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3729 Urine			a) 70 b) 60	a) 0.002-0.156 ug/hr b) 0.015-0.365 ug/hr	a) 0.040 + or - 0.004 ug/hr b) 0.093 + or - 0.007 ug/hr (S.E.)	a) Controls b) Residents of polluted area Women, mean age 82.3 yr, from Cd-polluted area (Liege), and controls, mean age 81.1 yr, from Charleroi, Belgium. BLOOD; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; ZINC; METALS; BELGIUM; AGE; POPULATION EXPOSURE; INDUSTRIAL POLLUTION; SHELTERS; KIDNEY DISEASES	Lauwerys, R. Roels, H. Bernard, A. Buchet, J.P. 1980 International Archives of Occupational and Environmental Health 45:271-274
3730 Urine	Inhalation		1	Not applicable	2000 nmol/l	30 min exposure Ante-mortem level 34 yr old welder Dyspnea, persistent non-productive cough Death 5 days after exposure. Lung showed changes typical of acute pneumonitis. UNITED KINGDOM; KIDNEYS; LIVER; LUNGS; URINE; HEALTH HAZARDS; METAL POISONING; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; CADMIUM; METALS; AUTOPSIES	Lucas, P.A. Jariwalla, A.G. Jones, J.H. Gough, J. Vale, P.T. 1980 Lancet 2(8187):205
3731 Urine	Inhalation	AAS	a) 60 b) 45 c) 70	a) 0.015-0.365 ug/hr b) 0.012-0.119 ug/hr c) 0.002-0.156 ug/hr	a) 0.077 ug/hr b) 0.047 ug/hr c) 0.030 ug/hr Geometric	a) Residents of Liege (most polluted area) b) Residents of Brussels (less polluted area) c) Residents of Charleroi (control area) Liege residents differed from Charleroi ($p<0.01$) and from Brussels ($p<0.001$). Healthy subjects >60 yr old, residents of the same areas 25 yr, Belgium BELGIUM; ADULTS; AGE; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; METALS; ZINC; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS	Roels, H.A. Lauwerys, R.R. Buchet, J-P Bernard, A. 1981 Environmental Research 24:117-130
3732 Urine			5	4.4-28.5 ug/l	Not given	Exposed 6-30 yr 33-64 yr olds, Sweden ADULTS; BLOOD; KIDNEYS; URINE; IN VIVO ANALYSIS; MEASUREMENT METHODS; CADMIUM; OCCUPATIONAL HAZARDS; METALS	Ahlgren, L. Mattsson, S. 1981 Physics in Medicine and Biology 26(1):19-26

Calcium
7440-70-2
Ca
AtW 40.08, MP 850 C, BP 1440 C, VP 10 mm Hg at 983 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3733 Blood				a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2.35+ or - 0.21 mmol/l b) 2.38 + or - 0.24 mmol/l c) 2.66 + or - 0.27 mmol/l d) 2.69 + or - 0.26 mmol/l e) 2.34 + or - 0.29 mmol/l f) 2.25 + or - 0.33 mmol/l	a) At delivery, from mothers on vitamin supplement b) From control mothers at delivery c) From cord, with vitamin supplement d) From cord controls e) From infants with vitamin supplement f) From infant controls Dose of 400 IU (10 ug). 506 pregnant women, 633 pregnant controls. Scotland. SCOTLAND; UNITED KINGDOM; ADULTS; INFANTS; BLOOD; UMBILICAL CORD; CALCIUM; HYDROXYCHOLECALCIFEROLS; MAGNESIUM; MINERALS; PHOSPHORUS; TRACE ELEMENTS; VITAMIN D; DIETS; MINERAL METABOLISM; PREGNANCY	Cockburn, F. Belton, N.R. Purvis, R.J. Giles, M.M. Brown, J.K. Turner, T.L. Wilkinson, E.M. Forfar, J.O. Barrie, W.J.M. McKay, G.S. Pocock, S.J. 1980 British Medical Journal 281(6232):11-14
3734 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 10.24 + or - 0.06 mg/100 ml b) 9.85 + or - 0.08 mg/100 ml	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level (P<0.01) in hard-ater area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG atnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHORUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016
3735 Brain		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 5.9 + or - 0.7 nmol/g b) 8.6 + or - 0.8 nmol/g c) 7.4 + or - 0.7 nmol/g d) 7.3 + or - 1.3 nmol/g e) 9.1 + or - 1.0 nmol/g f) 9.9 + or - 1.0 nmol/g Dry wt SE	a) Globus pallidus, 11 samples, coefficient of variation (CV) 40.9% b) Caudate nucleus, 13 samples, CV 32.9% c) Putamen, 12 samples, CV 33.0% d) Substantia nigra, 6 samples, CV 41.8% e) Cerebral cortex, 17 samples, CV 43.8% f) Hippocampus, 13 samples, CV 34.6% Autopsy samples CEREBRAL CORTEX; MEASUREMENT METHODS; CALCIUM; COPPER; IRON; MANGANESE; BRAIN; AUTOPSIES	Goldberg, W.J. Allen, N. 1981 Clinical Chemistry 27(4):562-564
3736 Breath	Inhalation	PIXE	1	20-0.5 ug/cu m	Not given	Levels after exposure to aerosols of chalk dust from blackboard erasers a function of particle size. Estimated from graph. Tidal volume of about 900 cu m and respiratory frequency of 15 cycles/min maintained during sampling time. BREATH; BROMINE; CALCIUM; CHLORINE; LEAD; AUTOMOTIVE; ATMOSPHERE; PARTICULATES	Desaedeleer, G.G. Winchester, J.W. Environmental Science and Technology 9(10):971-972

(NEXT PAGE)

Calcium
7440-70-2
Ca
AtW 40.08, MP 850 C, BP 1440 C, VP 10 mm Hg at 983 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3737 Breath	Inhalation	PIXE	1	Not given	20.1 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 *Annals of Occupational Hygiene* 19:225-238
3738 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 397 ppm b) 344 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
3739 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; *METALS; PROTEINS; COMPARATIVE* EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3740 Hair		NA	a) 42 b) 40	a) 63-1501 ug/g b) 77-2068 ug/g	a) 264 ug/g b) 210 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000
3741 Spinal cord		X-ray spectrom	a) 7 b) 12	a) 29.9-94.1 ug/g b) 17.2-66.3 ug/g Dry wt	a) 54.7 + or - 27.9 ug/g b) 35.0 + or - 15.1 ug/g Dry wt	a) Motor neuron disease patients b) Controls Ventral horn tissue, autopsy Patients died of myotrophic lateral sclerosis and progressive muscular atrophy, mean age, 58.6 + or - 13.1 yr. Controls died of various diseases at 60.9 + or - 11.1 yr. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24

Carbon tetrachloride (8 CI)
Methane, tetrachloro- (9 CI)
56-23-5
CCl4
MW 153.84, MP -22.6 C, BP 76.8 C, VP 100 mm Hg at 23.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3742 Breath		GC-MS	54 (387 samples)	Not given	1.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 29.7% occurrence Lower and upper one-Sigma limits 0.43 and 4.6 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cesium
7440-46-2
Cs
AtW 132.9054, MP 28.5 C, BP 705 C, VP 1 mm Hg at 279 C, 10 mm Hg at 373 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3743 Kidney		NA	a) 8 b) 9 c) 12	a) 0.006-0.058 ug/g b) 0.005-0.064 ug/g c) 0.009-0.057 ug/g Wet wt	a) 0.014 ug/g b) 0.017 ug/g c) 0.021 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Cesium
7440-46-2
Cs
AtW 132.9054, MP 28.5 C, BP 705 C, VP 1 mm Hg at 279 C, 10 mm Hg at 373 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3744 Liver		NA	a) 8 b) 9 c) 11	a) 0.014-0.052 ug/g b) < 0.0010-0.041 ug/g c) < 0.0004-0.043 ug/g Wet wt	a) 0.018 ug/g b) 0.0065 ug/g c) 0.021 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; *LUNGS; COMPARATIVE EVALUATIONS;* INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3745 Lung		NA	a) 8 b) 9 c) 11	a) 0.005-0.044 ug/g b) 0.004-0.048 ug/g c) 0.007-0.050 ug/g Wet wt	a) 0.021 ug/g b) 0.0095 ug/g c) 0.018 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

Chlordane
12789-03-6
C10-H6-Cl8
MW 409.8, BP 175 C at 2 mm Hg, VP 1X10(E-5) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3746 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.150 ppm b) 0-0.723 ppm c) 0-0.723 ppm d) Not given	a) 0.015 ppm b) 0.026 ppm c) 0.026 ppm d) 0.0003 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, E. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

Chlorine
7782-50-5
Cl
AtW 35.753, MP -101 C, BP -34.05 C, VP 4800 mm Hg at 20 C, 1 mm Hg at -123 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3747 Breath	Inhalation	PIXE	1	8-0.005 ug/cu m	Not given	After autoactive Pb halide aerosol exposure. Levels a function of particle size. Estimated from graph. Tidal volume of about 900 cu m and respiratory frequency of 15 cycles/min maintained during 10-min sampling time. BREATH; BROMINE; CALCIUM; CHLORINE; LEAD; AUTOMOTIVE; ATMOSPHERE; PARTICULATES	Desaedeleer, G.G. Winchester, J.W. Environmental Science and Technology 9(10):971-972
3748 Breath	Inhalation	PIXE	1	Not given	29.8 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
3749 Hair						Review. 24 representative pre-analysis treatments are tatulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3750 Hair		NA	a) 23 b) 19 c) 42 d) 14 e) 26 f) 40	a) 230-5620 ug/g b) 20-910 ug/g c) 20-5620 ug/g d) 230-2710 ug/g e) 20-2120 ug/g f) 20-2710 ug/g	a) 1060 ug/g b) 360 ug/g c) 690 ug/g d) 1570 ug/g e) 780 ug/g f) 1050 ug/g Medians	a) Male controls b) Female controls c) All controls d) Male multiple sclerosis patients e) Female multiple sclerosis patients f) All multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

Chloroform (8 CI)
Methane, trichloro- (9 CI)
67-66-3
C-H-Cl3
MW 119.39, MP -63.5 C, VP 100 mm Hg at 10.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3751 Breath		GC/MS	8	Not detected-11.0 ug/hr	1.7 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3752 Breath		GC-MS	54 (387 samples)	Not given	23.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 92.1% occurrence Lower and upper one-Sigma limits 7.4 and 73.7 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cholecalciferol (8 CI)
9,10-Secocholesta-5,7,10(19)-trien-3-ol, (3beta,5Z,7E)-(9 CI)
67-97-0
C27-H44-O
MW 384.62, MP 84-85 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3753 Blood, serum		HPLC Competitive binding	45	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 27 + or - 2 ng/ml b) 28 + or - 1 ng/ml c) 20 + or - 1 ng/ml d) 21 + or - 3 ng/ml e) 33 + or - 2 pg/ml f) 20 + or - 1 pg/ml g) 14 + or - 2 pg/ml h) 37 + or - 6 pg/ml S.E.	a) 25-hydroxyvitamin D (metabolite), 15 children with blood Pb of 10-26 ug/dl b) 25-hydroxyvitamin D, 18 children with blood Pb of 33-55 ug/dl c) 25-hydroxyvitamin D, 12 children with blood Pb of 62-120 ug/dl d) 25-hydroxyvitamin D, children in c) after chelation therapy e) 1,25-dihydroxyvitamin D (metabolite), children in a) f) 1,25-dihydroxyvitamin D, children in b) g) 1,25-dihydroxyvitamin D, children in c) h) 1,25-dihydroxyvitamin D, children in c) after chelation therapy. 1-5 yr olds, NY LEAD; VITAMIN D; CHILDREN; NEW YORK; BLOOD; COMPARATIVE EVALUATIONS; BLOOD SERUM; METABOLISM; METABOLITES; HYDROXYCHOLECALCIFEROLS	Rosen, J.F. Chesney, R.W. Hamstra, A. DeLuca, H.F. Mahaffey, K.R. 1980 New England Journal of Medicine 302(20):1128-1131

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3754 Adrenal gland		AAS	a) 1 b) 5	a) Not given b) 31.5-156 ng/g wet wt	a) 1530 ng/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Hashizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3755 Aorta		NA	3	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3756 Aorta		AAS	a) 1 b) 5	a) Not given b) 8.2-13.0 ng/g wet wt	a) 221 ng/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Hashizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3757 Blood, plasma						Review. Problems in risk analysis of cancer in Ni and Cr industry are presented. Various compounds are cited which cause cancer in practical exposure situations. The need for dose registration is emphasized. NORWAY; CARCINOMAS; BLOOD PLASMA; URINE; INDUSTRIAL HYGIENE; REVIEW; CHROMIUM; METALS; NICKEL; CARCINOGEN; INDUSTRIAL ATMOSPHERES; INDUSTRIES; OCCUPATIONAL HAZARDS; NEOPLASMS	Norseth, T. 1980 Journal of Toxicology and Environmental Health 6(5/6):1219-1227

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, BP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3758 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 0.012 + or - 0.002 mg/l b) 0.043 + or - 0.007 mg/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level (P<0.01) in soft-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1918):1008-1016
3759 Bone marrow		AAS	a) 1 b) 1	a) Not given b) Not given	a) 51.3 ng/g b) 22.4 ng/g Wet wt	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Moshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3760 Brain		NA		a) None detected b) None detected c) None detected d) None detected	a) None detected b) None detected c) None detected d) None detected	a) Males, cerebrum, 8 subjects b) Females, cerebrum, 4 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODINE; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3761 Brain		AAS		a) Not given b) Not given c) Not given d) Not given	a) 62.7 ng/g b) 54.5 ng/g c) 56.0 ng/g d) 10.5 ng/g Wet wt	a) Worker - cerebrum (temporal) b) Worker - cerebrum (occipital) c) Worker - cerebellum d) Control - cerebrum (frontal lobe) Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. 5 controls, ages 59-78 yr. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Hashizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3762 Breath	Inhalation	PIXE	1	Not given	96.6 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
3763 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 0.25 ppm b) 0.09 ppm	a) learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
3764 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3765 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION ; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
3766 Heart		NA	a) 8 b) 4	a) Not given b) None detected	a) 0.07 + or - 0.12 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3767 Kidney		NA	a) 22 b) 3	a) Not given b) None detected	a) 0.09 + or - 0.34 ug/g (wet wt) b) None detected	a) Male b) Female From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3768 Kidney		AAS	a) 1 b) 5	a) Not given b) 3.4-22.2 ng/g wet wt	a) 126 ng/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3769 Kidney		NA	a) 8 b) 20	a) < 0.003-0.069 ug/g b) < 0.003-1.16 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3770 Liver		NA	a) 8 b) 7	a) Not given b) None detected	a) 0.93 + or - 26 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3771 Liver		AAS	a) 1 b) 5	a) Not given b) 14.7-38.7 ng/g wet wt	a) 70.4 ng/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. 5 controls, ages 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3772 Liver		NA	a) 8 b) 21	a) < 0.003-0.11 ug/g b) < 0.003-0.23 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3773 Lung		NA	a) 3 b) 2	a) 0.27-1.2 ug/g (wet wt) b) None detected	a) 0.65 + or - 0.46 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3774 Lung		AAS		a) Not given b) Not given c) Not given d) 96.9-292 ng/g e) 204-241 ng/g f) 19.3-134 ng/g Wet wt	a) 7100 ng/g b) 4530 ng/g c) 616 ng/g d) Not given e) Not given f) Not given Wet wt	a) Worker, right upper lobe b) Worker, right middle lobe c) Worker, right lower lobe d) Controls, right upper lobe e) Controls, right middle lobe f) Controls, right lower lobe Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxtillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3775 Lung		NA	a) 8 b) 9 c) 11	a) 0.025-0.72 ug/g b) 0.047-1.75 ug/g c) 0.058-11 ug/g Wet wt	a) 0.082 ug/g b) 0.32 ug/g c) 0.16 ug/g Wet wt Medians	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 63-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHOROUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3776 Milk		AAS		a) 0.23-0.66 ng/ml b) 0.14-0.45 ug/day c) 0.19-0.69 ng/ml d) 0.13-0.44 ug/day	a) 0.43 + or - 0.13 ng/ml b) 0.27 + or - 0.10 ug/day c) 0.39 + or - 0.21 ng/ml d) 0.26 + or - 0.14 ug/day	a) 10 mothers, 8-18 days lactation b) 10 infants, 8-18 days old c) 5 mothers, 47-54 days lactation d) 5 infants, 47-54 days old Mothers and their breast-fed infants in Finland. MILK; LACTATION; FINLAND; CHROMIUM; METALS; COMPARATIVE EVALUATIONS; INFANTS	Kumpulainen, J. Vuori, E. 1980 American Journal of Clinical Nutrition 33:2299-2302
3777 Muscle		NA	a) 6 b) 4	a) Not given b) Not given	a) 0.08 + or - 0.20 ug/g (wet wt) b) 0.07 + or - 0.14 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
3778 Muscle		AAS	1	Not given	61.3 ng/g wet wt	Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Moshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3779 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
3780 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 6.77 + or - 3.99 ppm b) 8.23 + or - 1.25 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.M. Moore, C.E. 1979 Science of the Total Environment 13:131-140
3781 Pancreas		NA	a) 7 b) 3	a) Not given b) None detected	a) 0.04 + or - 0.11 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3782 Pancreas		AAS	5	14.1-28.0 ng/g wet wt	Not given	Controls Ages 59-78 yr. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3783 Pharynx		AAS	a) 1 b) 1	a) Not given b) Not given	a) 96.7 ng/g b) 27.9 ng/g Wet wt	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3784 Skin		AAS	a) 1 b) 1	a) Not given b) Not given	a) 104 ng/g b) 14.3 ng/ Wet wt	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, aged 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3785 Spleen		NA	a) 9 b) 4	a) None detected b) None detected	a) None detected b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3786 Urine	Inhalation	AAS	22	a) Not given b) Not given c) Not given	a) 5.3 + or - 3.7 ug/g creatinine b) 33.3 + or - 6.9 ug/g creatinine c) 24.5 + or - 12.5 ug/g creatinine	a) Stainless steel welders, exposed 4.5 yr b) Armoured steel welders, exposed 1.0 yr c) Chromium platers, exposed 8.9 yr Italians, mean age 40 yr, tank manufacturing Increase in beta-glucuronidase, proteinurea, and lysozymuria. ITALY; ADULTS; KIDNEY DISEASES; URINE; BIOACCUMULATION; FUMES; INDUSTRIAL POLLUTION; INDUSTRIAL MEDICINE; CHROMIUM; METALS	Mutti, A. Cavatorta, A. Pedroni, C. Borghi, A. Giaroli, C. Franchini, I. 1979 International Archives of Occupational and Environmental Health 43:123-133

(NEXT PAGE)

Chromium
7440-47-3
Cr
AtW 51.996, MP 1900 C, BP 2642 C, VP 1 mm Hg at 1616 C, 10 mm Hg at 1840 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3787 Urine						Review. Problems in risk analysis of cancer in Ni and Cr industry are presented. Various compounds are cited which cause cancer in practical exposure situations. The need for dose registration is emphasized. NORWAY; CARCINOMAS; BLOOD PLASMA; URINE; INDUSTRIAL HYGIENE; REVIEW; CHROMIUM; METALS; NICKEL; CARCINOGEN; INDUSTRIAL ATMOSPHERES; INDUSTRIES; OCCUPATIONAL HAZARDS; NEOPLASMS	Norseth, T. 1980 Journal of Toxicology and Environmental Health 6(5/6):1219-1227

Chrysotile (8 CI) (VAN)
Chrysotile [H4Mg3(Si2O9)] (9 CI)
12001-29-5
H10-O9-Si2.3Mg
EN 282

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3788 Lung		EM	1	a) 5.8x10(E+7)-1.4x10(E+8) fibers/g b) 1.0x10(E+8)-2.7x10(E+8) fibers/g Dry wt	a) 1.07x10(E+8) fibers/g b) 1.6x10(E+8) fibers/g Dry wt	a) Analyzed at University of Cardiff b) Analyzed by laboratory in Paris Parenchyma from case of pleural mesothelioma Data also for amphibole fibers. LUNGS; ASBESTOS; NEOPLASMS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; FRANCE	Sebastien, P. Billon, M.A. Janson, X. Bonnaud, G. Bignon, J. 1978 Archives des Maladies Professionnelles, de Medicine du Travail et de Securite Sociale (Paris) 39(4-5):229-248
3789 Lung		EM	4	Not given	10 fibers or ferruginous bodies/sample	16 samples. In vivo modification indicated by increase in Si/Mg ratio, especially in ferruginous bodies. Patients, France FRANCE; LUNGS; IN VITRO ANALYSIS; IN VIVO ANALYSIS; ASBESTOS; FIBERS	Jaurand, M.C. Goni, J. Jeanrot, P. Sebastien, P. Bignon, J. 1976 Revue Francaise des Maladies Respiratoires 4, Supplement 2:111-120

Cobalt
7440-48-4
Co
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3790 Aorta		NA	3	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3791 Blood, serum		AAS	a) 260 b) 260	a) Not applicable b) Not given	a) Not detected b) 0.146 + or - 0.026 mg/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level (P<0.01) in soft-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1918):1008-1016
3792 Brain		NA		a) None detected b) None detected c) None detected d) None detected	a) None detected b) None detected c) None detected d) None detected	a) Males, cerebrum, 7 subjects b) Females, cerebrum, 4 subjects c) Males, cerebellum, 4 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Cobalt
7440-48-4
Cc
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3793 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 0.16 ppm b) 0.23 ppm	a) learning disabled b) Controls learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SCDIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CEROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pibl, R.O. Parkes, M. 1977 Science 198(4313):204-206
3794 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; ICDINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3795 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Cobalt
7440-48-4
Co
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3796 Heart		NA	a) 8 b) 4	a) < or = 0.07 ug/g (wet wt) b) None detected	a) 0.01 + or - 0.03 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3797 Kidney		NA	a) 19 b) 2	a) < or = 0.11 ug/g (wet wt) b) < or = 0.04 ug/g (wet wt)	a) 0.01 + or - 0.03 ug/g (wet wt) b) 0.02 + or - 0.03 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3798 Kidney		NA	a) 8 b) 9 c) 12	a) 0.00050-0.015 ug/g b) 0.0007-0.032 ug/g c) 0.0005-0.0066 ug/g Wet wt	a) 0.0010 ug/g b) 0.0041 ug/g c) 0.0020 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Cobalt
7440-48-4
Co
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3799 Liver		NA	a) 7 b) 7	a) 0.02-0.10 ug/g (wet wt) b) < or = 0.09 ug/g (wet wt)	a) 0.06 + or - 0.03 ug/g (wet wt) b) 0.05 + or - 0.03 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3800 Liver		NA	a) 8 b) 9 c) 11	a) 0.00050-0.15 ug/g b) 0.0011-0.044 ug/g c) 0.0030-0.030 ug/g Wet wt	a) 0.013 ug/g b) 0.012 ug/g c) 0.0095 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3801 Lung		NA	a) 8 b) 9 c) 11	a) 0.00040-0.013 ug/g b) 0.00050-0.064 ug/g c) 0.0020-0.090 ug/g Wet wt	a) 0.0016 ug/g b) 0.0075 ug/g c) 0.0055 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Cobalt
7440-48-4
Co
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3802 Muscle		NA	a) 6 b) 4	a) None detected b) < or = 0.13 ug/g (wet wt)	a) None detected b) 0.04 + or - 0.06 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3803 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 0.07 + or - 0.04 ppm b) 0.04 + or - 0.03 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.H. Moore, C.E. 1979 Science of the Total Environment 13:131-140
3804 Pancreas		NA	a) 6 b) 3	a) None detected b) None detected	a) None detected b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Cobalt
7440-48-4
Co
AtW 58.9332, MP 1493 C, BP 3100 C, VP 1 mm Hg at 1910 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3805 Spleen		NA	a) 7 b) 4	a) < or = 0.05 ug/g (wet wt) b) None detected	a) 0.01 + or - 0.02 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3806 Adrenal gland		AAS	a) 1 b) 5	a) Not given b) 1.12-2.39 ug/g wet wt	a) 0.38 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Hoshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3807 Aorta		NA	2	< or = 2.4 ug/g (wet wt)	1.2 + or - 1.7 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3808 Aorta		AAS	a) 1 b) 5	a) Not given b) 0.56-1.43 ug/g wet wt	a) 1.01 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, H. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3809 Blood, serum			28	a) Not given b) Not given c) Not given d) Not given	a) 166.6 + or - 7.95 ug/100 ml b) 91.5 + or - 4.91 ug/100 ml c) 103.9 + or - 5.95 ug/100 ml d) 164.5 + or - 17.69 ug/100 ml	a) 18 pellagrins b) 10 healthy volunteers c) 18 pellagrins after treatment with nicotinic acid, 300 mg/day, 3-4 wk. b) 10 healthy volunteers after 5 g l-leucine daily, 6 days. Simultaneous administration of isoleucine prevented this increase. Indemic pellagrins, 16-60 yr old and healthy males socioeconomically matched to pellagrins. COPPER; METALS; MINERAL METABOLISM; DISEASES; INDIA; BLOOD SERUM; URINE; SKIN DISEASES; AMINO ACIDS; HAIR; COMPARATIVE EVALUATIONS	Krishnamachari, K.A.V.R. 1974 American Journal of Clinical Nutrition 27:108-111
3810 Blood, serum	Ingestion		2	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 0 ug/dl b) 29 ug/dl c) 101 ug/dl d) 142 ug/dl e) 68 ug/dl f) 108 ug/dl g) 105 ug/dl	a) 10 mo old, hospital day 2 b) 10 mo old, hospital day 3 c) 10 mo old, hospital day 5 d) 10 mo old, hospital day 7 e) 11 mo old, hospital day 14 f) 11 mo old, hospital day 17 g) 11 mo old, hospital day 45 Cu admission levels below detection, then given 2.5 mg/day Copper-deficient children. CASE HISTORIES; CHILDREN; DISEASES; HAIR; COPPER; METALS; ZINC	Bradfield, R.B. Cordano, A. Baertl, J. Graham, G.G. 1980 Lancet 2(8190):343-344
3811 Blood, serum	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, H.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3812 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 144.60 + or - 3.95 ug/100 ml b) 172.14 + or - 4.76 ug/100 ml	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level in soft-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Biersbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016
3813 Blood, serum		AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 168 + or - 38 ug/ml b) 159 + or - 19 ug/ml c) 179 + or - 30 ug/ml d) 172 + or - 27 ug/ml	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from a previous study. Estimated daily intake, 1.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428
3814 Blood, serum	Ingestion		a) 12 b) 10 c) 4 d) 7 e) 11 f) 8 g) 9 h) 7	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 42.8 ug/dl b) 46.4 ug/dl c) 58 ug/dl d) 73.6 ug/dl e) 35.3 ug/dl f) 40.9 ug/dl g) 54.3 ug/dl h) 63.9 ug/dl	a) Baseline data, at age 15 + or - 6.3 days b) 4 wk c) 9 wk d) 12 wk e) Baseline data, at age 17 + or - 7.0 days f) 4 wk g) 9 wk h) 12 wk Premature infants fed formula containing 1.67 mg/l Cu (a-d) or 0.4 mg/l Cu (e-h) INFANTS; BLOOD SERUM; COPPER; DIETS; METALS	Hillman, L.S. Martin, L. Fiore, B. 1981 Journal of Pediatrics 98(2):311-313
3815 Bone marrow		AAS	a) 1 b) 5	a) Not given b) 0.32-1.07 ug/g wet wt	a) 0.82 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Moshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3816 Brain		NA		a) 2.4-12 ug/g (wet wt) b) 4.5-14 ug/g (wet wt) c) 1.7-6.5 ug/g (wet wt) d) 2.3-7.2 ug/g (wet wt)	a) 6.0 + or - 4.1 ug/g (wet wt) b) 9.3 + or - 6.7 ug/g (wet wt) c) 4.3 + or - 1.5 ug/g (wet wt) d) 5.5 + or - 2.0 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 7 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; LITHIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3817 Brain		AAS		a) Not given b) Not given c) 2.42-4.19 ug/g wet wt d) Not given e) Not given	a) 4.11 ug/g b) 4.25 ug/g c) Not given d) 5.03 ug/g e) 3.58 ug/g Wet wt	a) Worker - cerebrum (temporal) b) Worker - cerebrum (occipital) c) 5 controls - cerebrum (frontal) d) Worker - cerebellum e) Control - cerebellum Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, H. Hoshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3818 Brain		AAS	a) 8 b) 4 c) 10	a) 2.13-4.60 ug/g b) 3.26-4.09 ug/g c) 2.55-4.20 ug/g Wet wt	a) 3.23 ug/g b) 3.51 ug/g c) 3.50 ug/g Wet wt Medians	a) City residents, lower floors b) City residents, upper floors c) Suburbs and village residents Negative correlation ($P < 0.05$) between organic Pb and Cu. Autopsies. Residents of Copenhagen, its suburbs, and of villages on Zealand. Ages 12-54 yr. DENMARK; ADULTS; AUTOPSIES; CHILDREN; BRAIN; AIR POLLUTION; BIOACCUMULATION; URBAN AREAS; LEAD ORGANIC COMPOUNDS	Nielsen, T. Jensen, K.A. Grandjean, P. 1978 Nature 273(5671):602-603
3819 Brain		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 525.8 + or - 34.8 nmol/g b) 659.1 + or - 24.4 nmol/g c) 742.4 + or - 17.6 nmol/g d) 1139.8 + or - 66.3 nmol/g e) 895.9 + or - 22.8 nmol/g f) 825.1 + or - 22.7 nmol/g Dry wt SE	a) Globus pallidus, 11 samples, coefficient of variation (CV) 21.9% b) Caudate nucleus, 11 samples, CV 12.3% c) Putamen, 12 samples, CV 7.9% d) Substantia nigra, 6 samples, CV 14.2% e) Cerebral cortex, 19 samples, CV 20.1% f) Hippocampus, 13 samples, CV 19.2% Autopsy samples CEREBRAL CORTEX; MEASUREMENT METHODS; CALCIUM; COPPER; IRON; MANGANESE; BRAIN; AUTOPSIES	Goldberg, W.J. Allen, M. 1981 Clinical Chemistry 27(4):562-564

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3820 Breath	Inhalation	PIXE	1	Not given	3.8 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
3821 Hair			a) 8 b) 10	a) Not given b) Not given	a) 15.6 + or - 1.73 ug/g b) 8.7 + or - 0.57 ug/g	a) Pellagrins b) Healthy volunteers Endemic pellagrins, 16-60 yr old and healthy males socioeconomically matched to pellagrins. COPPER; METALS; MINERAL METABOLISM; DISEASES; INDIA; BLOOD SERUM; URINE; SKIN DISEASES; AMINO ACIDS; HAIR; COMPARATIVE EVALUATIONS	Krishnamachari, K.A.V.R. 1974 American Journal of Clinical Nutrition 27:108-111
3822 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 12 ppm b) 17 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
3823 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3824 Hair		ASV	1	8.58-15.09 ug/g	11.52 + or - 1.63 ug/g	Beard hair - 10 wk period. Daily doses of 100-300 mg Zn. 29 determinations. Australia AUSTRALIA; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; LEAD; METALS; TRACE ELEMENTS; ZINC	Chittleborough, G. Steel, E.J. 1980 Science of the Total Environment 15:25-35

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3825 Hair		AAS	53	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) 11-35 ug/g f) 14-68 ug/g g) 14-28 ug/g h) 13-39 ug/g i) 16-27 ug/g	a) 36 ug/g b) 13 ug/g c) 56 ug/g d) 22 ug/g e) 19 + or - 7 ug/g f) 29 + or - 11 ug/g g) 21 + or - 6 ug/g h) 25 + or - 11 ug/g i) 21 + or - 3 ug/g	a) 10 mo old patient, on admission b) 11 mo old patient, on admission c) 10 mo old, recovered d) 11 mo old recovered e) 11 controls f) 25 Kwashiorkor patients, on admission g) 9 Kwashiorkor patients, recovered h) 14 Marasmus patients, on admission i) 9 Marasmus patients, recovered Copper-deficient 10- and 11 mo olds. Normal controls, and negative controls with Marasmus and Kwashiorkor. CASE HISTORIES; CHILDREN; DISEASES; HAIR; COPPER; METALS; ZINC	Bradfield, R.B. Cordano, A. Baertl, J. Graham, G.G. 1980 Lancet 2(8190):343-344
3826 Hair		NA	a) 38 b) 24 c) 37 d) 28 e) 16 f) 19	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 11.2 + or - 0.6 ug/g b) 11.0 + or - 1.8 ug/g c) 10.2 + or - 1.7 ug/g d) 28.5 + or - 4.7 ug/g e) 31.5 + or - 4.4 ug/g f) 20.8 + or - 7.8 ug/g	a) Controls, at birth b) Full-term low birthweight, at birth c) Pre-term, at birth d) Controls, 3 mo e) Full-term low birthweight, 3 mo f) Pre-term, 3 mo Medians + or - SE Neonates in Halifax. Pre-term group mean birthweight 1880 g, 26-36 wk gestation, full-term low birthweight group mean birth weight 2371 g, 38-42 wk gestation, and full-term controls mean birthweight 3590 g, 38-42 wk gestation. HAIR; METALS; ZINC; COPPER; MANGANESE; VANADIUM; IODINE; INFANTS; SEX	Gibson, R.S. Devolfe, M.S. 1980 Nutrition Reports International 21(3):341-349
3827 Hair		NA	a) 23 b) 19 c) 42 d) 14 e) 26 f) 40	a) 4-108 ug/g b) 10-245 ug/g c) 4-245 ug/g d) 4-35 ug/g e) 6-43 ug/g f) 4-43 ug/g	a) 22 ug/g b) 59 ug/g c) 29 ug/g d) 7 ug/g e) 10 ug/g f) 9 ug/g Medians	a) Male controls b) Female controls c) All controls d) Male multiple sclerosis patients e) Female multiple sclerosis patients f) All multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3828 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
3829 Hair	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 10.1 + or - 2.1 ug/g b) 10.8 + or - ug/g c) 10.1 + or - 3.0 ug/g d) 10.8 + or - 2.3 ug/g	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from a previous study. Estimated daily intake, 1.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428
3830 Heart		NA	a) 4 b) 2	a) < or = 4.3 ug/g (wet wt) b) 2.6-6.9 ug/g (wet wt)	a) 2.4 + or - 1.8 ug/g (wet wt) b) 4.8 + or - 3.9 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3831 Kidney		NA	a) 6 b) 2	a) 1.5-3.8 ug/g (wet wt) b) 1.4-3.0 ug/g (wet wt)	a) 2.5 + or - 1.1 ug/g (wet wt) b) 2.2 + or - 1.1 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3832 Kidney		AAS	a) 1 b) 5	a) Not given b) 1.38-3.87 ug/g wet wt	a) 1.49 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Hoshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3833 Kidney		NA	a) 8 b) 9 c) 12	a) 1.07-4.19 ug/g b) 0.89-3.72 ug/g c) 0.82-3.58 ug/g Wet wt	a) 1.57 ug/g b) 1.66 ug/g c) 1.66 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3834 Liver		NA	a) 10 b) 3	a) 3.9-38 ug/g (wet wt) b) 3.4-8.2 ug/g (wet wt)	a) 16 + or - 12 ug/g (wet wt) b) 5.9 + or - 2.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3835 Liver		AAS	a) 1 b) 5	a) Not given b) 1.46-10.20 ug/g wet wt	a) 4.26 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3836 Liver		NA	a) 8 b) 9 c) 11	a) 1.44-6.90 ug/g b) 1.30-5.24 ug/g c) 1.38-5.52 ug/g Wet wt	a) 3.59 ug/g b) 2.91 ug/g c) 3.08 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
3837 Liver	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3838 Lung		NA	a) 2 b) 2	a) < or = 5.2 ug/g (wet wt) b) 0.9-6.2 ug/g (wet wt)	a) 2.6 + or - 3.6 ug/g (wet wt) b) 3.5 + or - 3.6 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3839 Lung		AAS		a) Not given b) 0.77-1.59 ug/g c) Not given d) 0.60-1.32 ug/g e) Not given f) 0.81-1.98 ug/g Wet wt	a) 0.55 ug/g b) Not give c) 0.96 ug/g d) Not given e) 1.02 ug/g f) Not given Wet wt	a) Worker, right upper lobe b) 5 controls, right upper lobe c) Worker, right lower lobe d) 5 controls, right lower lobe e) Worker, left upper lobe f) 5 controls, left upper lobe Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka; K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3840 Lung		NA	a) 8 b) 9 c) 11	a) 0.62-1.44 ug/g b) 0.17-1.54 ug/g c) 0.059-2.15 ug/g Wt wt	a) 1.10 ug/g b) 1.04 ug/g c) 1.04 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3841 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
3842 Muscle		NA	a) 4 b) 8	a) < or = 5.2 ug/g (wet wt) b) < or = 7.6 ug/g (wet wt)	a) 2.1 + or - 2.3 ug/g (wet wt) b) 2.0 + or - 2.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3843 Muscle		AAS	1	Not given	0.50 ug/g wet wt	Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Nishizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3844 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3845 Nail	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 15.6 + or - 1.8 ug/g b) 21.9 + or - 27.8 ug/g c) 23.4 + or - 12.9 ug/g d) 10.4 + or - 0.5 ug/g	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from a previous study. Estimated daily intake, 1.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428
3846 Pancreas		NA	a) 5 b) 2	a) 1.4-1.9 ug/g (wet wt) b) < or = 2.0 ug/g (wet wt)	a) 1.7 + or - 0.2 ug/g (wet wt) b) 1.0 + or - 1.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3847 Pancreas		AAS	a) 1 b) 5	a) Not given b) 0.46-2.29 ug/g wet wt	a) 0.39 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3848 Pharynx			a) 1 b) 5	a) Not given b) 0.90-1.16 ug/g wet wt	a) 0.80 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3849 Skin		AAS	a) 1 b) 5	a) Not given b) 0.29-0.45 ug/g wet wt	a) 0.38 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Hoshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
3850 Spinal cord		X-ray spectrom	a) 7 b) 12	a) 35.3-182.9 ug/g b) 19.7-118.1 ug/g Dry wt	a) 89.0 + or - 57.6 ug/g b) 46.3 + or - 28.8 ug/g Dry wt	a) Motor neuron disease patients b) Controls Ventral horn tissue, autopsy Patients died of myotrophic lateral sclerosis and progressive muscular atrophy, mean age, 58.6 + or - 13.1 yr. Controls died of various diseases at 60.9 + or - 11.1 yr. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24
3851 Spleen		NA	a) 5 b) 3	a) < or = 5.1 ug/g (wet wt) b) < or = 3.8 ug/g (wet wt)	a) 2.2 + or - 2.1 ug/g (wet wt) b) 1.3 + or - 2.2 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Asano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
3852 Urine		Colorimetry	4	a) 22.8-76.2 ug/24 hr b) 38.6-130.6 ug/24 hr c) 35.4-103.2 ug/24 hr	a) 52.4 ug/24 hr b) 89.7 ug/24 hr c) 72.1 ug/24 hr	a) Initial levels b) During 5 g leucine daily c) 5 days after leucine withdrawal Healthy volunteers. COPPER; METALS; MINERAL METABOLISM; DISEASES; INDIA; BLOOD SERUM; URINE; SKIN DISEASES; AMINO ACIDS; HAIR; COMPARATIVE EVALUATIONS	Krishnamachari, K.A.V.R. 1974 American Journal of Clinical Nutrition 27:108-111

(NEXT PAGE)

Copper
7440-50-8
Cu
AtW 63.546, MP 1083 C, BP 2595 C, VP 1 mm Hg at 1628 C, 10 mm Hg at 1870 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3853 Urine	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 43 + or - 51 ug/24 hr b) 36 + or - 22 ug/24 hr c) 31 + or - 29 ug/24 hr d) 25 + or - 8 ug/24 hr	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from a previous study. Estimated daily intake, 1.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428

Coumarin (8 CI)
2H-1-Benzopyran-2-one (9 CI)
91-64-5
C9-H6-O2
MW 146.1, MP 70 C, BP 291.0 C, VP 1 mm Hg at 106.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3854 Breath		GC-MS	54 (387 samples)	Not given	1.0 ng/l Geometric	Measured at 25 C and 760 mm Hg 63.1% occurrence Lower and upper one-Sigma limits 0.24 and 4.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cresol (8 CI) (VAN)
Phenol, methyl- (9 CI)
1319-77-3
C7-H8-O
MW 108.10, MP 10.9-35.5 C, BP 191-203 C, VP 1 mm Hg at 38-53 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3855 Urine	Dermal	GC	a) 15 b) 40	a) 8.8-128.5 mg/g creatinine b) 31.7-44.8 mg/g creatinine	a) Not given b) Not given	a) Controls b) Workers exposed to chlorophenols Workers in herbicide manufacturing plants. HERBICIDES; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; PESTICIDES; POPULATION EXPOSURE; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; PHENOLS; CANADA; URINE	Van Roosmalen, P.B. Klein, A.L. Drummond, I. 1980 International Archives of Occupational and Environmental Health 45:57-62

Cumene (8 CI)
Benzene, (1-methylethyl)- (9 CI)
98-82-8
C9-H12
MW 120.19, MP -96 C, BP 152 C, VP 10 mm Hg at 38.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3856 Breath		GC/MS	8	Not detected-21.0 ug/hr	2.6 ug/hr	Compound related to normal metabolism. No other details given. Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3857 Breath		GC-MS	54 (387 samples)	Not given	0.316 ng/l Geometric	Measured at 25 C and 760 mm Hg 16.3% occurrence Lower and upper one-Sigma limits 0.076 and 1.32 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cyanide
57-12-5
C-N
MW 26.02

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3858 Blood	Injection	Chem	50	a) 0-113 ug/l b) 33-676 ug/l c) 21-1800 ug/l d) 10-1330 ug/l e) 5.2 - 265 ug/l	a) 23 + or - 23 ug/l b) 206 + or - 189 ug/l c) 333 + or - 329 ug/l d) 102 + or - 200 ug/l e) 40 + or - 40 ug/l	a) Before drug b) 10 min after start of infusion c) At end of infusion d) After 1 hr e) After 3 hr Dose, 50-2131 ug/kg Na-nitroprusside. 16-64 yr old neurosurgical patients ADULTS; HEART DISEASES; HYPOTENSION; BLOOD; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; COMPARATIVE EVALUATIONS; SURGERY; CYANIDE; THIOCYANATES	Bogusz, M. Moroz, J. Karski, J. Gierz, J. Regieli, A. Witkowska, R. Golabek, A. 1979 Clinical Chemistry 25(1):60-63

Cyclohexane
110-82-7
C6-H12
MW 84.16, MP 6.5 C, BP 80.7 C, VP 100 mm Hg at 60.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3859 Breath		GC-MS	54 (387 samples)	Not given	5.0 ng/l Geometric	Measured at 25 C and 760 mm Hg 64.6% occurrence Lower and upper one-Sigma limits 2.7 and 9.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234
3860 Urine	Inhalation Dermal	GC/MS	10	0.1-5.6 mg/l	1.4 + or - 1.6 mg/l	As cyclohexanol (metabolite) Data also on solvents in factory air Workers in shoe factory in Italy URINE; HYDROCARBONS; METABOLITES; ITALY; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; AIR POLLUTION; OCCUPATIONAL DISEASES	Perbellini, L. Brugnone, F. Pavan, I. 1980 Toxicology and Applied Pharmacology 53:220-229

Cyclohexane, methyl-
108-87-2
C7-H14
MW 98.18, MP -126.4 C, BP 100.3 C, VP 40 mm Hg at 22.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3861 Breath		GC/MS	8	Not detected-13.0 ug/hr	1.6 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Cyclohexane, 1,2,3,4,5,6-hexachloro-, alpha- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5beta,6beta)- (9 CI)
319-84-6
C6-H6-C16
MW 290.83, MP 159.5-160 C, BP 288 C, VP 0.02 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3862 Blood, serum		GC	a) 4 of 19 b) 8 of 44 c) 7 of 50 d) 28 of 28	a) 1.4-8.3 ug/l b) 0.7-2.5 ug/l c) 3.6-29 ug/l d) 9.2-157 ug/l	a) 2.5 ug/l b) 1.3 ug/l c) 9.2 ug/l d) 38 ug/l Geometric means	a) General population - Continental south (urban) b) General population - island (rural) c) Exposed workers - Continental north (urban) d) Exposed workers - Continental south (urban) General population, ages 6-79 yr. Occupationally exposed workers, ages 20-62 yr. Yugoslavia. YUGOSLAVIA; BLOOD SERUM; DDD; DDE; DDT; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Krauthacker, B. Alebic-Kolbah, T. Kralj, M. Tkalcevic, B. Reiner, E. 1980 International Archives of Occupational and Environmental Health 45:217-220
3863 Blood, whole		GC-EC	a) 14 b) 2	a) Not detected b) Not applicable	a) Not detected b) 0.1 ng/g	a) Love Canal residents b) Volunteers, 1 positive Mean of positive samples. Limit of measurement, 0.047 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, esployees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.
3864 Milk		GC-EC GC/MS	5	< 0.1 ug/kg	Not applicable	lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olic, K. 1980 Pesticides Monitoring Journal 14(1):1-2

Cyclohexane, 1,2,3,4,5,6-hexachloro-, beta- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2beta,3alpha,4beta,5alpha,6beta)- (9 CI)
319-85-7
C6-H6-C16
MW 290.83, MP 314-315 C (sublimes), BP 60 C at 0.58 mm Hg, VP 0.005 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3865 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EKGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3866 Adipose		GC	60	0.23-2.79 ppm	0.76 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, R.H. 1978 Toxicological European Research 2(2):93-98
3867 Adipose			a) 27 b) 1 c) 1	a) Not given b) Not given c) Not given	a) 15.7 + or - 19.78 ppm b) 0.47 ppm, fat basis c) 2.0 ppm, fat basis	a) Hospital patients b) 13 yr old female with Yusho c) 46 yr old male with chronic PCB poisoning Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, beta- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2beta,3alpha,4beta,5alpha,6beta)- (9 CI)
319-85-7
C6-H6-Cl6
MW 290.83, MP 314-315 C (sublimes), BP 60 C at 0.58 mm Hg, VP 0.005 mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3868 Blood						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3869 Blood, plasma			a) 26 b) 16 c) 37 d) 1 e) 1	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 14.4 + or - 10.45 ppb b) 25.5 + or - 22.01 ppb c) 14.3 + or - 11.00 ppb d) 19 ppb e) 430 ppb	a) Hospital patients b) Emaciated persons c) Non-emaciated persons d) 13 yr old female with Yusho e) 24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3870 Blood, whole		GC-EC	a) 34 b) 11	a) 0.2-0.6 ng/g b) 0.2-1 ng/g	a) 0.3 ng/g b) 0.5 ng/g	a) Love Canal residents, 50% (17) positive samples b) Volunteers, 55% (6) positive samples Range and mean of positive samples. Limit of measurement, 0.21 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, beta- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2beta,3alpha,4beta,5alpha,6beta)- (9 CI)
319-85-7
C6-H6-Cl6
MW 290.83, MP 314-315 C (sublimes), BP 60 C at 0.58 mm Hg, VP 0.005 mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3871 Kidney			1	Not applicable	338 ppm (fat basis)	28 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3872 Liver			1	Not applicable	490 ppm (fat basis)	28 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3873 Milk		GC-EC GC/MS	10	4.1-18.6 ug/kg	9.1 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
3874 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 4.83 + or - 2.99 ppm b) 3.25 + or - 1.59 ppm c) 4.54 + or - 2.73 ppm d) 4.78 + or - 2.45 ppm e) 3.10 + or - 1.51 ppm f) 2.47 + or - 1.00 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; PESTICIDES; ORGANIC CHLORINE COMPOUNDS; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
3875 Omentum			a) 1 b) 1	a) Not applicable b) Not applicable	a) 23 ppm (fat basis) b) 4.1 ppm (fat basis)	a) 73 yr old male with colon cancer b) 66 yr old male with stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

Cyclohexane, 1,2,3,4,5,6-hexachloro-, delta- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3alpha,4beta,5alpha,6beta)- (9 CI)
319-86-8
C6-H6-Cl6
MW 290.83, MP 141.5-142.0 C, BP 60 C at 0.34 mm Hg, VP 0.02 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3876 Blood, whole		GC-EC	a) 33 b) 12	a) 0.1-0.2 ng/g b) Not applicable	a) 0.2 ng/g b) 0.5 ng/g	a) Love Canal residents, 9% (3) positive b) Volunteers, 8% (1) positive Range and mean of positive samples. Limit of measurement, 0.12 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Cyclohexane, 1,2,3,4,5,6-hexachloro-, gamma- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)- (9 CI)
58-89-9
C6-H6-Cl6
MW 290.85, MP gamma-isomer crystals 112.5 C, BP 323.4 C, 176.2 C at 10 mm Hg, VP 0.14 mm Hg at 40 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3877 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EKGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, gamma- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)- (9 CI)
58-89-9
C6-H6-Cl6
MW 290.85, MP gamma-isomer crystals 112.5 C, BP 323.4 C, 176.2 C at 10 mm Hg, VP 0.14 mm Hg at 40 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3878 Amniotic fluid		GC-EC	50	9-61 ppb	27.12 ppb Geometric	50 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3879 Blood		GC-EC	a) 25 b) 15 c) 10	a) 7-39 ppb b) 15-75 ppb c) 40-136 ppb	a) 18.9 + or - 8.8 ppb b) 39.7 + or - 14.3 ppb c) 73.3 + or - 32.2 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9
3880 Blood, serum		GC	a) 2 of 19 b) 29 of 50 c) 28 of 28	a) 2.1-6.7 ug/l b) 3.6-30 ug/l c) 4.5-98 ug/l	a) 3.8 ug/l b) 10.4 ug/l c) 26 ug/l Geometric means	a) General population - continental south (urban) b) Exposed workers - continental north (urban) c) Exposed workers - continental south General population, ages 6-79 yr. Occupationally exposed workers, ages 20-62 yr. Yugoslavia. YUGOSLAVIA; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Krauthacker, B. Alebic-Kolbah, T. Kralj, M. Tkalcevic, B. Reiner, E. 1980 International Archives of Occupational and Environmental Health 45:217-220
3881 Blood, whole		GC-EC	a) 33 b) 11	a) 0.1-0.6 ng/g b) 0.1-0.3 ng/g	a) 0.2 ng/g b) 0.2 ng/g	a) Love Canal residents, 21% (7) positive b) Volunteers, 36% (4) positive Range and mean of positive samples. Limit of measurement, 0.068 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, gamma- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)- (9 CI)
58-89-9
C6-H6-C16
MW 290.85, MP gamma-isomer crystals 112.5 C, BP 323.4 C, 176.2 C at 10 mm Hg, VP 0.14 mm Hg at 40 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3882 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.061 ppm b) 0-0.270 ppm c) 0-0.270 ppm d) Not given	a) 0.011 ppm b) 0.037 ppm c) 0.025 ppm d) 0.0004 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
3883 Placenta		GC-EC	50	62-1631 ppb	389.64 ppb Geometric	48 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3884 Placenta		GC-EC	a) 25 b) 15 c) 10	a) 2-23 ppb b) 7-41 ppb c) 10-66 ppb	a) 8.9 + or - 4.3 ppb b) 20.4 + or - 8.8 ppb c) 30.6 + or - 15.5 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

Cyclohexanol
108-93-0
C6-H12-O
MW 100.16, MP 24 C, BP 161.5 C, VP 1 mm Hg at 21.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3885 Breath		GC/MS	8	Not detected-1.6 ug/hr	0.5 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Cyclohexanol
108-93-0
C6-H12-O
MW 100.16, MP 24 C, BP 161.5 C, VP 1 mm Hg at 21.0 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3886 Breath		GC-MS	54 (387 samples)	Not given	2.6 ng/l Geometric	Measured at 25 C and 760 mm Hg 65.6% occurrence Lower and upper one-Sigma limits 1.03 and 6.6 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cyclopenta(c)furo(3',2':4,5)furo(2,3-h)(1)benzopyran-1,11-dione, 2,3,6aalpha,9aalpha-tetrahydro-4-methoxy- (8 CI)
Cyclopenta(c)furo(3',2':4,5)furo(2,3-h)(1)benzopyran-1,11-dione, 2,3,6a,9a-tetrahydro-4-methoxy-, (6aR-cis)- (9 CI)
1162-65-8
C17-H12-O6
MW 312.3, MP 268-269 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3887 Blood, serum	Ingestion	HPLC MS	1	Not applicable	3.39 ng/ml	On admission. Aflatoxin source unknown. 31 yr old black patient with hepatic carcinoma. Aflatoxin-impaired immune response, liver cancer. Clotting time affected, death caused by hemorrhage after surgery. ADULTS; CASE HISTORIES; NEOPLASMS; BLOOD SERUM; AFLATOXINS; CARCINOGEN; HEALTH HAZARDS; FOOD CONTAMINATION	Wray, B.B. Hayes, A.W. 1980 Environmental Research 22:400-403

Cyclopentane, methyl-
96-37-7
C6-H12
MW 84.16, MP -142.5 C, BP 71.8 C, VP 100 mm Hg at 17.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3888 Breath		GC/MS	8	Not detected-11.0 ug/hr	1.5 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Cyclopentanol
96-41-3
C5-H10-O
MW 86.13, MP -19 C, BP 139.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3889 Breath		GC-MS	54 (387 samples)	Not given	0.329 ng/l Geometric	Measured at 25 C and 760 mm Hg 8.5% occurrence Lower and upper one-Sigma limits 0.069 and 1.59 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Cystine
24645-67-8
C6-H12-N2-O4-S2
MW 240.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3890 Nail		Colorimetry		a) 10.6-16.2% b) 10.7-16.4% Dry wt	a) 13.3 + or - 1.6% b) 13.8 + or - 1.8% Dry wt	a) Exposed workers b) Controls No association between duration of exposure and cystine content. Workers, 22-52 yr old, in vanadium factory, Finland. AMINO ACIDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NAILS; FINLAND	Kiviluoto, T. Pyy, L. Pakarinen, A. 1980 International Archives of Occupational and Environmental Health 46:179-182

Decanal
112-31-2
C10-H20-O
MW 156.27, MP -5 C, BP 208-209 C, VP 1 mm Hg at 51.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3891 Breath		GC-MS	54 (387 samples)	Not given	0.261 ng/l Geometric	Measured at 25 C and 760 mm Hg 56.1% occurrence Lower and upper one-Sigma limits 0.097 and 0.700 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Decane
124-18-5
C10-H22
MW 142.3, MP -29.7 C, BP 174.1 C, VP 1 mm Hg at 16.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3892 Breath		GC-MS	54 (387 samples)	Not given	0.198 ng/l Geometric	Measured at 25 C and 760 mm Hg 8.5% occurrence Lower and upper one-Sigma limits 0.044 and 0.893 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Dibenzofuran, 2,3,7,8-tetrachloro-
51207-31-9
C12-H4-Cl4-O
MW 306

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3893 Adipose	Ingestion		1	Not applicable	1.84 ppb	Autopsy tissue. Represents 59% recovery 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43
3894 Brain	Ingestion		1	Not applicable	0.06 ppb	Autopsy tissue. Represents 60% recovery 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43

(NEXT PAGE)

Dibenzofuran, 2,3,7,8-tetrachloro-
51207-31-9
C12-H4-Cl4-O
MW 306

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3895 Kidney	Ingestion		1	Not applicable	0.04 ppb	Autopsy tissue. Represents 60% recovery 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43
3896 Liver	Ingestion		1	Not applicable	0.15 ppb	Autopsy tissue. Represents 64% recovery 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43
3897 Lung	Ingestion		1	Not applicable	0.06 ppb	Autopsy tissue. Represents 60% recovery. Calculated total body amount 40 ug 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43
3898 Pancreas	Ingestion		1	Not applicable	1.04 ppb	Autopsy tissue. Represents 59% recovery 55 yr old woman who died of pancreatic carcinoma 7 mo after industrial accident in Seveso, Italy, 1976 All exposed residents had burnlike skin lesions, some with chloracne ITALY; ADOLESCENTS; ADULTS; CASE HISTORIES; CHILDREN; ADIPOSE TISSUE; BRAIN; KIDNEYS; LIVER; LUNGS; PANCREAS; HEALTH HAZARDS; INDUSTRIAL ACCIDENTS; NEOPLASMS	Reggiani, G. 1980 Journal of Toxicology and Environmental Health 6:27-43

Dibutylamine (8 CI)
1-Butanamine, n-butyl- (9 CI)
111-92-2
C8-H19-N
MW 129.24, MP -60 to -59 C, BP 159-160 C, VP 2 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3899 Breath		GC-MS	54 (387 samples)	Not given	0.218 ng/l Geometric	Measured at 25 C and 760 mm Hg 6.5% occurrence Lower and upper one-Sigma limits 0.043 and 1.11 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Dimethylamine, N-nitroso- (8 CI)
Methanamine, N-methyl-N-nitroso- (9 CI)
62-75-9
C2-H6-N2-O
MW 74.1, BP 152 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3900 Blood		GC	8	< 0.5-1.3 ng/ml	Not given	Before and after meal high in nitrate and secondary amines. No significant effect of meal. 32 samples. 17 and 20 yr old Japanese. Possible nitrosamine formation in lower GI tract. JAPAN; ADULTS; BLOOD; DIETS; NITRATES; NITROSAMINES; METABOLITES	Yamamoto, M. Yamada, T. Tanimura, A. 1980 Food and Cosmetics Toxicology 18:297-299

Dodecane
112-40-3
C12-H26
MW 170.3, MP -12 C, BP 216.2 C, VP 1 mm Hg at 47.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3901 Breath		GC-MS	54 (387 samples)	Not given	0.130 ng/l Geometric	Measured at 25 C and 760 mm Hg 38.2% occurrence Lower and upper one-Sigma limits 0.038 and 0.441 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

D00079 (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3902 Urine	Ingestion	Radiometry	6	0.007-0.022%	0.016%	% excreted in urine during 96 hr after 50 uCi. Most of dose excreted in feces, blood negative. Healthy volunteers, 22-34 yr old. FOOD ADDITIVES; FOOD PRESERVATIVES; METABOLISM; URINE; ARIZONA	Walson, P.D. Carter, D.E. Ryerson, B.A. Halladay, S.C. 1979 Food and Cosmetics Toxicology 17:201-203

D00478 (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3903 Urine	Ingestion	Radiometry	6	0.028-0.063%	0.041%	% excreted during 96 hr after 50 uCi. Most of dose excreted in feces, blood negative. FOOD ADDITIVES; FOOD PRESERVATIVES; METABOLISM; URINE; ARIZONA	Walson, P.D. Carter, D.E. Ryerson, B.A. Halladay, S.C. 1979 Food and Cosmetics Toxicology 17:201-203

Ethane, 1,1-dichloro-
75-34-3
C2-H4-Cl2
MW 99.0, MP -97.7 C, BP 57.3 C, VP 230 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3904 Breath		GC/MS	8	Not applicable	Trace amount	Compound from unknown origin. No other details given. Detected in only 1 subject Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethane, 1,1-dichloro-2,2-bis(p-chlorphenyl)- (8 CI)
Benzene, 1,1'-(2,2-dichloroethylidene)bis(4-chloro- (9 CI)
72-54-8
C14-H10-Cl4
MW 350.46, MP 221-222 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3905 Adipose		GC	60	<0.10-1.05 ppm	0.27 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, R.H. 1978 Toxicological European Research 2(2):93-98

(NEXT PAGE)

Ethane, 1,1-dichloro-2,2-bis(p-chlorphenyl)- (8 CI)
Benzene, 1,1'-(2,2-dichloroethylidene)bis(4-chloro- (9 CI)
72-54-8
C14-H10-C14
RR 350.46, MF 221-222 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3906 Amniotic fluid		GC-EC	50	1-24 ppb	9.99 ppb Geometric	40 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3907 Blood		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-23 ppb b) Not detectable-35 ppb c) Not detectable-432 ppb	a) 6.9 + or - 7.9 ppb b) 15.2 + or - 12.5 ppb c) 65.5 + or - 129.4 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9
3908 Blood, plasma		GC	a) 139 b) 175 c) 199 d) 210	a) 0-1.3 ppb b) 0-4.5 ppb c) 0-5.0 ppb d) 0-4.2 ppb	a) 0.1 ppb b) 0.4 ppb c) 0.3 ppb d) 0.3 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Pinklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651
3909 Blood, serum		GC	a) 31 of 41 b) 20 of 44 c) 10 of 19 d) 35 of 50 e) 8 of 28	a) 0.5-2.1 ug/l b) 2.5-23 ug/l c) 3.4-17 ug/l d) 3.1-318 ug/l e) 3.5-11 ug/l	a) 1.1 ug/l b) 6.4 ug/l c) 5.2 ug/l d) 11 ug/l e) 6.2 ug/l Geometric means	a) General population - continental central (rural) b) General population - island (rural) c) General population - continental south (urban) d) Exposed workers - continental north (urban) e) Exposed workers - continental south (urban) General population, ages 6-79 yr. Occupationally exposed workers, ages 20-62 yr. Yugoslavia. YUGOSLAVIA; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; PESTICIDES; HEXACHLOROCYCLOHEXANE; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Krauthacker, B. Alebic-Kolbah, T. Krali, M. Tkalcevic, B. Reiner, E. 1980 International Archives of Occupational and Environmental Health 45:217-220

(NEXT PAGE)

Ethane, 1,1-dichloro-2,2-bis(p-chlorphenyl)- (8 CI)
Benzene, 1,1'-(2,2-dichloroethylidene)bis(4-chloro- (9 CI)
72-54-8
C14-H10-Cl4
MW 350.46, MP 221-222 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3910 Milk		GC-EC GC/MS	5	< 1 ug/kg	Not applicable	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olic, K. 1980 Pesticides Monitoring Journal 14(1):1-2
3911 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.980 ppm b) 0-0.149 ppm c) 0-0.980 ppm d) Not given	a) 0.100 ppm b) 0.020 ppm c) 0.057 ppm d) 0.001 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
3912 Placenta		GC-EC	50	80-1031 ppb	38.21 ppb Geometric	13 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3913 Placenta		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-41 ppb b) Not detectable-42 ppb c) Not detectable-75 ppb	a) 4.9 + or - 8.3 ppb b) 10.7 + or - 10.7 ppb c) 20.6 + or - 22.8 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BIOCD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

Ethane, 1,1,1-trichloro-
71-55-6
C2-H3-Cl3
MW 133.42, MP -30.41 C, BP 74.1 C, VP 100 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3914 Breath		GC/MS	8	Not detected-140.0 ug/hr	20.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3915 Breath		GC-MS	54 (387 samples)	Not given	1.8 ng/l Geometric	Measured at 25 C and 760 mm Hg 28.7% occurrence Lower and upper one-Sigma limits 0.42 and 7.7 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
Benzene, 1-chloro-2-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)- (9 CI)
789-02-6
C14-H9-Cl5
MW 354.49, BP 74-74.5 C (cor)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3916 Amniotic fluid		GC-EC	50	0.5-11 ppb	1.06 ppb Geometric	15 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3917 Blood, plasma		GC	a) 139 b) 175 c) 199 d) 210	a) 0-2.7 ppb b) 0-3.9 ppb c) 0-2.7 ppb d) 0-1.6 ppb	a) 0.2 ppb b) 0.4 ppb c) 0.2 ppb d) 0.1 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Finklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
Benzene, 1-chloro-2-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)- (9 CI)
789-02-6
C14-H9-C15
MW 354.49, BP 74-74.5 C (cor)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3918 Placenta		GC-EC	50	9-63 ppb	49.63 ppb Geometric	20 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI)
50-29-3
C14-H9-C15
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3919 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoricology and Environmental Safety 1:89-110
3920 Adipose		GC	60	0.20-3.70 ppm	1.52 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, R.H. 1978 Toxicological European Research 2(2):93-98
3921 Adipose			27	Not given	1.4 + or - 1.26 ppm	Hospital patients Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI)
50-29-3
C14-H9-Cl5
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3922 Adipose		GC-EC	a) 22 b) 14 c) 6 d) 6 e) 6	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 2.60 + or - 1.33 mg/kg b) 1.86 + or - 1.41 mg/kg c) 0.95 + or - 0.26 mg/kg d) 0.91 + or - 0.81 mg/kg e) 0.75 + or - 0.56 mg/kg	a) Elderly men b) Elderly women c) Young men d) Young women e) Newborns Perirenal tissue 1976 survey. Significantly higher in elderly, particularly in men ($P < 0.05$). Significantly lower levels in elderly compared to 1969/70 survey. Autopsies from 3 donor groups, average ages 70 yr, 24 yr, and 25-35 wk, Oslo, Norway. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
3923 Blood						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; ICLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3924 Blood		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-18 ppb b) 6-234 ppb c) 6-440 ppb	a) 4.5 + or - 4.1 ppb b) 58.8 + or - 88.5 ppb c) 136.8 + or - 152.8 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 9 wk Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI)
50-29-3
C14-H9-C15
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3925 Blood, plasma			a) 27 b) 16 c) 37	a) Not given b) Not given c) Not given	a) 3.5 + or - 2.50 ppb b) 4.7 + or - 5.53 ppb c) 3.0 + or - 1.96 ppb	a) Hospital patients b) Emaciated persons c) Non-emaciated persons Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, M. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3926 Blood, plasma		GC	a) 139 b) 175 c) 199 d) 210	a) 0.6-28.2 ppb b) 0.1-62.7 ppb c) 0.1-6.6 ppb d) 0-6.0 ppb	a) 8.8 ppb b) 5.4 ppb c) 1.7 ppb d) 1.6 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Finklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651
3927 Blood, serum		GC	a) 32 of 41 b) 8 of 19 c) 17 of 44 d) 32 of 50 e) 7 of 28	a) 1.1-5.3 ug/l b) 3.7-17 ug/l c) 3.1-39 ug/l d) 3.7-96 ug/l e) 4.7-29 ug/l	a) 2.2 ug/l b) 6.7 ug/l c) 7.2 ug/l d) 16 ug/l e) 11 ug/l Geometric means	a) General population - continental central (rural) b) General population - continental south (urban) c) General population - island (rural) d) Exposed workers - continental north (urban) e) Exposed workers - continental south (urban) General population, ages 6-79 yr. Occupationally exposed workers, ages 20-62 yr. Yugoslavia. YUGOSLAVIA; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Krauthacker, B. Alebic-Kolbah, T. Kralj, M. Tkalcevic, B. Reiner, E. 1980 International Archives of Occupational and Environmental Health 45:217-220

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI)
50-29-3
C14-H9-C15
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3928 Blood, serum						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3929 Milk		GC-EC GC/MS	10	8.0-135.4 ug/kg	50.8 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
3930 Milk			25	Not given	180 + or - 140 ppb	Milk bank donors California CALIFORNIA; ADULTS; MILK; BIOACCUMULATION; LACTATION; DDE; DDT; PESTICIDES	Harrod, J.R. Asquith, M.T. 1980 New England Journal of Medicine 303(16):945-946
3931 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 50 + or - 38 ug/kg b) 49 + or - 31 ug/kg c) 39 + or - 17 ug/kg d) 29 + or - 13 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Porsgrunn, non-industrialized fishing community 1976 survey. Significant decrease at all sampling locations compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI)
50-29-3
C14-H9-C15
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3932 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.095-33.122 ppm b) 0-10.361 ppm c) 0-33.122 ppm d) Not given	a) 4.223 ppm b) 2.795 ppm c) 3.461 ppm d) 0.065 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
3933 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.45 + or - 0.22 ppm b) 0.42 + or - 0.46 ppm c) 0.38 + or - 0.16 ppm d) 0.44 + or - 0.15 ppm e) 0.49 + or - 0.18 ppm f) 0.29 + or - 0.09 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. PESTICIDES; DDT; ORGANIC CHLORINE COMPOUNDS; JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
3934 Placenta		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-14 ppb b) Not detectable-55 ppb c) Not detectable-210 ppb	a) 4.1 + or - 3.9 ppb b) 19.8 + or - 14.9 ppb c) 57.2 + or - 71.8 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, age 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9
3935 Urine						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; ICLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

Ethane, 1,1,1-trichloro-2,2,2-trifluoro-
359-58-5
C2-Cl3-F3
MW 187.38, MP 14.2 C, BP 45.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3936 Breath		GC/MS	8	Not detected-580.0 ug/hr	88.3 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethane, 1,2-dichloro-
107-06-2
C2-H4-Cl2
MW 98.96, MP -35.36 C, BP 83.5 C, VP 100 mm Hg at 29.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3937 Breath		GC/MS	8	Not detected-0.80 ug/hr	0.10 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOPOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethanol, 2,2,2-trichloro-
115-20-8
C2-H3-Cl3-O
MW 149.42, MP 18 C, BP 151-153 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3938 Blood	Inhalation	GC	5	a) 0-2.8 ug/ml b) 0-1.4 ug/ml	a) Not given b) Not given	a) 10 hr and day 5 of 50 ppm trichloroethylene, 6 hr/day, on 5 consecutive days b) 10 hr and day 5 of 50 trichloroethylene, 6 hr/day on 5 consecutive days plus ethanol pretreatment. Ethanol given to maintain blood level of 0.06%. Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189

(NEXT PAGE)

Ethanol, 2,2,2-trichloro-
115-20-8
C2-H3-Cl3-O
MW 149.42, MP 18 C, BP 151-153 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3939 Urine	Inhalation	GC	5	a) 160-35 mg b) 120-10 mg	a) Not given b) Not given	a) Day 5 and 6 of 50 ppm trichloroethylene, 6 hr/day, 5 consecutive days. Initial value, 102 mg on day 1 b) Days 3 and 7 of 50 ppm trichloroethylene, 6 hr/day, 5 consecutive days plus ethanol pretreatment. Initial value, 70 mg on day 1 24 hr excretions. Ethanol given to maintain blood level of 0.06%. Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189

Ethene, dichlorodifluoro-
27156-03-2
C2-Cl2-F2
MW 133

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3940 Breath		GC/MS	8	Not detected-0.029 ug/hr	0.009 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
MW 46.07, MP -117.3 C, BP 78.32 C, VP 40 mm Hg at 19 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3941 Blood	Inhalation	GC	6	a) 0.039-0.064% b) 0.043-0.073%	a) 0.054% b) 0.059%	a) No trichloroethylene treatment b) 100 ppm trichloroethylene Range and mean for 6 hr period 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189

(NEXT PAGE)

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
FW 46.07, MP -117.3 C, BP 78.32 C, VP 40 mm Hg at 19 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3942 Breath		GC/MS		0.05-0.36 ppm	0.13 ppm	Corrected for level in inhaled air Healthy adults SWEDEN; ADULTS; MEASUREMENT METHODS; METHANOL	Jansson, B.O. Larsson, B.T. 1969 Journal of Laboratory and Clinical Methods 74(6):961-966
3943 Breath		GC/MS	8	Not detected-440.0 ug/hr	136.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3944 Breath		GC-MS	54 (387 samples)	Not given	9.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 65.6% occurrence Lower and upper one-Sigma limits 4.85 and 18.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Ethyl ether (8 CI)
Ethane, 1-1'-oxybis- (9 CI)
60-29-7
C4-H10-O
FW 74.12, MP -116.2 C, BP 34.6 C, VP 442 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3945 Breath		GC-MS	54 (387 samples)	Not given	0.331 ng/l Geometric	Measured at 25 C and 760 mm Hg 37.5% occurrence Lower and upper one-Sigma limits 0.072 and 1.52 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Ethylene (8 CI)
Ethene (9 CI)
74-85-1
C2-H4
MW 28.05 C, MP -169.4 C, BP -103.9 C, VP 100 mm Hg at 131.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3946 Breath		GC/MS	8	Not detected-120.0 ug/hr	15.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethylene, chloro- (8 CI)
Ethene, chloro- (9 CI)
75-01-4
C2-H3-Cl
MW 62.50, BP -13.4 C, VP 2600 mm at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3947 Breath	Inhalation	GC	5	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 27.6 mg/cu m b) 11.2 mg/cu m c) 5.8 mg/cu m d) 2.84 mg/cu m e) 1.30 mg/cu m f) 0.54 mg/cu m	a) Immediately after 60.0 mg/cu m b) Immediately after 30.0 mg/cu m c) Immediately after 15.0 mg/cu m d) 30 min after 60.0 mg/cu m e) 30 min after 30.0 mg/cu m f) 30 min after 15.0 mg/cu m 6 hr exposure Healthy 26-31 yr olds, Poland. POLAND; ADULTS; BREATH; VINYL COMPOUNDS; INHALATION	Krajewski, J. Dobecki, M. Gromiec, J. 1980 British Journal of Industrial Medicine 37:373-374
3948 Breath		GC/MS	8	Not detected-0.73 ug/hr	0.09 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethylene, chlorofluoro- (8 CI)
Ethene, chlorofluoro- (9 CI)
26988-99-2
C2-H2-Cl-F
MW 80.48

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3949 Breath		GC/MS	8	Not detected-0.54 ug/hr	0.07 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethylene, tetrachloro- (8 CI)
Ethene, tetrachloro- (9 CI)
127-18-4
C2-Cl4
MW 165.85, BP 121 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3950 Blood	Inhalation	GC-EC	1	Not applicable	4.5 mg/l	Autopsy, 24 hr after death, dose undetermined. 53 yr old, 70 kg, dry cleaner, VA. VIRGINIA; ADULTS; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; FORENSIC MEDICINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS	Levine, B. Fierro, M.F. Goza, S.W. Valentour, J.C. 1981 Journal of Forensic Sciences 26(1):206-209
3951 Brain	Inhalation	GC-EC	1	Not applicable	69.0 mg/kg	Autopsy, 24 hr after death, dose undetermined. 53 yr old, 70 kg, dry cleaner, VA. VIRGINIA; ADULTS; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; FORENSIC MEDICINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Levine, B. Fierro, M.F. Goza, S.W. Valentour, J.C. 1981 Journal of Forensic Sciences 26(1):206-209
3952 Breath	Inhalation	GC	a) 29 b) 62 c) 16 d) 18 e) 29	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 5 mg/cu m b) 1 mg/cu m c) 0.2 mg/cu m d) 73 mg/cu m e) <0.1 mg/cu m Geometric means	a) Residents living above dry-cleaning shops b) Residents living adjacent to shops c) Residents living 2 houses away d) Shop employees e) Residents across street (controls) Alveolar air, mean of 2 samples Netherlands Headache, dizziness and irritation of nose throat and eyes. Tremor and liver malfunction in workers possibly resulted from alcohol consumption. NETHERLANDS; BREATH; CHLORINE ORGANIC COMPOUNDS; ATMOSPHERE; HEALTH HAZARDS; INDUSTRIAL PLANTS; INDUSTRIAL POLLUTION; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; URBAN AREAS	Verberk, M.M. Scheffers, T.M.L. 1980 Environmental Research 21:432-437

(NEXT PAGE)

thylene, tetrachloro- (8 CI)
Ethene, tetrachloro- (9 CI)
127-18-4
C2-C14
MW 165.85, BP 121 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3953 Breath		GC/MS	8	Not detected-2.0 ug/hr	0.3 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3954 Breath		GC-MS	54 (387 samples)	Not given	2.6 ng/l Geometric	Measured at 25 C and 760 mm Hg 30.2% occurrence Lower and upper one-Sigma limits 0.51 and 13.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Riddly-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234
3955 Kidney	Inhalation	GC-EC	1	Not applicable	71.0 mg/kg	Autopsy, 24 hr after death, dose undetermined. 53 yr old, 70 kg, dry cleaner, VA. VIRGINIA; ADULTS; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; FORENSIC MEDICINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Levine, B. Fierro, M.F. Goza, S.W. Valentour, J.C. 1981 Journal of Forensic Sciences 26(1):206-209
3956 Liver	Inhalation	GC-EC	1	Not applicable	280.0 mg/kg	Autopsy, 24 hr after death, dose undetermined. 53 yr old, 70 kg, dry cleaner, VA. VIRGINIA; ADULTS; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; FORENSIC MEDICINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Levine, B. Fierro, M.F. Goza, S.W. Valentour, J.C. 1981 Journal of Forensic Sciences 26(1):206-209
3957 Lung	Inhalation	GC-EC	1	Not applicable	30.0 mg/kg	Autopsy, 24 hr after death, dose undetermined. 53 yr old, 70 kg, dry cleaner, VA. VIRGINIA; ADULTS; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; FORENSIC MEDICINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Levine, B. Fierro, M.F. Goza, S.W. Valentour, J.C. 1981 Journal of Forensic Sciences 26(1):206-209

(NEXT PAGE)

Ethylene, tetrachloro- (8 CI)
Ethene, tetrachloro- (9 CI)
127-18-4
C2-Cl4
MW 165.85, BP 121 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3958 Urine	Inhalation	Colorimetry	2	a) 1-7.8 mg/l b) 0.3-5 mg/l	a) Not given b) Not given	a) Start of exposure to peak at 10 hr. 2.3 mg/l at 22 hr b) Start of exposure to peak at 12-20 hr. 4.3 mg/l at 25 hr As trichloroacetic acid after exposure to tetrachloroethylene vapors (390 ug/l) over 6 hr with two 30-min breaks. Elimination only a few percent of dose. Estimated from graphs. Volunteers POLAND; URINE; METABOLISM; CHLORINATED HYDROCARBONS	Bolanowska, W. Golacka, J. 1972 Medycyna Pracy 2(23):109-119; Tr-78-0130

Ethylene, trichloro- (8 CI)
Ethene, trichloro- (9 CI)
79-01-6
C2-H-Cl3
MW 131.40, ME 73 C, BP 87.1 C, VP 100 mm Hg at 32 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3959 Blood	Inhalation	GC	6	a) 0-2.8 ug/ml b) 0-1.3 ug/ml	a) Not given b) Not given	a) 0 and 6 hr after start of 100 ppm for 6 hr. Final value, 0.2 ug/ml at 24 hr b) 0 and 4 hr after start of 100 ppm for 6 hr plus ethanol pretreatment. Final value, 0.1 ug/ml at 24 hr. Ethanol given to maintain blood level of 0.06% Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189
3960 Breath	Inhalation	GC	6	a) 0-38 ppm b) 0-11 ppm	a) Not given b) Not given	a) 0 and 5 hr after start of 100 ppm for 6 hr. Final value, 1 ppm at 24 hr b) 0 and 5 hr start of 100 ppm for 6 hr plus ethanol pretreatment. Final value, < 1 ppm at 24 hr. Ethanol given to maintain blood level of 0.06%. Estimated from graph. 20-26 yr old students, wt 62-77 kg. CHLORINATED HYDROCARBONS; ALCOHOLIC BEVERAGES; BLOOD; BLOOD PLASMA; URINE; METABOLITES; METABOLISM; ADULTS; GERMANY	Muller, G. Spassowski, M. Henschler, D. 1975 Archives of Toxicology 33:173-189

(NEXT PAGE)

Ethylene, trichloro- (8 CI)
Ethene, trichloro- (9 CI)
79-01-6
C2-H-Cl3
MW 131.40, MP 73 C, BP 87.1 C, VP 100 mm Hg at 32 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3961 Breath		IR GC	4	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 28.7 ppm b) 58.3 ppm c) 14.2 ppm d) 29.3 ppm e) 9.9 ppm g) 13.6 ppm	a) 1 min after 200 ppm, 7.5 hr b) 1 min after 200 ppm, 7.5 hr, plus ethanol c) 30 min after 200 ppm, 7.5 hr d) 30 min after 200 ppm, 7.5 hr, plus ethanol e) 1 hr after 200 ppm, 7.5 hr g) 60 min after 200 ppm, 7.5 hr, plus ethanol Ethanol dose, 1 qt beer or 90 ml vodka after 5.5 hr of TCE Healthy 19-46 yr olds Vasodilatation of superficial vessels on face, chest, shoulders, between scapulae, peaking at about 30 min, fading by 90 min. Lesions not accompanied by subjective response, or changes in blood pressure, EKG, CBC, urinalysis, SMA-12 panel. ADULTS; DERMATITIS; BREATH; DRUG INTERACTION; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; HEALTH HAZARDS	Stewart, R.D. Hake, C.L. Peterson, J.E. 1974 Archives of Environmental Health 29:1-5
3962 Breath		GC/MS	8	Not detected-3.9 ug/hr	0.54 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3963 Urine	Inhalation Dermal	GC/MS	10	4.4-22 mg/l	10 + or - 5.9 mg/l	As trichloroethanol (metabolite) Data also on solvents in factory air Workers in shoe factory in Italy URINE; HYDROCARBONS; METABOLITES; ITALY; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; AIR POLLUTION; OCCUPATIONAL DISEASES	Perbellini, L. Brugnone, F. Pavan, I. 1980 Toxicology and Applied Pharmacology 53:220-229

Ethylene, 1,1-dichloro- (8 CI)
Ethene, 1,1-dichloro- (9 CI)
75-35-4
C2-H2-C12
MW 96.94, MP -122.1 C, BP 37 C, VP 100 mm Hg at 15 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3964 Breath		GC/MS	8	Not detected-13.0 ug/hr	1.6 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-C14
MW 318.02, MP 88.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3965 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3966 Adipose		GC	60	0.75-19.80 ppm	6.50 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, R.H. 1978 Toxicological European Research 2(2):93-98

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MP 88.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3967 Adipose			a) 27 b) 1 c) 1	a) Not given b) Not given c) Not given	a) 11.9 + or - 9.70 ppm b) 1.6 ppm, fat basis c) 1.5 ppm, fat basis	a) Hospital patients b) 13 yr old female with Yusho c) 46 yr old male with chronic PCB poisoning Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, H. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3968 Amniotic fluid		GC-EC	50	2-21 ppb	10.51 ppb Geometric	40 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3969 Blood						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EKGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; ICLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3970 Blood		GC-EC	a) 25 b) 15 c) 10	a) 9-32 ppb b) 13-281 ppb c) 32-325 ppb	a) 12.6 + or - 70 ppb b) 57.8 + or - 65.3 ppb c) 163.8 + or - 105.2 ppb	a) Controls, full-term pregnancies t) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk Healthy, non-exposed, pregnant women, age 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MP 88.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3971 Blood, plasma			a) 27 b) 17 c) 37 d) 1 e) 1	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 20.1 + or - 10.51 ppb b) 35.6 + or - 22.65 ppb c) 21.9 + or - 15.95 ppb d) 13 ppb e) 180 ppb	a) Hospital patients b) Emaciated persons c) Non-emaciated persons d) 13 yr old female with Yusho e) 24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3972 Blood, plasma		GC	a) 139 b) 175 c) 199 d) 210	a) 0.8-43.5 ppb b) 0.1-18.5 ppb c) 0.5-7.4 ppb d) 0.3-9.7 ppb	a) 10.5 ppb b) 6.2 ppb c) 2.6 ppb d) 3.4 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Finklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651
3973 Blood, serum		GC	a) 41 b) 19 c) 50 d) 28	a) 1.2-31 ug/l b) 9.2-118 ug/l c) 7.1-213 ug/l d) 4.1-95 ug/l	a) 6.9 ug/l b) 29 ug/l c) 53 ug/l d) 23 ug/l Geometric means	a) General population - continental central (rural) b) General population - continental south (urban) c) Exposed workers - continental north (urban) d) Exposed workers - continental south (urban) General population, ages 6-79 yr. Occupationally exposed workers, ages 20-62 yr. Yugoslavia. YUGOSLAVIA; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Krauthacker, B. Alebic-Kolbah, T. Kralj, M. Tkalcevic, B. Reiner, E. 1980 International Archives of Occupational and Environmental Health 45:217-220
3974 Kidney			1	Not applicable	76 ppm (fat basis)	24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MF 88.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3975 Liver			1	Not applicable	150 ppm (fat basis)	24 yr old male with aplastic anemia and stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, M. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3976 Milk		GC-EC GC/MS	10	42.0-418.5 ug/kg	175.7 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
3977 Milk			25	Not given	2130 + or - 1450 ppb	Milk bank donors California CALIFORNIA; ADULTS; MILK; BIOACCUMULATION; LACTATION; DDE; DDT; PESTICIDES	Harrod, J.R. Asquith, M.T. 1980 New England Journal of Medicine 303(16):945-946
3978 Milk						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
3979 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.935-26.406 ppm b) 0.535-13.407 ppm c) 0.535-26.406 ppm d) Not given	a) 6.698 ppm b) 5.833 ppm c) 6.263 ppm d) 0.114 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MP 88.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3980 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.71 + or - 0.88 ppm b) 1.98 + or - 1.51 ppm c) 1.94 + or - 1.04 ppm d) 1.92 + or - 0.79 ppm e) 2.02 + or - 0.99 ppm f) 1.60 + or - 0.64 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; PESTICIDES; DDE; ORGANIC CHLORINE COMPOUNDS; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
3981 Omentum			1	Not applicable	20 ppm (fat basis)	66 yr old male with stomach cancer Japan POLYCHLORINATED BIPHENYLS; DDT; HEXACHLOROCYCLOHEXANE; BLOOD PLASMA; NEOPLASMS; JAPAN; GASTROINTESTINAL SYSTEM; PESTICIDES; ADIPOSE TISSUE; LIVER; KIDNEYS; OMENTUM	Inoue, Y. Abe, S. Takamatsu, M. Aoki, N. Miki, S. Fujiwara, K. 1975 Fukuoka Medical Journal 66(10:610-616
3982 Placenta		GC-EC	50	37-79 ppb	50.54 ppb Geometric	31 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
3983 Placenta		GC-EC	a) 25 b) 15 c) 10	a) 3-42 ppb b) 7-54 ppb c) 7-196 ppb	a) 11.9 + or - 11.6 ppb b) 31.2 + or - 15.0 ppb c) 83.6 + or - 69.3 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

Fluoride
16984-48-8
F
AtW 18.9984

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3984 Blood, plasma	Ingestion	ISE	8	a) 14-20 ng/ml b) 60-120 ng/ml	a) Not given b) Not given	a) Before varnish application to teeth b) After varnish application to teeth, dose 2.3-5.2 mg, peak at 2 hr 4-14 yr olds FLUORIDE; BLOOD PLASMA; CHILDREN; URINE; SWEDEN	Ekstrand, J. Koch, G. Petersson, L.G. 1980 Caries Research 14:185-189
3985 Blood, plasma	Ingestion	Colorimetry ISE	264	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 5.00 + or - 0.274 umol/l b) 4.74 + or - 0.216 umol/l c) 5.58 + or - 0.316 umol/l d) 5.46 + or - 0.295 umol/l e) 5.87 + or - 0.326 umol/l f) 6.58 + or - 0.342 umol/l	a) 10-20 yr olds b) 21-30 yr olds c) 31-40 yr olds d) 41-50 yr olds e) 51-60 yr olds f) > 60 yr old After consumption of fluoridated water (1 mg/l) > 1 yr Residents of MN MINNESOTA; ADULTS; AGE; CHILDREN; BLOOD PLASMA; COMPARATIVE EVALUATIONS; FLUORIDE; DRINKING WATER	Singer, L. Ophaug, R.H. 1979 Clinical Chemistry 25(4):523-525
3986 Blood, serum		GC	a) 4 b) 8 c) 49	a) 0.04-0.06 ppm b) 0.01-0.07 ppm c) 0.01-0.09 ppm	a) Not given b) Not given c) Not given	a) Controls b) Laboratory personnel, > 20 yr exposure c) Production workers Workers at ammonium perfluorooctanoate production plant. FLUORINE; INDUSTRIAL PLANTS; BLOOD SERUM; OCCUPATIONAL HAZARDS; RATS; FLUORIDE; FLUORINE COMPOUNDS; INDUSTRIAL ATMOSPHERES	Ubel, F.A. Sorenson, S.D. Roach, D.E. 1980 American Industrial Hygiene Association Journal 41:584-589
3987 Urine	Inhalation		3	a) 6.5-18.0 mg/l b) 0.2-3.2 mg/l	a) 12.02 mg/l b) 1.41 mg/l	a) Before local exhaust ventilation b) After ventilation Scottish factory workers exposed to HF. SCOTLAND; URINE; FLUORIDE; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS	White, D.A. 1980 Journal of the Society of Occupational Medicine 30:12-14
3988 Urine	Ingestion	ISE		a) Not given b) Not given c) Not given d) Not given	a) 100 ug/12 hr b) 200 ug/12 hr c) 550 ug/12 hr d) 1,100 ug/12 hr	a) Before varnish application to teeth, 2 younger children b) Before varnish application to teeth, 2 older children c) After varnish application, 2 younger children d) After varnish application, 2 older children Dose, 2.3-3.0 mg for younger children and 5.0-5.2 mg for older ones 4-14 yr olds FLUORIDE; BLOOD PLASMA; CHILDREN; URINE; SWEDEN	Ekstrand, J. Koch, G. Petersson, L.G. 1980 Caries Research 14:185-189

Fluorine
7782-41-4
F
AtW 18.9984, MP -219.61 C, BP -188.13 C, VP 100 mm Hg at -203 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3989 Blood, serum		GC	a) 4 b) 8 c) 49	a) 0.01-0.08 ppm b) 0.04-2.00 ppm c) 1.00-71.00 ppm	a) Not given b) Not given c) Not given	a) Controls b) Laboratory personnel, > 20 yr exposure c) Production workers Workers at ammonium perfluorooctanoate production plant. FLUORINE; INDUSTRIAL PLANTS; BLOOD SERUM; OCCUPATIONAL HAZARDS; RATS; FLUORIDE; FLUORINE COMPOUNDS; INDUSTRIAL ATMOSPHERES	Ubel, F.A. Sorenson, S.D. Roach, D.E. 1980 American Industrial Hygiene Association Journal 41:584-589

Formamide, N-methyl-
123-39-7
C2-H5-N-O
MW 59.07, BP 180-185 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3990 Urine	Inhalation Dermal	GC	22	a) Not given b) Not given c) Not given d) Not given	a) 19.9 + or - 8 mg/g creatinine b) 63.0 + or - 16 mg/g creatinine c) 10.3 + or - 5 mg/g creatinine d) 22.6 + or - 8 mg/g creatinine	a) Before work, 2nd day b) After work, 2nd day (exposure 92.6 + or - 21 mg/cu m x hr c) Before work 5th day d) After work 5th day (exposure 51.7 + or - 7 mg/cu m x hr 37-47 yr old workers in acrylic fiber factory. Abdominal, gastric pain. URINE; METABOLITES; BELGIUM; OCCUPATIONAL HAZARDS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; METHYL RADICALS; INHALATION	Lauwerys, R.R. Kivits, A. Ihoir, M. Rigolet, P. Houbeau, D. Buchet, J.P. Roels, H.A. 1980 International Archives of Occupational and Environmental Health 45:189-203
3991 Urine	Inhalation Dermal	GC	9	0.4-19.56 mg/day	Not given	20-29 yr old factory workers, Japan. URINE; METABOLITES; JAPAN; OCCUPATIONAL HAZARDS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; METHYL RADICALS	Yonemoto, J. Suzuki, S. 1980 International Archives of Occupational and Environmental Health 46:159-165

Formamide, N,N-dimethyl
68-12-2
C3-H7-N-O
MW 73.09, MP -61C, BP 153 C at 760 mm Hg, 76 C at 39 mm Hg, 25 C at 3.7 mm Hg, VP 3.7 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3992 Breath	Inhalation	GC	a) 5 b) 8 c) 7 d) 8 e) 8 f) 7 g) 6 h) 5	a) 0.9-2.9 mg/cu m b) 0.4-2.0 mg/cu m c) 0.4-2.4 mg/cu m d) 0.4-2.9 mg/cu m e) 0.7-5.1 mg/cu m f) 0.7-4.0 mg/cu m g) 0.7-7.1 mg/cu m h) 0.7-4.4 mg/cu m	a) 1.74 mg/cu m b) 1.1 mg/cu m c) 1.27 mg/cu m d) 1.5 mg/cu m e) 2.23 mg/cu m f) 2.07 mg/cu m g) 2.6 mg/cu m h) 2.3 mg/cu m	a) 0900 hr b) 1000 hr c) 1100 hr d) 1200 hr e) 1400 hr f) 1500 hr g) 1600 hr h) 1700 hr Sample times during 8 hr shift Workers in artificial leather factory, Italy ITALY; ADULTS; BREATH; SOLVENTS; FUMES; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS	Brugnone, F. Perbellini, L. Gaffuri, E. 1980 British Journal of Industrial Medicine 37:185-188

Furan
110-00-9
C4-H4-O
MW 68.07, MP -85.65 C, BP 31.36 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3993 Breath		GC/MS	8	Not detected-98.0 ug/hr	21.3 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
3994 Breath		GC-MS	54 (387 samples)	Not given	0.547 ng/l Geometric	Measured at 25 C and 760 mm Hg 3.9% occurrence Lower and upper one-Sigma limits 0.102 and 2.94 ng/l. Healthy 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. ILLINOIS; ADULTS; BREATH; ALCOHOLS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Gallium
7440-55-3
Ga
AtW 69.72, MP 29.78 C, BP 2403 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3995 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

Germanium
7440-56-4
Ge
AtW 72.59, MP 937.2 C, BP 2700 C, VP 10 mm Hg at 2080 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3996 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

Glycine, N-(2-methylbenzoyl)-
42013-20-7
C10-H11-N-O3
MW 193.21

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3997 Urine	Ingestion Inhalation	HPLC	a) 4 b) 4 c) 2	a) Not given b) Not given c) 0-0.14 mg/ml	a) 0.122 + or - 0.004 mmol/kg b) 1.2 + or - 0.4 mg/ml c) Not given	a) 20 hr excretion after 0.368 mmol/kg oral dose of o-xylene. Peak in 3-6 hr b) After 3 hr exposure to 138 ppm o-xylene vapor. Peak at 3 hr c) Painters. Estimated from graph. Diurnal variation. Volunteers, mean ages 53 yr (oral), 46 yr (vapor), 32 yr (spray painters). URINE; METABOLITES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; METHYL RADICALS; PAINTS; INHALATION	Ogata, M. Yamazaki, Y. Sugihara, R. Shimada, Y. Meguro, T. 1980 International Archives of Occupational and Environmental Health 46:127-139

Gold
7440-57-5
Au
AtW 196.9665, MP 1064.76 C, BP 2700 C, VP 1 mm Hg at 1869 C, 10 mm Hg at 2160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3998 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
3999 Hair		NA	a) 42 b) 40	a) <0.001-0.175 ug/g b) 0.001-0.268 ug/g	a) 0.014 ug/g b) 0.012 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

(NEXT PAGE)

Gold
7440-57-5
Au
AtW 196.9665, MP 1064.76 C, BP 2700 C, VP 1 mm Hg at 1869 C, 10 mm Hg at 2160 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4000 Kidney		NA	a) 8 b) 21	a) < 0.00001-0.0011 ug/g b) < 0.00001-0.0021 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4001 Liver		NA	a) 8 b) 20	a) < 0.00001-0.00046 ug/g b) < 0.00001-0.0010 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4002 Lung		NA	a) 8 b) 9 c) 11	a) 0.000080-0.0079 ug/g b) < 0.00002-0.018 ug/g c) 0.00029-0.0064 ug/g Wet wt	a) 0.00062 ug/g b) 0.0017 ug/g c) 0.0023 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Gold
7440-57-5
Au
AtW 196.9665, MP 1064.76 C, BP 2700 C, VP 1 mm Hg at 1869 C, 10 mm Hg at 2160 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4003 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 2.64 + or - 3.81 ppm b) 0.42 + or - 0.32 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.M. Moore, C.E. 1979 Science of the Total Environment 13:131-140

Heptane
142-82-5
C7-H16
MW 100.20, BP 98.52 C, VP 40 mm Hg at 22.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4004 Breath		GC-MS	54 (387 samples)	Not given	1.8 ng/l Geometric	Measured at 25 C and 760 mm Hg 47.0% occurrence Lower and upper one-Sigma limits 0.69 and 4.7 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Heptane, 2,4-dimethyl-
2213-23-2
C9-H20
MW 128.26, BP 133.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4005 Breath		GC-MS	54 (387 samples)	Not given	0.267 ng/l Geometric	Measured at 25 C and 760 mm Hg 46.5% occurrence Lower and upper one-Sigma limits 0.045 and 1.58 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Heptane, 2,5-dimethyl-
2216-30-0
C9-H20
MW 128.25, BP 136 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4006 Breath		GC-MS	54 (387 samples)	Not given	0.083 ng/l Geometric	Measured at 25 C and 760 mm Hg 29.2% occurrence Lower and upper one-Sigma limits 0.019 and 0.353 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Heptyl alcohol (8 CI)
1-Heptanol (9 CI)
111-70-6
C7-H16-O
MW 116.2, MP -34.6 C, BP 175.8 C, VP 1 mm Hg at 42.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4007 Breath		GC-MS	54 (387 samples)	Not given	3.9 ng/l Geometric	Measured at 25 C and 760 mm Hg 39.5% occurrence Lower and upper one-Sigma limits 1.86 and 8.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Hexane
110-54-3
C6-H14
MW 86.17, BP 68.7 C, VP 100 mm Hg at 15.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4008 Breath		GC/MS	8	Not detected-5.0 ug/hr	1.0 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Hexane
110-54-3
C6-H14
MW 86.17, BP 68.7 C, VP 100 mm Hg at 15.8 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4009 Breath		GC-MS	54 (387 samples)	Not given	4.7 ng/l Geometric	Measured at 25 C and 760 mm Hg 6.9% occurrence Lower and upper one-Sigma limits 1.63 and 13.5 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234
4010 Urine	Inhalation Dermal	GC/MS	10	a) 0.1-1.4 mg/l b) 2.9-30.0 mg/l c) 0.7-5.5 mg/l d) 1.7-17.5 mg/l	a) 0.5 + or - 0.4 mg/l b) 10.1 + or - 8.3 mg/l c) 2.4 + or - 1.7 mg/l d) 5.2 + or - 4.8 mg/l	a) As 2-hexanol b) As 2,5-hexanedione c) As gamma-valerolactone d) As 2,5-dimethylfuran Metabolites Data also on solvents in factory air Workers in shoe factory in Italy URINE; HYDROCARBONS; METABOLITES; ITALY; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; AIR POLLUTION; OCCUPATIONAL DISEASES	Perbellini, L. Brugnone, F. Pavan, I. 1980 Toxicology and Applied Pharmacology 53:220-229

Hexane, 1-chloro-
544-10-5
C6-H13-Cl
MW 120.62, MP -94 C, BP 134 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4011 Breath		GC-MS	54 (387 samples)	Not given	0.121 ng/l Geometric	Measured at 25 C and 760 mm Hg 37.5% occurrence Lower and upper one-Sigma limits 0.033 and 0.439 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Hexane, 2,3-dimethyl-
584-94-1
C8-H18
MW 114.23, BP 116 C, VP 10 mm Hg at 9.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4012 Breath		GC-MS	54 (387 samples)	Not given	1.6 ng/l Geometric	Measured at 25 C and 760 mm Hg 31.8% occurrence Lower and upper one-Sigma limits 0.57 and 4.5 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Hexane, 2,3,5-trimethyl-
1069-53-0
C9-H20
MW 128.25, MP -127.8 C, BP 131.34 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4013 Breath		GC-MS	54 (387 samples)	Not given	4.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 58.1% occurrence Lower and upper one-Sigma limits 1.7 and 9.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Hexane, 3,4-dimethyl-
583-48-2
C8-H18
MW 114.26

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4014 Breath		GC-MS	54 (387 samples)	Not given	3.7 ng/l Geometric	Measured at 25 C and 760 mm Hg 43.2% occurrence Lower and upper one-Sigma limits 1.7 and 7.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Hexene
25264-93-1
C6-H12
MW 84.16, MP -139.9 C, BP 64.5 C, VP 310 mm Hg at 38 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4015 Breath		GC/MS	8	Not detected-1.3 ug/hr	0.2 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Hippuric acid (8 CI)
Glycine, N-benzoyl- (9 CI)
495-69-2
C9-H9-N-O3
MW 179.17, MP 187-188 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4016 Urine	Inhalation	HPLC	2	0.02-0.46 mg/ml	Not given	Occupationally exposed to o-xylene. Diurnal variation. Estimated from graph Painters, mean age 32 yr URINE; METABOLITES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; METHYL RADICALS; PAINTS; INHALATION	Ogata, M. Yamazaki, Y. Sugihara, R. Shimada, Y. Meguro, T. 1980 International Archives of Occupational and Environmental Health 46:127-139

Hippuric acid, m-methyl- (8 CI)
Glycine, N-(3-methylbenzoyl)- (9 CI)
27115-49-7
C10-H11-N-O3
MW 193.21

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4017 Urine	Ingestion Inhalation	HPLC	a) 4 b) 2	a) Not given b) 0.01-0.33 mg/ml	a) 0.200 + or - 0.007 mmol/kg b) Not given	a) 28 hr excretions after 0.368 mmol/kg oral dose of m-xylene. Peak in 1-3 hr b) Painters. Estimated from graph. Diurnal variation. Volunteers, mean age 53 yr (oral) and 32 yr (spray painters). URINE; METABOLITES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; METHYL RADICALS; PAINTS; INHALATION	Ogata, M. Yamazaki, Y. Sugihara, R. Shimada, Y. Meguro, T. 1980 International Archives of Occupational and Environmental Health 46:127-139

Indene (8 CI)
1H-Indene (9 CI)
95-13-6
C9-H8
MW 116.2, MP -1.8 C, BP 182 C, VP 10 mm Hg at 58.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4018 Breath		GC/MS	8	Not detected-83.0 ug/hr	13.3 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4019 Breath		GC-MS	54 (387 samples)	Not given	0.138 ng/l Geometric	Measured at 25 C and 760 mm Hg 15.3% occurrence Lower and upper one-Sigma limits 0.034 and 0.571 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toricology 3:225-234

Indium
7440-74-6
In
AtW 114.76, MP 156.61 C, BP 2080 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4020 Aorta		NA	2	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Indium
7440-74-6
In
AtW 114.76, MP 156.61 C, BP 2080 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4021 Brain		NA		a) Not given b) None detected c) Not given d) Not given	a) 0.03 + or - 0.04 ug/g (wet wt) b) None detected c) 0.04 + or - 0.09 ug/g (wet wt) d) 0.03 + or - 0.03 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 7 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4022 Heart		NA	a) 4 b) 2	a) Not given b) None detected	a) 0.002 ug/g wet wt (Median) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4023 Kidney		NA	a) 7 b) 2	a) Not given b) None detected	a) 0.03 + or - 0.06 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Indium
7440-74-6
In
Atw 114.76, MP 156.61 C, BP 2080 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4024 Liver		NA	a) 11 b) 3	a) 0.13 ug/g (wet wt) b) 0.005 ug/g (wet wt)	a) 0.03 + or - 0.04 ug/g (wet wt) b) 0.004 ug/g wet wt (median)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4025 Lung		NA	a) 2 b) 2	a) Not given b) None detected	a) 0.07 + or - 0.10 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4026 Muscle		NA	a) 4 b) 8	a) Not given b) Not given	a) Not detected b) 0.02 + or - .04 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Indium
7440-74-6
In
AtW 114.76, MP 156.61 C, BP 2080 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4027 Pancreas		NA	a) 5 b) 2	a) Not given b) Not given	a) 0.01 + or - 0.01 ug/g (wet wt) b) 0.002 ug/g wet wt (median)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4028 Spleen		NA	a) 5 b) 3	a) Not given b) Not given	a) 0.01 + or - 0.01 ug/g (wet wt) b) 0.03 + or - 0.03 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Iodine
7553-56-2
I
AtW 126.9045, MP 113.60 C, BP 185.24 C, VP (solid) 0.03 mm Hg at 0 C, 0.305 mm Hg at 25 C, 2.154 mm Hg at 50 C, 26.78 mm Hg at 90 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4029 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Iodine
7553-56-2
I
AtW 126.9045, MP 113.60 C, BP 185.24 C, VP (solid) 0.03 mm Hg at 0 C, 0.305 mm Hg at 25 C, 2.154 mm Hg at 50 C, 26.78 mm Hg at 90 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4030 Hair		NA	a) 19 b) 15 c) 17 d) 4 e) 12 f) 5	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 19.0 + or - 5.1 ug/g b) 110.0 + or - 44 ug/g c) 110.0 + or - 49.2 ug/g d) 28.5 + or - 26.1 ug/g e) 112.5 + or - 44.1 ug/g f) 575.0 + or - 113.2 ug/g	a) Controls, at birth b) Full-term low birthweight, at birth c) Pre-term, at birth d) Controls, 1 mo e) Full-term low birthweight, 1 mo f) Pre-term, 1 mo Medians + or - SEM Neonates in Halifax. Pre-term group mean birthweight 1880 g, 26-36 wk gestation, full-term low birthweight group mean birth weight 2371 g, 38-42 wk gestation, and full-term controls mean birthweight 3590 g, 38-42 wk gestation. HAIR; METALS; ZINC; COPPER; MANGANESE; VANADIUM; IODINE; INFANTS; SEX	Gibson, R.S. Dewolfe, M.S. 1980 Nutrition Reports International 21(3):341-349
4031 Hair		NA	a) 42 b) 40	a) 0.059-7.055 ug/g b) 0.015-15.167 ug/g	a) 0.422 ug/g b) 0.143 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4032 Aorta		NA	2	67 ug/g (wet wt)	34 + or - 47 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4033 Blood	Ingestion	Colorimetry	12	350-2030 ug/l	1130 + or - 590 ug/l	Children with various renal diseases, before dialysis Children, 5.5-18 yr ADOLESCENTS; CHILDREN; KIDNEY DISEASES; BLOOD; URINE; HEMODIALYSIS; MEASUREMENT METHODS; IRON; METALS	Ellis, D. 1979 Clinical Chemistry 25(5):741-744

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4034 Blood, serum	Ingestion	AAS	a) 26 b) 25 c) 25 d) 20	a) Not given b) Not given c) Not given d) Not given	a) 88 + or - 37 ug/100 ml b) 75 + or - 24 ug/100 ml c) 94 + or - 43 ug/100 ml d) 60 + or - 29 ug/100 ml	a) Breast milk only b) Fe-fortified formula (14 mg/qt) to 4 mo c) Fe-fortified formula (14 mg/qt) to 12 mo d) Non-fortified formula (1.4 mg/qt) to 4 mo (differed significantly) % transferrin saturation of b) and d) significantly lower. Data available for ages 3 and 9 mo. Full-term 5.5-6.0 kg infants in Illinois Fe deficiency in 2 cases. IRON; DIETS; NEWBORN; ILLINOIS; BLOOD SERUM; COMPARATIVE EVALUATIONS; LACTATION	Picciano, M.F. Deering, R.H. 1980 American Journal of Clinical Nutrition 33:746-753
4035 Blood, serum			10	a) 4-18 umoles/l b) 3-15 umoles/l	a) 11.5 umoles/l b) 9.5 umoles/l	a) Subjects with normal serum ferritin b) Subjects with subnormal serum ferritin 35-70 yr olds, United Kingdom. 9 patients with chronic blood loss, hemiparesis, or venesection for secondary polycythemia. 1 normal blood donor. UNITED KINGDOM; BLOOD SERUM; BODY; BIOACCUMULATION; METABOLISM; IN VIVO ANALYSIS; IRON; LEAD	Watson, W.S. Hume, R. Moore, M.R. 1980 Lancet 2(8188):236-237
4036 Blood, serum			4	212-237 ug/dl	221 ug/dl	Arthritis patients with possible iron storage disease. 38-54 yr old Canadians Joint pain, elevated transferrin saturation, anemia, decreased libido, impotence. Deposition of hemosiderin in hepatocytes in all, cirrhosis in one. BLOOD SERUM; IRON; CANADA; ADULTS; METALS; METAL POISONING	M'Seffar, A. Fornasier, V.L. Fox, I.H. 1977 Journal of the American Medical Association 238(17):1825-1828
4037 Body	Ingestion	Radiometry	a) 4 b) 9 c) 25 d) 12	a) 0.2-2.8% of dose b) 0.6-1.5% of dose c) 0.4-12.1% of dose d) 1.2-8.5% of dose	a) 0.7% of dose b) 1.0% of dose c) 2.7% of dose d) 4.0% of dose Geometric	a) Ferric orthophosphate b) Sodium iron pyrophosphate c) Ferrous sulfate d) Reduced iron, 5-10 u particle size Fe supplement forms in a)-d) Whole-body uptake 10 days after last of five 10 g feedings of cereal containing 5 mg Fe-labelled dose. Data for other iron supplements. 4-7 months olds, low socioeconomic class, similar iron nutrition. IRON; METALS; DIETS; COMPARATIVE EVALUATIONS; INFANTS; BODY; DRUGS; TRACE ELEMENTS	Rios, E. Hunter, R.E. Cook, J.D. Smith, N.J. Finch, C.A. 1975 Pediatrics 55(5):686-693

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4038 Brain		NA		a) 7.8-85 ug/g (wet wt) b) 13-96 ug/g (wet wt) c) 28-75 ug/g (wet wt) d) 16-60 ug/g (wet wt)	a) 48 + or - 32 ug/g (wet wt) b) 48 + or - 43 ug/g (wet wt) c) 47 + or - 21 ug/g (wet wt) d) 43 + or - 21 ug/g (wet wt)	a) Males, cerebrum, 6 subjects b) Females, cerebrum, 3 subjects c) Males, cerebellum, 4 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4039 Brain		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 13.9 + or - 1.1 nmol/g b) 12.8 + or - 0.7 nmol/g c) 10.9 + or - 1.2 nmol/g d) 19.1 + or - 2.1 nmol/g e) 4.4 + or - 0.4 nmol/g f) 2.8 + or - 0.3 nmol/g Dry wt SE	a) Globus pallidus, 11 samples, coefficient of variation (CV) 26.6% b) Caudate nucleus, 11 samples, CV 18.9% c) Putamen, 12 samples, CV 38.8% d) Substantia nigra, 6 samples, CV 27.2% e) Cerebral cortex, 16 samples, CV 36.9% f) Hippocampus, 8 samples, CV 26.4% Autopsy samples CEREBRAL CORTEX; MEASUREMENT METHODS; CALCIUM; COPPER; IRON; MANGANESE; BRAIN; AUTOPSIES	Goldberg, W.J. Allen, M. 1981 Clinical Chemistry 27(4):562-564
4040 Breath	Inhalation	PIXE	1	Not given	166.0 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4041 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 23 ppm b) 22 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4042 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4043 Heart		NA	a) 8 b) 3	a) 5.8-68 ug/g (wet wt) b) 19-73 ug/g (wet wt)	a) 38 + or - 20 ug/g (wet wt) b) 44 + or - 27 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4044 Kidney		NA	a) 16 b) 3	a) 6.6-160 ug/g (wet wt) b) 37-130 ug/g (wet wt)	a) 65 + or - 43 ug/g (wet wt) b) 71 + or - 51 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4045 Kidney		NA	a) 8 b) 9 c) 12	a) 51-148 ug/g b) 40-513 ug/g c) 27- 507 ug/g Wet wt	a) 79 ug/g b) 98 ug/g c) 58 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4046 Liver		NA	a) 3 b) 5	a) 29-150 ug/g (wet wt) b) 44-240 ug/g (wet wt)	a) 62 + or - 68 ug/g (wet wt) b) 150 + or - 83 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4047 Liver		NA	a) 8 b) 9 c) 11	a) 81-391 ug/g b) 111-796 ug/g c) 91-344 ug/g Wet wt	a) 246 ug/g b) 198 ug/g c) 139 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4048 Lung		NA	3	112-280 ug/g (wet wt)	200 + or - 88 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.8 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4049 Lung		NA	a) 8 b) 9 c) 11	a) 122-1448 ug/g b) 80-468 ug/g c) 32-423 ug/g Wet wt	a) 303 ug/g b) 139 ug/g c) 134 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4050 Lung		Mossbauer	8	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given	a) 0.17% b) 2.45% c) 1.08% d) 0.16% e) 0.82% f) 13.5% g) 1.99% h) 0.37% i) 1.34% Percent dry wt	a) Normal b) Hemosiderosis c) Acute bronchitis d) Coalworker e) Coalworker f) Hematite worker g) Foundry worker h) Coalworker, PMF lesion i) Same coalworker, excluding PMF lesion Measurements corrected for dust content. UNITED KINGDOM; ADULTS; LUNGS; MEASUREMENT METHODS; IRON; DUST	Guest, L. 1976 Annals of Occupational Hygiene 19:49-62

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4051 Muscle		NA	a) 4 b) 3	a) 11-54 ug/g (wet wt) b) 16-47 ug/g (wet wt)	a) 26 + or - 20 ug/g (wet wt) b) 27 + or - 17 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4052 Pancreas		NA	a) 5 b) 3	a) 12-48 ug/g (wet wt) b) 15-67 ug/g (wet wt)	a) 32 + or - 17 ug/g (wet wt) b) 47 + or - 28 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4053 Spinal cord		X-ray spectros	a) 7 b) 12	a) 28.4-181.5 ug/g b) 24.0-122.5 ug/g Dry wt	a) 101.1 + or - 58.0 ug/g b) 53.7 + or - 29.2 ug/g Dry wt	a) Motor neuron disease patients b) Controls Ventral horn tissue, autopsy Patients died of myotrophic lateral sclerosis and progressive muscular atrophy, mean age 58.6 + or - 13.1 yr. Controls died of various diseases at 60.9 + or - 11.1 yr. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24

(NEXT PAGE)

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4054 Spleen		NA	a) 5 b) 3	a) 57-410 ug/g (wet wt) b) 150-590 ug/g (wet wt)	a) 260 + or - 140 ug/g (wet wt) b) 340 + or - 330 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Isobutyl alcohol (8 CI)
1-Propanol, 2-methyl- (9 CI)
78-83-1
C4-H10-O
FW 74.12, BP 107.90 C, VP 10 mm Hg at 21.7 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4055 Breath		GC/MS	8	Not detected-31.0 ug/hr	10.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4056 Breath		GC-MS	54 (387 samples)	Not given	0.328 ng/l Geometric	Measured at 25 C and 760 mm Hg 13.9% occurrence Lower and upper one-Sigma limits 0.068 and 1.59 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Isooctyl alcohol (8 CI)
Isooctanol (9 CI)
26952-21-6
C8-H18-O
MW 130.22

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4057 Breath		GC-MS	54 (387 samples)	Not given	1.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 15.8% occurrence Lower and upper one-Sigma limits 0.33 and 5.1 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Isopentyl alcohol (8 CI)
1-Butanol, 3-methyl- (9 CI)
123-51-3
C5-H12-O
MW 88.15, MP -117.2 C, BP 132 C, VP 1 mm Hg at 10.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4058 Breath		GC/MS	8	Not detected-2.6 ug/hr	0.3 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4059 Breath		GC-MS	54 (387 samples)	Not given	0.182 ng/l Geometric	Measured at 25 C and 760 mm Hg 29.7% occurrence Lower and upper one-Sigma limits 0.942 and 0.781 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Isoprene (8 CI)
1,3-Butadiene, 2-methyl- (9 CI)
78-79-5
C5-H8
MW 68.11, MP -146.7 C, BP 34 C, VP 400 mm Hg at 15.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4060 Breath		GC/MS	13	0.09-0.45 ppm	0.23 ppm	Corrected for level in inhaled air Healthy adults SWEDEN; ADULTS; MEASUREMENT METHODS; METHANOL	Jansson, B.O. Larsson, B.T. 1969 Journal of Laboratory and Clinical Methods 74(6):961-966
4061 Breath		GC/MS	8	Not detected-390.0 ug/hr	129.8 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4062 Breath		GC-MS	54 (387 samples)	Not given	28.9 ng/l Geometric	Measured at 25 C and 760 mm Hg 70% occurrence Lower and upper one-Sigma limits 14.4 and 58.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Isopropyl alcohol (8 CI)
2-Propanol (9 CI)
67-63-0
C3-H8-O
MW 60.09, MP -88.5 to -89.5 C, BP 80.3 C, VP 10 mm Hg at 2.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4063 Breath		GC/MS	8	Not detected-160.0 ug/hr	38.6 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Isopropyl alcohol (8 CI)
2-Propanol (9 CI)
67-63-0
C3-H8-O
MW 60.09, MP -88.5 to -89.5 C, BP 80.3 C, VP 10 mm Hg at 2.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4064 Breath		GC-MS	54 (387 samples)	Not given	0.655 ng/l Geometric	Measured at 25 C and 760 mm Hg 22.2% occurrence Lower and upper one-Sigma limits 0.155 and 2.76 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Lactic acid, butyl ester (8 CI)
Propanoic acid, 2-hydroxy-, butyl ester (9 CI)
138-22-7
C7-H14-O3
MW 146.18, MP -43 C, BP 188 C, VP 0.4 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4065 Breath		GC/MS	8	Not detected-3.4 ug/hr	0.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Lanthanum
7439-91-0
La
AtW 138.906, MP 920 C, BP 3454 C, VP 3230 mm Hg at 400 C, 3420 mm Hg at 760 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4066 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4067 Kidney		NA	a) 8 b) 20	a) < 0.00020-0.00040 ug/g b) < 0.00020-0.068 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4068 Liver		NA	a) 8 b) 9 c) 11	a) 0.0030-0.014 ug/g b) < 0.00020-0.051 ug/g c) < 0.00020-0.024 ug/g Wet wt	a) 0.0050 ug/g b) 0.0058 ug/g c) 0.0042 ug/g Wet wt Medians	a) Control b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Lanthanum
7439-91-0
La
AtW 138.906, MP 920 C, BP 3454 C, VP 3230 mm Hg at 400 C, 3420 mm Hg at 760 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4069 Lung		NA	a) 8 b) 9 c) 10	a) 0.00030-0.023 ug/g b) 0.00080-0.17 ug/g c) 0.0010-0.025 ug/g Wet wt	a) 0.0040 ug/g b) 0.011 ug/g c) 0.011 ug/g Wet wt Medians	a) Control b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4070 Blood	Inhalation	AAS	a) 26 b) 64 c) 19 d) 71	a) Not given b) Not given c) Not given d) Not given	a) 28.4 + or - 7.6 ug/100 ml b) 27.4 + or - 8.1 ug/100 ml c) 30.0 + or - 9.4 ug/100 ml d) 27.1 + or - 7.4 ug/100 ml	a) CNS symptoms b) No CNS symptoms c) GI symptoms d) GI symptoms Significant correlation $p < 0.00003$ in subjects with CNS symptoms and $p < 0.02$ in subjects with GI symptoms. New York City telephone cable splicers, employed 5 or more yr. Over 50% were <30 yr old. Neurological and gastrointestinal symptoms. Elevated zinc protoporphyrin levels. LEAD POISONING; INDUSTRIAL POLLUTION; INDUSTRIAL MEDICINE; LEAD; NEW YORK; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; INDUSTRIAL DISEASES; BLOOD	Fishbein, A. Thornton, J. Blumberg, W.E. Bernstein, J. Valciukas, A. Moses, M. Davidow, B. Balkrishena, K. Sirota, M. Selikoff, I.J. 1980 American Journal of Public Health 70(7):697-700

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4071 Blood	Inhalation	AAS	160	a) 16-280 ug/dl b) Not given c) Not given d) Not given	a) Not given b) 41.8 ug/dl c) 82.6 ug/dl d) 87.2 ug/dl	a) Workers in smelters and chemicals plant b) Office and laboratory workers in TN smelter c) Production worker in TN smelter d) Clean up and maintenance workers in TN smelter Positive correlation with duration of employment. Workers in secondary lead smelter, Memphis, TN, in scrap smelter, Salt Lake City, UT, and at 2 lead chemicals factories, Joplin, MO. Clinical evidence of toxic exposure in 70 workers: fatigue, colic, gastrointestinal symptoms, anorexia, myalgia, joint pain, objective tremor, extensor muscle weakness, possible encephalopathy, anemia. No toxicity detected at < 40 ug/dl. Elevated blood urea nitrogen, reduced creatinine clearance, decreased renal concentrating ability. LEAD POISONING; INDUSTRIAL POLLUTION; SMELTERS; INDUSTRIAL MEDICINE; LEAD; MISSOURI; TENNESSEE; UTAH; ADULTS; BLOOD; BIOACCUMULATION	Baker, E.L., Jr. Landrigan, P.J. Barbour, A.G. Cox, D.H. Folland, D.S. Ligo, R.M. Throckmorton, J. 1979 British Journal of Industrial Medicine 36:314-322
4072 Blood		AAS	34	a) 18-36 ug/dl b) 18-32 ug/dl c) 48-90 ug/dl d) 40-90 ug/dl	a) 28 ug/dl b) 20 ug/dl c) 68 ug/dl d) 63 ug/dl Medians	a) Controls, boys b) Controls, girls c) Boys d) Girls Patients, ages 1-3 yr, 85% black, 10% Hispanic, 5% white Increase in systolic pressure with concentrations of > 40 ug/dl. CHILDREN; HYPERTENSION; BLOOD PRESSURE; LEAD; METALS	Jhaveri, R.C. Lavorgna, L. Dube, S.K. Glass, L. Khan, F. Evans, H.E. 1979 Pediatrics 63(4):674-676
4073 Blood	Inhalation	AAS	a) 32 b) 14	a) Not given b) Not given	a) 53 + or - 16 ug/100 ml b) 11 + or - 4 ug/100 ml	a) Workers, exposed 2-37 months (mean 12.9 months), average workday 11.5 hr, average work days 28.5/month b) Controls Male Pb, Zn mine workers, Marmorilik, ages 23-46 hr, mean ht 1.76 m, mean wt 76 kg. Controls, 4 office workers at mine, 10 University students, ages 23-42 yr, mean ht 1.76 m and mean wt 78 kg. No observed decrease of motor nerve conduction velocity of the ulnar nerve. DENMARK; ADULTS; LEAD POISONING; NERVOUS SYSTEM DISEASES; BLOOD; BIOACCUMULATION; INDUSTRIAL POLLUTION; LEAD	Paulev, P.-E. Gry, C. Dossing, M. 1979 International Archives of Occupational and Environmental Health 43:37-43

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4074 Blood	Inhalation	AAS	271	40-340 ug/l	Not given	Estimated from graph. Direct determination and extraction procedures agree. Welders, garage personnel and putty workers in Swedish airplane factory. INDUSTRIAL POLLUTION; COMPARATIVE EVALUATIONS; CADMIUM; SWEDEN; ADULTS; BLOOD; URINE; BIOACCUMULATION	Lagesson, V. Andrasko, L. 1979 Clinical Chemistry 25(11):1948-1953
4075 Blood	Ingestion	AAS	255	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 22.9 ug/100 ml b) 32.7 ug/100 ml c) 37.2 ug/100 ml d) 19.1 ug/100 ml e) 20.8 ug/100 ml f) 17.3 ug/100 ml	a) Ages < 20 yr, exposed b) Ages 50-69 yr, exposed c) Ages 70 and over, exposed d) Ages 20-29 yr, controls e) Ages 50-69 yr, controls f) Ages 70 and over, controls Urban areas in Belgium. No occupational exposure. Exposed group from area using soft water, controls from area with hard water. Pb pipes in both areas. LEAD; BLOOD; AGE; URBAN AREAS; BELGIUM; COMPARATIVE EVALUATIONS; DRINKING WATER; ATMOSPHERE; METALS	Sartor, F. Rondia, D. 1980 Archives of Environmental Health 35(2):110-116
4076 Blood		AAS	99	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 14.41 ug/100 ml b) 18.95 ug/100 ml c) 23.73 ug/100 ml d) 10.93 ug/100 ml e) 14.93 ug/100 ml f) 19.21 ug/100 ml	a) Before opening of interchange, males b) 5-9 mo after opening of interchange, males c) 17 mo after opening of interchange, males d) Before opening of interchange, females e) 5-9 mo after opening of interchange, females f) 17 mo after opening of interchange, females Residents within 800 m of highway interchange in the U.K. UNITED KINGDOM; BLOOD; LEAD; METALS; AUTOMOTIVE	Waldron, H.A. 1975 Nature 253:345-346
4077 Blood		AAS	15	a) 3.8-13.1 umol/l b) 6.2-13.8 umol/l	a) Not given b) Not given	a) 3-15 yr exposure b) 31-45 yr exposure Estimated from graph Former workers (27-75 yr old) at storage battery plant. SWEDEN; BLOOD; BONES; IN VIVO ANALYSIS; LEAD; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ahlgren, L. Haeger-Aronsen, B. Mattsson, S. Schutz, A. 1980 British Journal of Industrial Medicine 37:109-113

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4078 Blood				a) Not given b) Not given c) Not given d) Not given	a) 32.5 ug/100 ml b) 21 ug/100 ml c) 28 ug/100 ml d) 18 ug/100 ml	a) Blacks, June, 1970 and 1971 b) Blacks, Dec-March, 1976 c) Hispanics, June 1970 d) Hispanics, March 1976 Geometric means, values estimated from graph. Seasonal pattern, decreasing trend from 1970-1976. Levels correlated with gasoline Pb 25-36 mo olds, New York City NEW YORK; CHILDREN; RACIAL STUDIES; BLOOD; COMPARATIVE EVALUATIONS; LEAD; METALS; AUTOMOTIVE; POPULATION EXPOSURE	Billick, I.H. Curran, A.S. Shier, D.R. 1980 Environmental Health Perspectives 34:213-217
4079 Blood			110	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 55.8 + or - 9.7 ug/dl b) 57.7 + or - 13.7 ug/dl c) 60.9 + or - 12.1 ug/dl d) 64.4 + or - 11.8 ug/dl e) 57.8 + or - 10.8 ug/dl	a) 58 nonsmokers b) 23 smokers, < 1 pack/day c) 29 smokers, > or = 1 pack/day d) Smokers, high exposure (860 ug/cu m) e) Nonsmokers, high exposure (860 ug/cu m) Smelter workers, average age 40.8 + or - 8.2 yr, Los Angeles. CALIFORNIA; BLOOD; LEAD; METALS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMELTERS; SMOKING	Brown, C.P. Spivey, G.H. Valentine, J.L. Browdy, B.L. 1980 Journal of Toxicology and Environmental Health 6:877-883
4080 Blood		AAS	a) 56 b) 70 c) 50 d) 69	a) 15.1-20.8 ug/100 ml b) 11.8-14.9 ug/100 ml c) 10.4-11.1 ug/100 ml d) 8.0-9.6 ug/100 ml	a) 17.2 ug/100 ml b) 12.8 ug/100 ml c) 10.8 ug/100 ml d) 8.8 ug/100 ml Geometric means	a) Males, Los Angeles b) Females, Los Angeles c) Males, Lancaster d) Females, Lancaster Areas differed p<<.001 METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4081 Blood	Ingestion Inhalation		240	a) Not given b) Not given c) Not given d) Not given	a) 16 ug/100 ml b) 55 ug/100 ml c) 78 ug/100 ml d) 59 ug/100 ml	a) Start of employment, no previous occupational exposure b) 10-12 wk after employment c) Employees removed from workplace during study, at time of removal d) Employees removed from workplace during study, 16-18 wk after removal Considerable difference in rate of change and plateau state for Pb and Zn protoporphyrin Lead smelter workers ADULTS; BLOOD; ERYTHROCYTES; INDUSTRIAL HYGIENE; LEAD; ZINC ORGANIC COMPOUNDS; INDUSTRIAL ATMOSPHERES; INHALATION; SMELTERS; OCCUPATIONAL HAZARDS; COMPARATIVE EVALUATIONS	Hesley, K.L. Wimbish, G.H. 1981 Journal of the American Industrial Hygiene Association 42:42-46

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4082 Blood		Dithizone	a) 94 b) 13	a) Not given b) Not given	a) 60 + or - 15 ug/100 ml b) 24 + or - 14 ug/100 ml	a) Battery factory workers, exposure 6 mo-33 yr b) Controls Lower motor nerve conduction velocities in exposed workers LEAD; METALS; BLOOD; UNITED KINGDOM; NERVOUS SYSTEM DISEASES; OCCUPATIONAL HAZARDS; INDUSTRIAL PLANTS	Ashby, J.A.S. 1980 British Journal of Industrial Medicine 37:133-140
4083 Blood		AAS	11	a) 3.7-9.4 umole/l	a) 5.1 umole/l	Pb-poisoned cases 18-56 yr olds, industrial exposures. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.I. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4084 Blood	Inhalation	AAS	a) 18 b) 12	a) Not given b) Not given	a) 42.0 + or - 9.6 ug/100 ml b) 27.8 + or - 4.8 ug/100 ml	a) Occupationally exposed b) Controls 27-50 yr olds, in storage battery manufacturing plant. 28-48 yr old controls. Increased rates of abnormal metaphases with chromatid aberrations in vitro. LEAD; METALS; CHROMOSOMAL ABERRATIONS; ITALY; BLOOD; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; IN VITRO ANALYSIS	Forni, A. Sciame, A. Bertazzi, P.A. Alessio, L. 1980 Archives of Environmental Health 35(3):139-146
4085 Blood		AAS	100	1.0-13.0 ug/100 ml	5.2 + or - 2.5 ug/100 ml	Values lower than generally reported. Improved, contamination-free sampling technique and chemical analysis possible factors. 7-10 yr old children, remote area of Papua New Guinea BLOOD; LEAD; METALS; CHILDREN; NEW GUINEA; RURAL AREAS	Poole, C. Smythe, L.E. Alpers, M. 1980 Science of the Total Environment 15:17-24
4086 Blood	Ingestion		1	a) Not applicable b) Not applicable	a) 112 ug/dl b) 47 ug/dl	a) On admission b) 1 mo after chelation therapy 23 yr old Japanese painter. Facial pallor, mild jaundice, abdominal colic Anemia, high levels of urinary delta-aminolevulinic acid and coproporphyrin. BLOOD; LEAD; LEAD POISONING; METALS; JAPAN; PAINTS; OCCUPATIONAL HAZARDS	Chiba, M. Toyoda, T. Inaba, Y. Ogihara, K. Kikuchi, M. 1980 New England Journal of Medicine 303(8):459

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4087 Blood	Ingestion	Isotope dilution	5	0.15-0.33 ug/g	Not given	Before and after 142-215 ug/day (excluding Pb-isotopes as tracers). Absorption was 10.3% for food Pb, 8.2% for tracers ingested with food, and 35% (P<0.01) for tracers ingested without food. Healthy subjects, no known occupational exposure, California. CALIFORNIA; ADULTS; BLOOD; METABOLISM; MEASUREMENT METHODS; LEAD	Rabinowitz, M.B. Kopple, J.D. Wetherill, G.W. 1980 The American Journal of Clinical Nutrition 33:1784-1788
4088 Blood	Ingestion Inhalation		12	3.38-3.86 umol/l	Not given	Lead workers Employees of factory producing inorganic Pb compounds. New South Wales. In other cases for which no levels reported, fatigue, anorexia, constipation, wt loss, muscular weakness. AUSTRALIA; ADULTS; LEAD POISONING; BLOOD; INDUSTRIAL HYGIENE; LEAD; DUST; INDUSTRIAL ATMOSPHERES; INHALATION	Crawford, M.A. Jones, R. Rainsford, F. Shandar, A. 1980 Medical Journal of Australia 2(6):318-319
4089 Blood	Ingestion Inhalation	AAS	124	100-370 ug/l	Not given	Hematocrits, 36-52% and hemoglobins 110-182 g/l. Statistically significant negative association between Pb and Hct/Hb. Urban residents and factory workers where Pb is used. Greece. GREECE; ADULTS; BLOOD; LEAD; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; URBAN AREAS	Coutselinis, A. Trichopoulos, D. Zavitsianos, X. 1979 Clinical Chemistry 25(7):1339
4090 Blood	Ingestion Inhalation		7	a) 38->120 ug/100 ml b) 90-120 ug/100 ml c) 66-97 ug/100 ml d) 61-102 ug/100 ml e) 57-61 ug/100 ml	a) Not given b) Not given c) Not given d) Not given e) Not given	a) May 30 b) July 1 c) July 24, after plant closure d) August 18, after plant closure e) September 30, after plant closure and after chelation therapy 1975 Atmospheric lead ranged from 0.71-4.76 mg/cu m Smelter slag processing workers, U.K. Fatigue, abdominal pain, significant fall in hemoglobin, impaired concentration, depression, dyspepsia UNITED KINGDOM; ADULTS; LEAD POISONING; BLOOD; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; LEAD; DUST; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; SMELTERS	Tyrer, F.H. 1977 Journal of the Society of Occupational Medicine 27:26-30

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4091 Blood	Ingestion		a) 38 b) 38 c) 19 d) 19	a) Not given b) Not given c) Not given d) Not given	a) 1.91 + or - 0.66 mmol/l b) 2.01 + or - 0.63 mmol/l c) 0.67 + or - 0.23 mmol/l d) 0.93 + or - 0.81 mmol/l	a) Mothers in houses with lead pipes b) Children in houses with lead pipes c) Mothers in houses with copper pipes d) Children in houses with copper pipes Mother-and-child pairs living in north Wales developments ADULTS; CHILDREN; BLOOD; COMPARATIVE EVALUATIONS; LEAD; BIOACCUMULATION; DRINKING WATER	Elwood, P.C. Thomas, H. Sheltawy, M. 1978 Lancet 1(8078):1363-1364
4092 Blood		ASV	a) 19 b) 28	a) 11-28 ug/dl b) 11-126 ug/dl	a) 16 ug/dl b) 91 ug/dl	a) Controls b) Secondary lead smelter workers 19-64 yr old workers, 21-63 yr old controls. Workers reported 104 incidents of neurological, gastrointestinal or other symptoms. Controls reported 24 such incidents. BLOOD; LEAD; BIOINDICATORS; INDUSTRIAL PLANTS; INDUSTRIAL POLLUTION; SMELTERS; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; GASTROINTESTINAL SYSTEM; NEUROLOGIC MANIFESTATIONS	Hammond, P.B. Lerner, S.I. Gartside, P.S. Hanenson, I.B. Roda, S.B. Foulkes, E.C. Johnson, D.R. Pesce, A.J. 1980 Journal of Occupational Medicine 22(7):475-484
4093 Blood	Ingestion Inhalation	AAS	371	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.11 mg % b) 0.08 mg % c) 0.07 mg % d) 0.04 mg % e) 0.04 mg % Medians	a) Treated encephalopathy patients b) Treated Pb-poisoning patients c) Untreated subjects with high blood, high or low tooth Pb levels d) Untreated subjects with low blood, high tooth Pb levels e) Untreated subjects with low blood, low tooth Pb levels Children in Pb registry of NY City, siblings of registry cases and dental clinic patients. Most were black, from low-income families, ages 5-15 yr, mean 2.3 yr. High incidence of psychological referrals and behavior problems in a), b), c). Convulsions in 4 patients. 4 of 6 encephalopathy patients mentally retarded, some diagnosed organic brain syndrome or seizure disorders. LEAD; METALS; CHILDREN; AIR POLLUTION; NEW YORK; METAL POISONING; BEHAVIOR DISORDERS; RETARDATION; BLOOD; TEETH; PAINTS	Albert, R.E. Shore, R.E. Sayers, A.J. Strehlow, C. Kneip, T.J. Pasternack, B.S. Friedhoff, A.J. Covan, F. Cimino, J.A. 1974 Environmental Health Perspectives 7:33-39

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4094 Blood	Inhalation Dermal	AAS	20	a) 4-11 ug% b) 7-24 ug% c) 46-64 ug% d) 37-56 ug%	a) 9 + or - 1 ug% b) 14 + or - 3 ug% c) 56 + or - 3 ug% d) 45 + or - 4 ug% (S.E.)	a) Controls b) Exposed, no toxicity c) Exposed, symptomatic and biochemical evidence of toxicity d) Exposed, symptoms suggesting toxicity Residual Pb (RBC minus Pb in hemoglobin fraction, 10,000 MW fraction, and free Pb) Non-exposed industrial workers, ages 25-45 yr. Exposed workers from Pb smelting plant. Increased risk of toxicity at low blood Pb levels in workers with diminished capacity for synthesizing low molecular wt Pb-binding protein. ADULTS; LEAD POISONING; BLOOD; INDUSTRIAL MEDICINE; MEASUREMENT METHODS; LEAD; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS	Raghavan, S.R.V. Culver, B.D. Gonick, H.C. 1980 Environmental Research 22:264-270
4095 Blood		AAS	a) 284 b) 20 c) 20 d) 122	a) 3-24 ug/100 ml b) 7-19 ug/100 ml c) 6-20 ug/100 ml d) 5-37 ug/100 ml	a) 10.5 + or - 3.7 ug/100 ml b) 12.1 + or - 3.0 ug/100 ml c) 11.4 + or - 3.5 ug/100 ml d) 13.3 + or - 5.5 ug/100 ml	a) Patients, Melbourne, Royal Children's Hospital b) School children, Melbourne, inner suburbs c) School children, St. Andrews, semi-rural area d) Preschool children, Melbourne, inner suburbs Venous samples Elevated Pb (> 25 ug/ml) in 10% of Melbourne preschoolers is from pica. Pre-school and school-age children, State of Victoria, Australia AUSTRALIA; CHILDREN; BLOOD; LEAD; BIOACCUMULATION; URBAN AREAS; METALS	de Silva, P.E. Donnan, M.B. 1980 Medical Journal of Australia 2(6):315-318
4096 Blood			a) 70 b) 60	a) 7.0-26.5 ug/100 ml b) 2.3-37.1 ug/100 ml	a) 15.9 + or - 0.59 ug/100 ml b) 16.6 + or - 0.90 ug/100 ml (S.E.)	a) Controls b) Residents of polluted area Women, mean age 82.3 yr, from Cd-polluted area (Liege), and controls, mean age 81.1 yr, from Charleroi, Belgium. BLOOD; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; ZINC; METALS; BELGIUM; AGE; POPULATION EXPOSURE; INDUSTRIAL POLLUTION; SHELTERS; KIDNEY DISEASES	Lauwerys, R. Roels, H. Bernard, A. Buchet, J.P. 1980 International Archives of Occupational and Environmental Health 45:271-274
4097 Blood		AAS APDC-MIBK	14	0.7-4.0 umol/kg	2.3 umol/kg Median	Lead poisoning cases 24-59 yr old Japanese lead workers Peripheral nerve conduction velocity (NCV) correlated with blood Pb. NCV improvement after chelation therapy. LEAD; BLOOD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; NEUROLOGIC MANIFESTATIONS; METALS; LEAD POISONING	Araki, S. Honma, T. Yanagihara, S. Ushio, K. 1980 International Archives of Occupational and Environmental Health 46:151-157

(NEXT PAGE)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4098 Blood	Ingestion	AAS	100	> or = 60 ug/100 ml	Not applicable	Positive correlation with environmental Pb sources 94 black and 6 Hispanic children Loss of appetite, nausea, constipation, mental retardation Brain damage NEW JERSEY; CHILDREN; LEAD POISONING; MENTAL RETARDATION; BLOOD; LEAD; METALS	Foster, J.D. Iouria, D.B. Stinson, L. 1979 Archives of Environmental Health 34(5):368-371
4099 Blood	Ingestion	MS	a) 5 b) 1	a) 0.17-0.25 ug/g b) 13.8-14.3 ug/g	a) 0.194 ug/g b) Not applicable	a) 10 and 210 days after tracer doses of 68-204 ug/day plus dietary intakes of 142-215 ug/day as nitrate, breathing unfiltered air 80.7% of the time and lead-filtered air 19.3% of the time b) 0 and 40 days on air filtered to remove Pb, (49 yr old). Back to initial level after 20 days breathing unfiltered air. Healthy 25-53 yr olds in metabolic ward, low Pb diet up to 6 mo. LEAD; METALS; MINERAL METABOLISM; URINE; FECES; BLOOD; AIR POLLUTION; URBAN AREAS; ADULTS; COMPARATIVE EVALUATIONS; DIETS	Rabinowitz, M. Wetherill, G. Kopple, J. 1975 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 9:361-368
4100 Blood	Inhalation	AAS	a) 60 b) 45 c) 70	a) 2.3-37.1 ug/100 ml b) 6.2-28.7 ug/100 ml c) 7.0-26.5 ug/100 ml	a) 14.9 ug/100 ml b) 14.4 ug/100 ml c) 15.1 ug/100 ml Geometric	a) Residents of Liege (most polluted area) b) Residents of Brussels (less polluted area) c) Control area Means and cumulative frequency distributions not much different between the three groups Healthy subjects >60 yr old, residents of the same areas 25 yr, Belgium BELGIUM; ADULTS; AGE; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; METALS; ZINC; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS	Roels, H.A. Lauwerys, R.R. Buchet, J-P Bernard, A. 1981 Environmental Research 24:117-130
4101 Blood		AAS	a) 32 b) 7	a) 1.0-2.7 umol/l b) 0.4-0.8 umol/l	a) 1.6 umol/l b) 0.7 umol/l	a) Workers at Pb mine b) Controls Estimated from graph Residents of Greenland, 22-46 yr old. GREENLAND; ADULTS; BLOOD; URINE; LEAD; OCCUPATIONAL HAZARDS; MINING	Hansen, J.P.B. Dossing, M. Pauley, P.-E. 1981 Journal of Occupational Medicine 23(1):39-43
4102 Blood		ASV	a) 22 b) 22 c) 10	a) Not given b) Not given c) Not given	a) 24 ug/dl b) 26 ug/dl c) 26 ug/dl	a) Gout patients, no renal disease, 16 had prior Pb exposure b) Gout patients, renal disease, 10 had prior Pb exposure c) Patients, renal disease, no gout, no Pb exposure 32-78 yr old gout patients NEW JERSEY; ADULTS; KIDNEY DISEASES; BLOOD; URINE; LEAD	Batuman, V. Maesaka, J.K. Haddad, B. Tepper, E. Landy, E. Wedeen, R.P. 1981 New England Journal of Medicine 304(9):520-523

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4103 Blood			a) 48 b) 45	a) 20-125 ug/100 ml b) 22-80 ug/100 ml	a) Not given b) Not given	a) Workers exposed at least 1 yr b) Workers previously exposed > 4 yr, not exposed for 12 or more mo prior to study. ADULTS; BLOOD; URINE; LEAD; OCCUPATIONAL HAZARDS	Alessio, L. Castoldi, M.R. Monelli, O. Toffoletto, F. Zocchetti, C. 1979 International Archives of Occupational and Environmental Health 44:127-132
4104 Blood		AAS	a) 88 b) 114 c) 31 d) 33	a) Not given b) Not given c) Not given d) Not given	a) 180.0 ug/l b) 268.4 ug/l c) 668.3 ug/l d) 818.1 ug/l	a) University students, employees b) Workers, steel industry c) Workers, battery factory d) Workers, secondary Pb smelter 17-63 yr old Caucasians CANADA; ADULTS; BLOOD; SALIVA; IN VIVO ANALYSIS; LEAD; METALS; OCCUPATIONAL HAZARDS; SMELTERS	P'an, A.Y.S. 1981 Journal of Toxicology and Environmental Health 7:273-280
4105 Blood	Ingestion	AAS	a) 30 b) 20	a) Not given b) Not given	a) 25.4 + or - 12/1 ug/100 ml b) 17.8 + or - 4.9 ug/100 ml	a) Mentally retarded children b) Controls Probability of mental retardation increased when Pb exceeded 800 ug/l water. 2-5 yr olds. LEAD; METALS; DRINKING WATER; CHILDREN; MENTAL RETARDATION; HEALTH HAZARDS	Beattie, A.D. Moore, M.R. Goldberg, A. Finlayson, M.J.W. Mackie, E.M. Graham, J.F. Main, J.C. McLaren, D.A. Murdoch, R.M. Stewart, G.T. 1975 Lancet 1(7907):589-592
4106 Blood, cells	Inhalation Dermal	AAS	20	a) 39-54 ug% b) 107-150 ug% c) 172-209 ug% d) 102-120 ug%	a) 46 + or - 3 ug% b) 130 + or - 8 ug% c) 193 + or - 7 ug% d) 110 + or - 3 ug% (S.E.)	a) Controls b) Exposed, no toxicity c) Exposed, symptomatic and biochemical evidence of toxicity d) Exposed, symptoms suggesting toxicity Non-exposed industrial workers, ages 25-45 yr. Exposed workers from Pb smelting plant. Increased risk of toxicity at low blood Pb levels in workers with diminished capacity for synthesizing low molecular wt Pb-binding protein. ADULTS; LEAD POISONING; BLOOD; INDUSTRIAL MEDICINE; LEAD; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS	Raghavan, S.R.V. Culver, B.D. Gonick, H.C. 1980 Environmental Research 22:264-270

(NEXT PAGE)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4107 Blood, cells	Inhalation	AAS	a) 41 b) 101	a) 4-49 ug/100 ml b) 10-122 ug/100 ml	a) 23+10 ug/100 ml b) 48.3 ug/100 ml	a) Controls b) Occupationally exposed to about 1 mg/cu m dust with 2.7-12.8% Pb Erythrocytes Italian factory workers, mean exposure time of 4.8 yr Moderate to severe metabolic effects in 80% of exposed workers. ITALY; ADULTS; LEAD POISONING; METAL POISONING; OCCUPATIONAL DISEASES; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; LEAD; METALS; DUST; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS	Vaccaro, S. Barghigiani, C. Colosbetti, G. Lenci, F. Loi, A.M. Paggiaro, P.L. Pagano, G. Tona, G. 1980 International Archives of Occupational and Environmental Health 45:35-48
4108 Blood, whole		AAS	45	a) 10-120 ug/dl b) 62-120 ug/dl c) Not given	a) 44.53 ug/dl b) 74 + or - 8 (SE) ug/dl c) 21 + or - 4 (SE) ug/dl	a) All children b) 12 children with initial Pb levels > 60 ug/dl c) The 12 children in b) after chelation therapy 1-5 yr olds, NY. LEAD; VITAMIN D; CHILDREN; NEW YORK; BLOOD; COMPARATIVE EVALUATIONS; BLOOD SERUM; METABOLISM; METABOLITES; HYDROXYCHOLICALCIFEROLS	Rosen, J.F. Chesney, R.W. Hamstra, A. DeLuca, H.F. Mahaffey, K.R. 1980 New England Journal of Medicine 302(20):1128-1131
4109 Blood, whole		AAS	55	64-308 ug/l	166 ug/l	Non-occupationally exposed. Aircraft industry employees in Connecticut CONNECTICUT; ADULTS; BLOOD; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; LEAD; OCCUPATIONAL HAZARDS	Zygowicz, E.R. Hollebone, B.R. Perkins, H.M. 1980 Clinical Chemistry 26(10):1413-1418
4110 Blood, whole	Inhalation	Radiometry	17	28-38% of dose	32% of dose	Peaks, after mean lung exposures of 130 pg PbCl2 as 0.26 u aerosol or 11.5% ug Pb(OH)2 as 0.24 u aerosol. Peak time 2019 min. Estimated blood volume 6% body wt. 20-56 yr olds, 55.0-95.4 kg, no history of pulmonary disease. LEAD; LUNGS; COMPARATIVE EVALUATIONS; BLOOD; INHALATION; AIR POLLUTION; MEASUREMENT METHODS; ADULTS; NEW YORK	Morrow, P.E. Beiter, H. Amato, F. Gibb, F.R. 1980 Environmental Research 21:373-384
4111 Body	Ingestion	Radiometry	a) 4 b) 5	a) Not given b) Not given	a) 16 + or - 7% b) 47 + or - 11%	a) Subjects with normal Fe absorption and serum ferritin levels b) Subjects with high Fe absorption and subnormal serum ferritin. Significant positive correlation between oral Pb and Fe absorption. 35-70 yr olds, United Kingdom. 9 patients with chronic blood loss, hemiparesis, or venesection for secondary polycythemia. 1 normal blood donor. UNITED KINGDOM; BLOOD SERUM; BODY; BIOACCUMULATION; METABOLISM; IN VIVO ANALYSIS; IRON; LEAD	Watson, W.S. Hume, R. Moore, M.R. 1980 Lancet 2(8188):236-237

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4112 Bone		AAS	a) 42 b) 53 c) 14	a) 14-214 ppm b) 11-134 ppm c) 0.3-15 ppm Ash wt	a) 72 + or - 40 ppm b) 64 + or - 31 ppm c) 4.1 + or - 3.5 ppm Ash wt	a) Black adults b) Caucasian adults c) Vertebra, children Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963
4113 Bone		X-ray spectrom	22	20-118 ug/g	Not given	Measured in vivo in forefinger. Concentration greater with length of employment. Former workers (27-75 yr old) at storage battery plant. SWEDEN; BLOOD; BONES; IN VIVO ANALYSIS; LEAD; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ahlgren, L. Haeger-Aronsen, B. Mattsson, S. Schutz, A. 1980 British Journal of Industrial Medicine 37:109-113
4114 Bone		Electrochem	1	a) Not given b) Not given c) Not given	a) 136.05 ug/g dry wt b) 37.50 ug/g dry wt c) 163.33 ug/g dry wt	a) Rib b) Calvarium c) Sternum Autopsy samples 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4115 Brain		Electrochem	1	a) Not given b) Not given	a) 0.99 ug/g dry wt b) 4.10 ug/g dry wt	a) Cortex b) Stem Autopsy samples 36 yr old metal burner, exposed during a building demolition 3 mo earlier; Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443

(NEXT PAGE)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4116 Brain		AAS	22	a) 0.051-0.152 ug/g b) 0.012-0.050 ug/g c) 0.059-0.112 ug/g d) < 0.010-0.018 ug/g e) 0.044-0.183 ug/g f) < 0.008-0.026 ug/g Wet wt	a) 0.067 ug/g b) 0.039 ug/g c) 0.087 ug/g d) 0.011 ug/g e) 0.075 ug/g f) 0.011 ug/g Wet wt Medians	a) City residents, lower floors, total Pb, 8 subjects b) City residents, lower floors, trialkyl Pb, 8 subjects c) City residents, upper floors, total Pb, 4 subjects d) City residents, upper floors, trialkyl Pb, 4 subjects e) Suburbs, village residents, total Pb, 10 subjects f) Suburbs, village residents, trialkyl Pb, 10 subjects Decreasing Pb levels with increasing age (P < 0.05) Autopsies. Residents of Copenhagen, its suburbs, and of villages on Zealand. Ages 12-54 yr. DENMARK; ADULTS; AUTOPSIES; CHILDREN; BRAIN; AIR POLLUTION; BIOACCUMULATION; URBAN AREAS; LEAD ORGANIC COMPOUNDS	Nielsen, T. Jensen, K.A. Grandjean, P. 1978 Nature 273(5671):602-603
4117 Breath	Inhalation	PIXE	1	99-0.03 ug/cu m	Not given	After automotive Pb halide aerosol exposure. Levels a function of particle size. Estimated from graph. Tidal volume of about 900 cu m and respiratory frequency of 15 cycles/min maintained during 10-min sampling time. BREATH; BROMINE; CALCIUM; CHLORINE; LEAD; AUTOMOTIVE; ATMOSPHERE; PARTICULATES	Desaedeleer, G.G. Winchester, J.W. Environmental Science and Technology 9(10):971-972
4118 Breath	Inhalation	PIXE	1	Not given	6.6 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 8 arc welding rods. Near detection limit. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4119 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 23 ppm b) 4 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4120 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4121 Hair		ASV	1	1.53-7.47 ug/g	4.40 + or - 1.33 ug/g	Beard hair - 10 wk period. Daily doses of 100-300 mg Zn. 29 determinations. Australia AUSTRALIA; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; LEAD; METALS; TRACE ELEMENTS; ZINC	Chittleborough, G. Steel, B.J. 1980 Science of the Total Environment 15:25-35
4122 Hair		AAS	a) 45 b) 70 c) 44 d) 65	a) 15.3-49.7 ug/g b) 19.3-59.6 ug/g c) 13.9-16.9 ug/g d) 8.0-13.7 ug/g	a) 24.6 ug/g b) 29.0 ug/g c) 16.1 ug/g d) 9.8 ug/g Geometric means	a) Males, Los Angeles b) Females, Los Angeles c) Males, Lancaster d) Females, Lancaster Areas differed p<<.001. Values for long hair. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4123 Hair		Electroches	1	Not given	45.17 ug/g dry wt	Autopsy 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4124 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4125 Heart		Electroches	1	Not given	3.90 ug/g dry wt	Autopsy sample 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4126 Kidney		AAS	a) 42 b) 56 c) 13	a) 15-246 ppm b) 15-204 ppm c) 1.4-74 ppm Ash wt	a) 52 + or - 47 ppm b) 36 + or - 40 ppm c) 26 + or - 23 ppm Ash wt	a) Black adults b) Caucasian adults c) Children Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. FETALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4127 Kidney		AAS	a) 8 b) 9 c) 11	a) 0.10-0.60 ug/g b) 0.15-0.68 ug/g c) 0.0093-0.70 ug/g Wet wt	a) 0.23 ug/g b) 0.34 ug/g c) 0.29 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4128 Kidney		Electrochem	1	Not given	2.48 ug/g dry wt	Autopsy sample 36 yr old metal turner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatique LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4129 Liver		AAS	a) 40 b) 60 c) 14	a) 15-517 ppm b) 15-785 ppm c) 0.7-167 ppm Ash wt	a) 96 + or - 108 ppm b) 69 + or - 114 ppm c) 40 + or - 46 ppm Ash wt	a) Black adults b) Caucasian adults c) Children Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4130 Liver		AAS	a) 8 b) 9 c) 10	a) 0.21-0.55 ug/g b) 0.38-1.0 ug/g c) 0.28-0.88 ug/g Wet wt	a) 0.28 ug/g b) 0.63 ug/g c) 0.36 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4131 Liver		Electroche=	1	Not given	7.57 ug/g dry wt	Autopsy sample 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4132 Lung		AAS	a) 8 b) 9 c) 10	a) 0.0044-0.17 ug/g b) 0.13-0.60 ug/g c) 0.075-0.32 ug/g Wet wt	a) 0.072 ug/g b) 0.23 ug/g c) 0.12 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Lead
7439-92-1
Pb
Atw 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4133 Lung	Inhalation	Radiometry	a) 8 b) 9	a) 6-72 pg b) 1-5 ug	a) 30 pg b) 3 ug	a) After 23% aerosol deposition of carrier-free PbCl2 labelled with Pb203 b) After 26% aerosol deposition of Pb203-labelled Pb(OH)2 Particle size, MMAD 0.25 um Mean respiratory burden of Pb203, 1.7 uCi in a) and 1.9 uCi in b). 20-56 yr olds, 55.0-95.4 kg, no history of pulmonary disease. LEAD; LUNGS; COMPARATIVE EVALUATIONS; BLOOD; INHALATION; AIR POLLUTION; MEASUREMENT METHODS; ADULTS; NEW YORK	Morrow, P.E. Beiter, H. Amato, F. Gibb, F.R. 1980 Environmental Research 21:373-384
4134 Nail		Electrochem	1	Not given	59.59 ug/g dry wt	Autopsy 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443
4135 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4136 Nerve		Electrochem	1	Not given	0.46 ug/g dry wt	Autopsy sample, peripheral nerve 36 yr old metal burner, exposed during a building demolition 3 mo earlier. Killed in industrial accident. Abdominal cramps, constipation, vomiting, fatigue LEAD; LEAD POISONING; INDUSTRIAL DISEASES; INDUSTRIAL POLLUTION; BLOOD; CASE HISTORIES; AUTOPSIES; HEART; KIDNEYS; NERVES; BRAIN; NAILS; HAIR; LIVER; BONES; UNITED KINGDOM; ADULTS; HEALTH HAZARDS	Campbell, B.C. Beattie, A.D. Elliott, H.L. Goldberg, A. Moore, M.R. Beevers, D.G. Tree, M. 1979 Archives of Environmental Health 34(6):439-443

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4137 Saliva		AAS	a) 88 b) 114 c) 31 d) 33	a) Not given b) Not given c) Not given d) Not given	a) 58.6 ug/l b) 43.2 ug/l c) 946.5 ug/l d) 2220.5 ug/l	a) University students, employees b) Workers, steel industry c) Workers, battery factory d) Workers, secondary Pb smelter 17-63 yr old caucasians CANADA; ADULTS; BLOOD; SALIVA; IN VIVO ANALYSIS; LEAD; METALS; OCCUPATIONAL HAZARDS; SMELTERS	P'an, A.Y.S. 1981 Journal of Toxicology and Environmental Health 7:273-280
4138 Spinal cord		X-ray spectros	a) 7 b) 12	a) 11.2-113.0 ug/g b) 6.1-31.6 ug/g Dry wt	a) 40.7 + or - 36.7 ug/g b) 18.6 + or - 8.7 ug/g Dry wt	a) Motor neuron disease patients b) Controls Ventral horn tissue, autopsy Patients died of myotrophic lateral sclerosis and progressive muscular atrophy, mean age, 58.6 + or - 13.1 yr. Controls died of various diseases at 60.9 + or - 11.1 yr. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24
4139 Teeth	Inhalation	AAS	a) 367 b) 323 c) 690 d) 597 e) 40	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 4.77 ug/g dry wt b) 4.98 ug/g dry wt c) 4.87 ug/g dry wt d) 4.92 ug/g dry wt e) 3.08 ug/g dry wt	a) Boys, Area A b) Girls, Area A c) Boys and girls, Area A d) Children living in Area A since birth e) Children, Area B Area A, heavily industrialized city. Area B, suburban/rural area Concentration increased with age, 4.6%/yr. German 5-12 yr olds, living in Duisburg, Ruhrdistrict and Gummersbach, Bergisches Land. GERMANY; CHILDREN; TEETH; BIOACCUMULATION; INDUSTRIAL EMISSIONS; URBAN AREAS; LEAD	Ewers, U. Brockhaus, A. Genter, E. Schurmann, E.A. 1979 International Archives of Occupational and Environmental Health 44:65-80
4140 Teeth	Ingestion Inhalation	AAS	371	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 32 ug/g b) 29 ug/g c) 33 ug/g d) 58 ug/g e) 12 ug/g Ash wt	a) Treated encephalopathy patients b) Treated Pb-poisoning patients c) Untreated subjects with high blood, high or low tooth Pb levels d) Untreated subjects with low blood, high tooth Pb levels e) Untreated subjects with low blood, low tooth Pb levels Children in Pb registry of NY City, sitlings of registry cases and dental clinic patients. Most were black, from low-income families, ages 5-15 yr, mean 2.3 yr. High incidence of psychological referrals and behavior problems in a), b), c). Convulsions in 4 patients. 4 of 6 encephalopathy patients mentally retarded, some diagnosed organic brain syndrome or seizure disorders. LEAD; METALS; CHILDREN; AIR POLLUTION; NEW YORK; METAL POISONING; BEHAVIOR DISORDERS; RETARDATION; BLOOD; TEETH; PAINTS	Albert, R.E. Shore, R.E. Sayers, A.J. Strehlow, C. Kneip, T.J. Pasternack, B.S. Friedhoff, A.J. Covan, F. Cimino, J.A. 1974 Environmental Health Perspectives 7:33-39

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4141 Urine	Inhalation	AAS		8-80 ug/l	16 ug/l	20 samples Direct determination and extraction procedures agree. Welders, garage personnel and putty workers in Swedish airplane factory. INDUSTRIAL POLLUTION; COMPARATIVE EVALUATIONS; CADMIUM; SWEDEN; ADULTS; BLOOD; URINE; BIOACCUMULATION	Lagesson, V. Andrasko, L. 1979 Clinical Chemistry 25(11):1948-1953
4142 Urine		AAS	a) 59 b) 77 c) 51 d) 70	a) 11.6-15.4 ug/l b) 9.1-12.6 ug/l c) 8.0-9.6 ug/l d) 6.6-9.7 ug/l	a) 13.2 ug/l b) 10.3 ug/l c) 9.0 ug/l d) 7.8 ug/l Geometric means	a) Males, Los Angeles b) Females, Los Angeles c) Males, Lancaster d) Females, Lancaster Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-16, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, M.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4143 Urine	Ingestion	MS	4	27-38 ug/day	32.75 ug/day	Excretion under ambient conditions (unfiltered air) during 41-124 days Pb balance study. Healthy 25-53 yr olds in hospital metabolic ward, on low Pb diet up to 6 months. LEAD; METALS; MINERAL METABOLISM; URINE; FECES; BLOOD; AIR POLLUTION; URBAN AREAS; ADULTS; COMPARATIVE EVALUATIONS; DIETS	Rabinowitz, M. Wetherill, G. Kopple, J. 1975 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 9:361-368
4144 Urine		AAS	a) 32 b) 7	a) 1.3-16 umol/24 hr b) 0.4-1.5 umol/24 hr	a) 4.1 umol/24 hr b) 0.8 umol/24 hr	a) Workers at Pb mine b) Controls EDTA-mobilized lead. Residents of Greenland, 22-46 yr old. GREENLAND; ADULTS; BLOOD; URINE; LEAD; OCCUPATIONAL HAZARDS; MINING	Hansen, J.P.B. Dossing, M. Pauley, P.-E. 1981 Journal of Occupational Medicine 23(1):39-43
4145 Urine		ASV	a) 22 b) 22 c) 10	a) Not given b) Not given c) Not given	a) 470 ug/3 days b) 806 ug/3 days c) 424 ug/3 days	a) Gout patients, no renal disease, 16 had prior Pb exposure b) Gout patients, renal diseases, 10 had prior Pb exposure c) Patients, renal disease, no gout, no prior Pb exposure. 32-78 yr old gout patients NEW JERSEY; ADULTS; KIDNEY DISEASES; BLOOD; URINE; LEAD	Batuman, V. Maesaka, J.K. Haddad, B. Tepper, E. Landy, E. Wedeen, R.P. 1981 New England Journal of Medicine 304(9):520-523

(NEXT PAGE)

Lead
7439-92-1
Pb
AtW 207.2, MP 327.4 C, BP 1740 C, VP 1.77 mm Hg at 1000 C, 1 mm Hg at 970 C, 10 mm Hg at 1160 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4186 Urine			93	a) 2-230 ug/l b) 200-4500 ug/24 hr c) 10-170 ug/l d) 200-4300 ug/24 hr	a) Not given b) Not given c) Not given d) Not given	a) Nonchelated Pb, in 48 workers exposed at least 1 yr b) EDTA-bound Pb, in group (a) c) Nonchelated Pb in 45 workers previously exposed more than 4 yr, but not exposed for 12 or more mo prior to study d) EDTA-bound Pb, in group (c). ADULTS; BLOOD; URINE; LEAD; OCCUPATIONAL HAZARDS	Alessio, L. Castoldi, M.E. Monelli, O. Toffoletto, F. Zocchetti, C. 1979 International Archives of Occupational and Environmental Health 44:127-132

Lithium
7439-93-2
Li
AtW 6.941, MP 180.54 C, BP 1336 C, VP 1 mm Hg at 723 C, 10 mm Hg at 890 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4147 Blood, plasma		AAS	13	0.20-0.68 meq/l	Not applicable	Range of means Dose, 600-900 mg/day as carbonate. Depressed patients LITHIUM; BLOOD PLASMA; METALS; CHEMOTHERAPY; NERVOUS SYSTEM DISEASES	Hallinger, A.G. Hallinger, J. Himmelhoch, J.M. Neil, J.F. Hanin, I. 1980 Psychopharmacology 60:249-255
4148 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 0.78 + or - 0.01 meq/l b) 0.48 + or - 0.01 meq/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level (P<0.01) in hard-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016
4149 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 0.22 ppm b) 0.40 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

m-Phenylenediamine, 4-methoxy- (8 CI)
1,3-Benzenediamine, 4-methoxy- (9 CI)
615-05-4
C7-H10-N2-O
MW 138.1

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4150 Urine						Review. Local and systemic effects relating to hair dye formulation, ingredient tests, and experiences in man and animals. ADULTS; DERMATITIS; NEOPLASMS; URINE; IN VITRO ANALYSIS; IN VIVO ANALYSIS; REVIEW; DYES; CARCINOGEN; COSMETICS; GENETIC EFFECTS; HEALTH HAZARDS; METABOLISM; METABOLITES	Marzulli, F.N. Green, S. Maibach, H.I. 1978 Journal of Environmental Pathology and Toxicology 1:509-530

m-Toluamide, N,N-diethyl- (8 CI)
Benzamide, N,N-diethyl-3-methyl- (9 CI)
134-62-3
C12-H17-N-O
MW 191.26, MP <25 C, BP 160 C at 19 mm Hg, 111 C at 1.0 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4151 Blood	Dermal	GC/MS	1	Not given	0.3 mg/100 ml	8 hr after application of 10.4 g of DEET (133 mg/kg) in a commercial insect repellent to about 75% of skin surface. 30 yr old, wt 78 kg UNITED STATES; ADULTS; BLOOD; URINE; PESTICIDES; IN VITRO ANALYSIS	Wu, A. Pearson, H.L. Shekoski, D.L. Soto, R.J. Stewart, R.D. 1979 Journal of High Resolution Chromatography and Chromatography Communications 2:558-562

m-Xylene (8 CI)
Benzene, 1,3-dimethyl- (9 CI)
108-38-3
C8-H10
MW 106.16, BP ~47.4 C, VP 10 mm Hg at 28.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4152 Blood	Inhalation	GC	4	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 8.2 + or - 0.8 umol/l b) 9.9 + or - 1.6 umol/l c) 10.6 + or - 1.5 umol/l d) 19.9 + or - 1.6 umol/l e) 8.7 + or - 2.1 umol/l f) 9.4 + or - 2.9 umol/l g) 29.1 + or - 3.2 umol/l	a) Monday a.m., week 1, air level 4.1 umol/l b) Monday p.m., week 1, air level 4.1 umol/l c) Friday a.m., week 1, air level 8.2 umol/l d) Friday p.m., week 1, concentration in air level 8.2 umol/l e) Monday a.m., week 2, air levels fluctuating at 4.1 umol/l f) Monday p.m., week 2, air levels fluctuating at 4.1 umol/l g) Wednesday p.m., week 2, air level at 8.2 umol/l with peaks at 16.4 umol/l Finish students, mean age 23 yr, mean ht 1818 cm, mean wt 70 kg. Impairment of body balance and choice reaction time. FINLAND; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD; INDUSTRIAL MEDICINE	Savolainen, K. Riihimaki, V. Linnoila, M. 1979 International Archives of Occupational and Environmental Health 44:201-211
4153 Blood	Inhalation	GC	4	1.04-1.49 mg/l	1.3075 mg/l	As meta + para, measured at end of working day. Mean air levels 56-68 ppm. Laboratory assistants working with organic solvents. OCCUPATIONAL HAZARDS; GERMANY; ADULTS; BLOOD; CARCINOGEN	Angerer, J. Lehnert, G. 1979 International Archives of Occupational and Environmental Health 43:154-150
4154 Blood	Inhalation	GC	8	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 21.6 + or - 6.3 umol/l b) 66.7 + or - 27.5 umol/l c) 29.5 + or - 4.2 umol/l d) 51.0 + or - 2.4 umol/l e) 117.3 + or - 23.8 umol/l f) 48.1 + or - 18.2 umol/l	a) Treatment day 1, constant exposure level (3.7 umol/l) b) Treatment day 5, constant exposure level (8.2 umol/l) c) Treatment day 6, following 2 nontreatment days, constant exposure level (3.7 umol/l) d) Treatment day 1, variable exposure level (time-weighted average, 3.8 umol/l) e) Treatment day 5, variable exposure level (time-weighted average, 7.7 umol/l) f) Treatment day 6, following 2 nontreatment days, variable exposure level (time-weighted average, 3.8 umol/l) Healthy volunteers, mean ages 23.9 + or - 5.4 and 24.7 + or - 5.1 yr Impairment of body balance, reaction times, manual coordination, and changes in EEG. FINLAND; ADULTS; BLOOD; COMPARATIVE EVALUATIONS; BENZENES; INHALATION	Savolainen, K. Riihimaki, V. Seppalainen, A.M. Linnoila, M. 1980 International Archives of Occupational and Environmental Health 45:105-121

(NEXT PAGE)

m-Xylene (8 CI)
Benzene, 1,3-dimethyl- (9 CI)
108-38-3
C8-H10
MW 106.16, MP -47.4 C, VP 10 mm Hg at 28.3 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4155 Breath		GC-MS	54 (387 samples)	Not given	0.324 ng/l Geometric	Measured at 25 C and 760 mm Hg 15.8% occurrence Lower and upper one-Sigma limits 0.045 and 2.32 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4156 Aorta		NA	2	110-860 ug/g (wet wt)	490 + or - 530 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4157 Blood				a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.72 + or - 0.07 mmol/l b) 0.73 + or - 0.08 mmol/l c) 0.79 + or - 0.09 mmol/l d) 0.80 + or - 0.09 mmol e) 0.75 + or - 0.11 mmol/l f) 0.74 + or - 0.11 mmol/l	a) At delivery, from mothers on vitamin supplement b) From control mothers at delivery c) From cord with vitamin supplement d) From cord controls e) From infants with vitamin supplement f) From infant controls Dose of 10 ug. 506 pregnant women, 633 pregnant controls. Scotland. SCOTLAND; UNITED KINGDOM; ADULTS; INFANTS; BLOOD; UMBILICAL CORD; CALCIUM; HYDROXYCHOLECALCIFEROLS; MAGNESIUM; MINERALS; PHOSPHORUS; TRACE ELEMENTS; VITAMIN D; DIETS; MINERAL METABOLISM; PREGNANCY	Cockburn, F. Belton, N.R. Purvis, R.J. Giles, M.M. Brown, J.K. Turner, T.L. Wilkinson, E.M. Forfar, J.O. Barrie, W.J.M. McKay, G.S. Pocock, S.J. 1980 British Medical Journal 281(6232):11-14

(NEXT PAGE)

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4158 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 2.03 + or - 0.01 meq/l b) 1.91 + or - 0.01 meq/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly higher level (P<0.01) in hard-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016
4159 Brain		NA		a) 79-400 ug/g (wet wt) b) 100-440 ug/g (wet wt) c) 64-320 ug/g (wet wt) d) 57-280 ug/g (wet wt)	a) 240 + or - 100 ug/g (wet wt) b) 270 + or - 240 ug/g (wet wt) c) 170 + or - 89 ug/g (wet wt) d) 170 + or - 90 ug/g (wet wt)	a) Males, cerebrum, 8 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4160 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 35 ppm b) 37 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

(NEXT PAGE)

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4161 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4162 Heart		NA	a) 4 b) 2	a) 87-420 ug/g (wet wt) b) 110-320 ug/g (wet wt)	a) 200 + or - 150 ug/g (wet wt) b) 220 + or - 140 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4163 Heart		AAS	a) 14 b) 7	a) 94-246 ug/g b) 197-251 ug/g Wet wt	a) 198.4 + or - 38.1 ug/g b) 221.3 + or - 16.8 ug/g Wet wt	a) Sudden death from ischemic heart disease b) Sudden death from trauma Ventricular myocardium < 60 yr olds MAGNESIUM; POTASSIUM; HEART DISEASES; AUTOPSIES; HEART; METALS	Johnson, C.J. Peterson, D.R. Smith, E.K. 1979 American Journal of Clinical Nutrition 32:967-970
4164 Kidney		NA	a) 6 b) 2	a) 53-250 ug/g (wet wt) b) 57-130 ug/g (wet wt)	a) 140 + or - 92 ug/g (wet wt) b) 94 + or - 52 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4165 Liver		NA	a) 10 b) 3	a) 37-750 ug/g (wet wt) b) 44-200 ug/g (wet wt)	a) 240 + or - 210 ug/g (wet wt) b) 140 + or - 83 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4166 Lung		NA	a) 2 b) 2	a) 79-150 ug/g (wet wt) b) 86-110 ug/g (wet wt)	a) 110 + or - 50 ug/g (wet wt) b) 98 + or - 17 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4167 Muscle		NA	a) 4 b) 8	a) 130-180 ug/g (wet wt) b) 82-500 ug/g (wet wt)	a) 150 + or - 22 ug/g (wet wt) b) 230 + or - 140 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4168 Pancreas		NA	a) 4 b) 2	a) 210-350 ug/g (wet wt) b) 260-320 ug/g (wet wt)	a) 280 + or - 70 ug/g (wet wt) b) 290 + or - 42 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4169 Spleen		NA	a) 5 b) 3	a) 120-560 ug/g (wet wt) b) 65-580 ug/g (wet wt)	a) 230 + or - 190 ug/g (wet wt) b) 320 + or - 260 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4170 Teeth		AAS	a) 51 b) 10 c) 10 d) 26 e) 11 f) 51 g) 10 h) 48	a) 2-5 mg/g b) 2-3.7 mg/g c) 2.3-3.6 mg/g d) 2.2-3.9 mg/g e) 6.5-8.1 mg/g f) 6.8-9.1 mg/g g) 7.2-11.1 mg/g h) 5.8-9.1 mg/g	a) Not given b) Not given c) Not given d) Not given e) 7.4 + or - 0.3 mg/g f) 8.8 + or - 0.2 mg/g g) 9.0 + or - 0.3 mg/g h) 7.1 + or - 0.2 mg/g	a) Enamel, rural area with < 13 mg Mg/g soil b) Enamel, rural area with 13-19 mg Mg/g soil c) Enamel, rural area with > 19 mg Mg/g soil d) Enamel, urban area e) Dentine, as in (a) f) Dentine, as in (b) g) Dentine, as in (c) h) Dentine, as in (d) Estimated from graph (a-c) Age dependent data also presented Residents in Finland FINLAND; AGE; SEX; TEETH; COMPARATIVE EVALUATIONS; MAGNESIUM; ZINC; RURAL AREAS; URBAN AREAS; METALS	Lappalainen, R. Knuuttila, M. Salminen, R. 1981 Archives of Oral Biology 26:1-6

(NEXT PAGE)

Magnesium
7439-95-4
Mg
AtW 24.305, MP 651 C, BP 1100 C, VP 1 mm Hg at 621 C, 10 mm Hg at 740

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4171 Urine	Ingestion	AAS	10	Not given	94 + or - 28 mg/day	Loss after unsupplemented intake of 269 mg/day. Data from 47 7-day experimental periods. University students and employees, a nurse and a teacher. Nulliparous, ages 19-29 yr. Magnesium balance slightly negative, reflecting inadequate intake (60% of RDA). TENNESSEE; URINE; IRON; CALCIUM; MAGNESIUM; MINERALS; PHOSPHORUS; DIETS; MINERAL METABOLISM; PREGNANCY	Ashe, J.R. Schofield, F.A. Gram, M.R. 1979 American Journal of Clinical Nutrition 32:286-291

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4172 Aorta		NA	2	0.38-0.86 ug/g (wet wt)	0.62 + or - 0.34 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4173 Blood		AAS	60	3.85-15.1 ug/l	9.03 + or - 2.25 ug/l	No correlation between concentration and age, sex, or smoking. Healthy, nonfasting 15-83 yr olds. BLOOD; MEASUREMENT METHODS; MANGANESE; METALS	Pleban, P.A. Pearson, K.H. 1979 Clinical Chemistry 25(11):1915-1918
4174 Blood		AAS	a) 18 b) 20 c) 25 d) 43	a) Not given b) Not given c) Not given d) Not given	a) 0.96 ug/100 ml b) 0.65 ug/100 ml c) > 1 ug/100 ml d) > 1 ug/100 ml Medians	a) Boys living < 1 km from smelter b) Girls living < 1 km from smelter c) Urban children d) Rural children Estimated from graph. School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4175 Blood, serum		AAS	20	0.98-2.92 ug/l	1.82 + or - 0.64 ug/l	No correlation between concentration and age, sex, or smoking. Healthy, nonfasting 15-83 yr olds. BLOOD SERUM; MEASUREMENT METHODS; MANGANESE; METALS	Pleban, P.A. Pearson, K.H. 1979 Clinical Chemistry 25(11):1915-1918
4176 Brain		NA		a) 0.11-1.0 ug/g (wet wt) b) 0.42-1.8 ug/g (wet wt) c) 0.06-0.91 ug/g (wet wt) d) Not given	a) 0.54 + or - 0.27 ug/g (wet wt) b) 1.1 + or - 0.98 ug/g (wet wt) c) 0.43 + or - 0.26 ug/g (wet wt) d) 0.66 + or - 0.58 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 7 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4177 Brain		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 25.5 + or - 0.9 nmol/g b) 24.8 + or - 3.3 nmol/g c) 34.4 + or - 1.6 nmol/g d) 22.6 + or - 2.0 nmol/g e) 15.8 + or - 1.8 nmol/g f) 32.8 + or - 3.8 nmol/g Dry wt SE	a) Globus pallidus, 11 samples, coefficient of variation (CV) 11.9% b) Caudate nucleus, 13 samples, CV 47.7% c) Putamen, 12 samples, CV 16.5% d) Substantia nigra, 6 samples, CV 21.7% e) Cerebral cortex, 15 samples, CV 44.5% f) Hippocampus, 9 samples, CV 35.0% Autopsy samples CEREBRAL CORTEX; MEASUREMENT METHODS; CALCIUM; COPPER; IRON; MANGANESE; BRAIN; AUTOPSIES	Goldberg, W.J. Allen, M. 1981 Clinical Chemistry 27(4):562-564
4178 Breath	Inhalation	PIXE	1	Not given	63.0 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4179 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 0.83 ppm b) 0.58 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4180 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4181 Hair		NA	a) 38 b) 24 c) 37 d) 28 e) 16 f) 19	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.19 + or - 0.04 ug/g b) 0.30 + or - 0.10 ug/g c) 0.28 + or - 0.17 ug/g d) 0.94 + or - 0.25 ug/g e) 1.05 + or - 0.42 ug/g f) 1.30 + or - 0.28 ug/g	a) Controls, at birth b) Full-term low birthweight, at birth c) Pre-term, at birth d) Controls, 3 mo e) Full-term low birthweight, 3 mo f) Pre-term, 3 mo Medians + or - SEM Neonates in Halifax. Pre-term group mean birthweight 1880 g, 26-36 wk gestation, full-term low birthweight group mean birth weight 2371 g, 38-42 wk gestation, and full-term controls mean birthweight 3590 g, 38-42 wk gestation. HAIR; METALS; ZINC; COPPER; MANGANESE; VANADIUM; IODINE; INFANTS; SEX	Gibson, R.S. Dewolfe, M.S. 1980 Nutrition Reports International 21(3):341-349
4182 Hair		NA	a) 23 b) 19 c) 42 d) 14 e) 26 f) 40	a) 0.030-2.663 ug/g b) 0.156-3.724 ug/g c) 0.030-3.724 ug/g d) 0.123-8.901 ug/g e) 0.038-16.330 ug/g f) 0.038-16.330 ug/g	a) 0.425 ug/g b) 0.788 ug/g c) 0.596 ug/g d) 0.279 ug/g e) 0.466 ug/g f) 0.403 ug/g Medians	a) Male controls b) Female controls c) All controls d) Male multiple sclerosis patients e) Female multiple sclerosis patients f) All multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4183 Heart		NA	a) 4 b) 2	a) 0.26-0.41 ug/g (wet wt) b) 0.52-1.4 ug/g (wet wt)	a) 0.33 + or - 0.06 ug/g (wet wt) b) 0.96 + or - 0.62 ug/g (wet wt).	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4184 Kidney		NA	a) 7 b) 2	a) 0.24-1.0 ug/g (wet wt) b) 0.63-0.83 ug/g (wet wt)	a) 0.76 + or - 0.28 ug/g (wet wt) b) 0.73 + or - 0.14 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4185 Kidney		NA	a) 8 b) 9 c) 10	a) 0.050-0.85 ug/g b) 0.0050-3.62 ug/g c) 0.013-1.74 ug/g Wet wt	a) 0.073 ug/g b) 0.073 ug/g c) 0.076 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4186 Kidney	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
4187 Liver		NA	a) 11 b) 3	a) Not given b) 0.96-2.5 ug/g (wet wt)	a) 1.7 + or - 1.6 ug/g (wet wt) b) 1.5 + or - 0.88 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4188 Liver		NA	a) 8 b) 9 c) 10	a) 0.017-2.18 ug/g b) 0.078-2.94 ug/g c) 0.068-2.26 ug/g Wet wt	a) 0.41 ug/g b) 0.40 ug/g c) 0.53 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4189 Liver	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4190 Lung		NA	a) 2 b) 2	a) 0.39-0.68 ug/g (wet wt) b) 0.09-0.76 ug/g (wet wt)	a) 0.54 + or - 0.21 ug/g (wet wt) b) 0.43 + or - 0.47 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4191 Lung		NA	a) 8 b) 9 c) 10	a) 0.016-0.11 ug/g b) 0.0015-0.60 ug/g c) 0.0070-4.31 ug/g Wet wt	a) 0.058 ug/g b) 0.029 ug/g c) 0.35 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4192 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4193 Muscle		NA	a) 4 b) 8	a) Not given b) Not given	a) 0.28 + or - 0.21 ug/g (wet wt) b) 0.33 + or - 0.29 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4194 Pancreas		NA	a) 5 b) 2	a) Not given b) 2.0-2.1 ug/g (wet wt)	a) 0.61 + or - 0.37 ug/g (wet wt) b) 2.1 + or - 0.07 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4195 Spinal cord		X-ray spectrom	a) 1 b) 1 c) 1	a) Not applicable b) Not applicable c) Not applicable	a) 72.3 ug/g b) 132.2 ug/g c) 14.3 ug/g Dry wt	a) Motor neuron disease patient b) Motor neuron disease patient c) Control Ventral horn tissue, autopsy No detectable Mn in 5 other patients and 11 controls Patients died of myotrophic lateral sclerosis, a) age 59 yr and b) 69 yr. Control, age 56 yr, died from lung carcinoma. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24

(NEXT PAGE)

Manganese
7439-96-5
Mn
AtW 54.9380, MP 1244 C, BP 2095 C, VP 1 mm Hg at 1292 C, 10 mm Hg at 1510 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4196 Spleen		NA	a) 5 b) 3	a) Not given b) Not given	a) 0.18 + or - 0.26 ug/g (wet wt) b) 11 + or - 9.2 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4197 Urine		AAS	a) 17 b) 15 c) 16 d) 7 e) 21 f) 23	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.95 ug/g creatinine b) 0.60 ug/g creatinine c) 0.80 ug/g creatinine d) 0.65 ug/g creatinine e) 0.25 ug/g creatinine f) 0.30 ug/g creatinine Medians	a) Boys living < 1 km from smelter b) Girls living < 1 km from smelter c) Urban boys d) Urban girls e) Rural boys f) Rural girls Estimated from graph School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4198 Aorta		NA	3	< or = 0.04 ug/g (wet wt)	0.01 + or - 0.02 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4199 Blood	Injection	AAS	6	a) Not applicable b) Not applicable c) 3.6-19.3 ng/ml	a) 17.7 ng/ml b) 8.0 ng/ml c) Not given	a) After 0.6 ml/kg of gammaglobulin, 1 patient as in a) b) 4 wk after gammoglobulin and D-penicillamine (2 gm/day), 1 patient c) 5 patients 20 yr old receiving gammaglobulin, containing 0.01% merthiolate (50.3 ug Hg/ml). Received 40-50 mg Hg/yr. Other patients receiving 0.6 ml/kg every 2-3 wk, no Hg sensitivity. Pink, scaling, pruritic palms and soles, flushed cheeks, photophobia, irritability, tremor, altered sensation in fingertips, slowed nerve conduction velocity. MERCURY; METALS; BLOOD; URINE; METAL POISONING; DISEASES; DRUG THERAPY	Matheson, D.S. Clarkson, T.W. Gelfand, E.W. 1980 Journal of Pediatrics 97(1):153-155
4200 Blood	Ingestion	AAS	339	10-167 ng/g	Not given	Estimated from graph. Ontario Indians who ate contaminated fish. BIOOD; HAIR; MERCURY; METALS; CANADA; POPULATION EXPOSURE; FISHES; DIETS	Phelps, R.W. Clarkson, T.W. Kershaw, T.G. Wheatley, B. 1980 Archives of Environmental Health 35(3):161-168
4201 Blood	Ingestion Inhalation	NA	a) 4 b) 3 c) 4	a) 1.6-17.3 ng/g b) 3.7-8.5 ng/g c) 0.6-4.8 ng/g Fresh wt	a) 5.9 ng/g b) 5.3 ng/g c) 2.9 ng/g Fresh wt	a) Occupationally exposed b) In exposed area c) Surgical patients Yugoslavians, ages 18-63 yr. Autopsies of a) and b). INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4202 Blood, serum	Ingestion		1	a) Not applicable b) Not applicable	a) 115 ug/100 ml b) 10 ug/100 ml	a) At admission b) 1 mo after dimercaprol therapy Dose, 430 mg mercuric chloride 5 yr old Mexican-American. Abdominal pain, vomiting, bloody stool. Acute renal failure BLOOD SERUM; MERCURY; METALS; CHILDREN; METAL POISONING; CASE HISTORIES	Seidel, J. 1980 Pediatrics 66(1):132-134

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4203 Brain		NA		a) < or = 7.4 ug/g (wet wt) b) < or = 3.1 ug/g (wet wt) c) < or = 9.3 ug/g (wet wt) d) 1.1-3.0 ug/g (wet wt)	a) 1.9 + or - 2.6 ug/g (wet wt) b) 1.2 + or - 1.5 ug/g (wet wt) c) 3.3 + or - 3.3 ug/g (wet wt) d) 2.2 + or - 0.9 ug/g (wet wt)	a) Males, cerebrum, 8 subjects b) Females, cerebrum, 4 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4204 Brain	Ingestion Inhalation	NA	a) 5 b) 6	a) 181-4367 ng/g b) 15-41 ng/g Fresh wt	a) 1654 ng/g b) 53 ng/g Fresh wt	a) Occupationally exposed b) In exposed area Autopsies, Yugoslavians, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4205 Brain	Ingestion	GC	9	50.1-247.1 ng/g fresh wt	104.6 ng/g fresh wt	Autopsies, regular consumers of fish containing >0.5 ppm total Hg Canadian Indians, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4206 Brain	Inhalation		1	Not applicable	2.9 ug/g	Autopsy, 7 mo old girl exposed to vapor, NA. Fever, vomiting, pallor and dyspnea, followed seven days later by apnea, bilateral pneumothorax, severe acidosis, coma, seizure, and death. Partial atelectasis with swelling, focal atypical hyperplasia, and desquamation of cells of alveoli, alveolar ducts, and bronchioles. Hyaline membranes, and intra-alveolar hemorrhages observed. Degenerative changes in kidneys, diffuse fatty changes in liver. MASSACHUSETTS; AUTOPSIES; CASE HISTORIES; INFANTS; METAL POISONING; BRAIN; KIDNEYS; LIVER; LUNGS; MERCURY; METALS; INHALATION	Moutinho, M.E. Tompkins, A.L. Rowland, T.W. Banson, B.B. Jackson, A.H. 1981 American Journal of Diseases of Children 135(1):42-44

(NEXT PAGE)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4207 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 14 ppm b) 15 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SCDIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
4208 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4209 Hair	Ingestion Inhalation Dermal	NA	2	a) Not given b) Not given c) Not given d) Not given	a) 181 ppm b) 14.9 ppm c) 16.8 ppm d) 9.80 ppm	a) Case 1 - head hair b) Case 2 - head hair c) Case 1 - pubic hair d) Case 2 - pubic hair Peak levels Dentists, 44 and 50 yr old. Finger tremor, visual deterioration, poor memory, irritability, headaches, muscle pains, anorexia, weight loss, incoordination of limbs, nausea, euphoria. SCOTLAND; METAL POISONING; HAIR; NAILS; MERCURY; METALS; OCCUPATIONAL HAZARDS; SMOKING; DENTISTRY	Symington, I.S. Cross, J.D. Dale, I.M. Lenihan, J.M.A. 1980 Journal of the Society of Occupational Medicine 30:37-39
4210 Hair		AAS	2,324	a) 0.24-23.44 ppm b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 2.19 ppm b) 1.48 ppm c) 1.43 ppm d) 1.84 ppm e) 1.42 ppm f) 2.83 ppm g) 1.60 ppm Geometric means	a) Residents of Shikoku, male and female, all ages, 1975-1976 b) 7-9 yr old males c) 7-9 yr old females d) 14-15 yr old males e) 14-15 yr old females f) 20-40 yr old males g) 20-40 yr old females b)-g) residents of Tokushima Prefecture, 1977 Unwashed samples. Agricultural area of Tokushima, Japan where Hg contamination is less than elsewhere on the island. JAPAN; ADOLESCENTS; ADULTS; AGE; CHILDREN; SEX; HAIR; POPULATION EXPOSURE; MERCURY	Shimomura, S. Kimura, A. Nakagawa, H. Takao, M. 1980 Environmental Research 22:22-30

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4211 Hair		AAS	339	2-52 ug/g	Not given	fair adjacent to scalp. Estimated from graph Ontario Indians who ate contaminated fish. BLOOD; HAIR; MERCURY; METALS; CANADA; POPULATION EXPOSURE; FISHES; DIETS	Phelps, R.W. Clarkson, T.W. Kershaw, T.G. Wheatley, B. 1980 Archives of Environmental Health 35(3):161-168
4212 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AFRICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4213 Heart		NA	a) 10 b) 4	a) < or = 1.1 ug/g (wet wt) b) < or = 0.81 ug/g (wet wt)	a) 0.29 + or - 0.36 ug/g (wet wt) b) 0.26 + or - 0.38 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4214 Heart			1	Not applicable	85.6 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

(NEXT PAGE)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4215 Kidney		NA	a) 20 b) 3	a) < or = 6.6 ug/g (wet wt) b) 0.98-3.6 ug/g (wet wt)	a) 2.0 + or - 2.4 ug/g (wet wt) b) 2.4 + or - 1.3 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4216 Kidney		NA	a) 8 b) 9 c) 4	a) 0.054-0.027 ug/g b) 0.017-0.50 ug/g c) 0.044-0.47 ug/g Wet wt Medians	a) 0.091 ug/g b) 0.10 ug/g c) 0.046 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4217 Kidney	Ingestion Inhalation	NA	a) 5 b) 6 c) 2	a) 5,500-21,000 ng/g b) 79-4,000 ng/g c) 30.1-364 ng/g Fresh wt	a) 12,224 ng/g b) 1,227 ng/g c) 197.45 ng/g Fresh wt	a) Occupationally exposed b) In exposed area c) Controls Yugoslavians, ages 14-75 yr. Autopsies. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4218 Kidney	Ingestion	GC	1	Not applicable	1223.8 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4219 Kidney	Inhalation		1	Not applicable	12.2 ug/g	Autopsy, 7 mo old girl exposed to vapor, HA. Fever, vomiting, pallor and dyspnea, followed seven days later by apnea, bilateral pneumothorax, severe acidosis, coma, seizure, and death. Partial atelectasis with swelling, focal atypical hyperplasia, and desquamation of cells of alveoli, alveolar ducts, and bronchioles. Hyaline membranes, and intra-alveolar hemorrhages observed. Degenerative changes in kidneys, diffuse fatty changes in liver. MASSACHUSETTS; AUTOPSIES; CASE HISTORIES; INFANTS; METAL POISONING; BRAIN; KIDNEYS; LIVER; LUNGS; MERCURY; METALS; INHALATION	Moutinho, M.E. Tompkins, A.L. Rowland, T.W. Banson, B.B. Jackson, A.H. 1981 American Journal of Diseases of Children 135(1):42-44
4220 Liver		NA	a) 5 b) 7	a) < or = 1.7 ug/g (wet wt) b) < or = 6.0 ug/g (wet wt)	a) 0.60 + or - 0.70 ug/g (wet wt) b) 2.3 + or - 2.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4221 Liver		NA	a) 8 b) 9 c) 4	a) 0.019-0.14 ug/g b) 0.016-0.10 ug/g c) 0.018-0.13 ug/g Wet wt	a) 0.037 ug/g b) 0.034 ug/g c) 0.037 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4222 Liver	Ingestion Inhalation	NA	a) 5 b) 6 c) 3	a) 45-791 ng/g b) 41-184 ng/g c) 18.4-48.8 ng/g Fresh wt	a) 250 ng/g b) 99 ng/g c) 34.5 ng/g Fresh wt	a) Occupationally exposed b) In exposed area c) Controls Autopsies, Yugoslavians, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4223 Liver		GC	1	Not applicable	145.7 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4224 Liver	Inhalation		1	Not applicable	5.1 ug/g	Autopsy, 7 mo old girl exposed to vapor, NA. Fever, vomiting, pallor and dyspnea, followed seven days later by apnea, bilateral pneumothorax, severe acidosis, coma, seizure, and death. Partial atelectasis with swelling, focal atypical hyperplasia, and desquamation of cells of alveoli, alveolar ducts, and bronchioles. Hyaline membranes, and intra-alveolar hemorrhages observed. Degenerative changes in kidneys, diffuse fatty changes in liver. MASSACHUSETTS; AUTOPSIES; CASE HISTORIES; INFANTS; METAL POISONING; BRAIN; KIDNEYS; LIVER; LUNGS; MERCURY; METALS; INHALATION	Moutinho, M.E. Tompkins, A.L. Rowland, T.W. Banson, B.B. Jackson, A.M. 1981 American Journal of Diseases of Children 135(1):42-44
4225 Lung		NA	a) 3 b) 2	a) 0.28-2.0 ug/g (wet wt) b) < or = 0.06 ug/g (wet wt)	a) 0.87 + or - 0.98 ug/g (wet wt) b) 0.03 + or - 0.04 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODINE; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4226 Lung			a) 8 b) 9 c) 4	a) 0.0010-0.17 ug/g b) 0.018-1.13 ug/g c) 0.012-0.097 ug/g Wet wt	a) 0.0080 ug/g b) 0.031 ug/g c) 0.038 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4227 Lung	Ingestion Inhalation	NA	a) 3 b) 5	a) 127-1580 ng/g b) 42-271 ng/g Fresh wt	a) 774 ng/g b) 131 ng/g Fresh wt	a) Occupationally exposed b) In exposed area Autopsies, Yugoslavians, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1978 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4228 Lung	Inhalation		1	Not applicable	5.2 ug/g	Autopsy, 7 mo old girl exposed to vapor, VA. Fever, vomiting, pallor and dyspnea, followed seven days later by apnea, bilateral pneumothorax, severe acidosis, coma, seizure, and death. Partial atelectasis with swelling, focal atypical hyperplasia, and desquamation of cells of alveoli, alveolar ducts, and bronchioles. Hyaline membranes, and intra-alveolar hemorrhages observed. Degenerative changes in, kidneys diffuse fatty changes in liver. MASSACHUSETTS; AUTOPSIES; CASE HISTORIES; INFANTS; METAL POISONING; BRAIN; KIDNEYS; LIVER; LUNGS; MERCURY; METALS; INHALATION	Moutinho, M.E. Tompkins, A.L. Rowland, T.W. Banson, B.B. Jackson, A.H. 1981 American Journal of Diseases of Children 135(1):42-44

(NEXT PAGE)

Mercury
7439-97-6
Hg
Atw 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4229 Muscle		NA	a) 6 b) 4	a) < or = 4.4 ug/g (wet wt) b) None detected	a) 0.77 + or - 1.8 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4230 Muscle	Ingestion Inhalation	NA	a) 3 b) 4	a) 8.5-106 ng/g b) 4.9-24 ng/g Fresh wt	a) 43.5 ng/g b) 14.0 ng/g Fresh wt	a) Occupationally exposed b) In exposed area Autopsies, Yugoslavia, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4231 Nail	Ingestion Inhalation Dermal	NA	2	a) Not given b) Not given c) Not given d) Not given	a) 498 ppm b) 313 ppm c) 17.1 ppm d) 6.5 ppm	a) Case 1, fingernail b) Case 2, fingernail c) Case 1, toenail d) Case 2, toenail Peak levels Dentists, 44 and 50 yr old. Finger tremor, visual deterioration, poor memory, irritability, headaches, muscle pains, anorexia, weight loss, incoordination of limbs, nausea, euphoria. SCOTLAND; METAL POISONING; HAIR; NAILS; MERCURY; METALS; OCCUPATIONAL HAZARDS; SMOKING; DENTISTRY	Symington, I.S. Cross, J.D. Dale, I.M. Lenihan, J.M.A. 1980 Journal of the Society of Occupational Medicine 30:37-39

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4232 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4233 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 1.90 + or - 1.80 ppm b) 0.39 + or - 0.22 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.M. Moore, C.E. 1979 *Science of the Total Environment* 13:131-140
4234 Pancreas		NA	a) 7 b) 3	a) < or = 0.45 ug/g (wet wt) b) < or = 0.81 ug/g (wet wt)	a) 0.08 + or - 0.17 ug/g (wet wt) b) 0.27 + or - 0.47 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4235 Pituitary		NA	a) 4 b) 5 c) 3	a) 19,000-64,000 ng/g b) 163-23,900 ng/g c) 6.9-63.6 ng/g Fresh wt	a) 46,000 ng/g b) 5,225.8 ng/g c) 26.8 ng/g Fresh wt	Yugoslavians, ages 14-75 yr. Autopsies. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4236 Placenta		GC	3	12.0-20.7 ng/g fresh wt	16.8 ng/g fresh wt	Residents of highly industrialized area FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4237 Spleen		NA	a) 9 b) 4	a) < or = 2.1 ug/g (wet wt) b) < or = 1.5 ug/g (wet wt)	a) 0.71 + or - 0.86 ug/g (wet wt) b) 0.43 + or - 0.72 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, H. Suzuki-Yasumoto, H. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4238 Spleen	Ingestion Inhalation	NA	a) 3 b) 2	a) 23-188 ng/g b) 11.8-20 ng/g Fresh wt	a) 79 ng/g b) 15.9 ng/g Fresh wt	a) Occupationally exposed b) In exposed area Autopsies, Yugoslavia, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4239 Spleen		GC	1	Not applicable	80.4 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4240 Thyroid gland	Inhalation Ingestion	NA	a) 5 b) 6 c) 3 d) 6	a) 21,300-141,000 ng/g b) 69-26,500 ng/g c) 2.5-15 ng/g d) 7.1-507 ng/g Fresh wt	a) 51,222 ng/g b) 8842.5 ng/g c) 10.2 ng/g d) 134 ng/g Fresh wt	a) Occupationally exposed b) In exposed area c) Controls d) Surgical patients, one of whom worked with Hg and had highest tissue level. Yugoslavians, ages 14-75 yr. Autopsies of a)-c). INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1978 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4241 Urine	Ingestion		1	a) Not applicable b) Not applicable	a) 908 ug/l b) 1330 ug/l	a) At admission b) Hospital day 2 Dose, 860 mg mercuric chloride 4.5 yr old Mexican-American. Vomiting, abdominal pain, diarrhea. Bloody stools, proteinuria URINE; MERCURY; METALS; CHILDREN; METAL POISONING; CASE HISTORIES	Seidel, J. 1980 Pediatrics 66(1):132-134
4242 Urine	Injection	AAS	6	a) Not applicable b) Not applicable c) 23-66 ng/ml	a) 63 ng/ml b) 138 ng/ml c) Not given	a) After 0.6 ml/kg gammaglobulin, 1 patient as in a) b) After 2 gm/day D-penicillamine, 1 patient, peak at 5 days c) 5 patients a) and b) estimated from graph 20 yr old receiving gammaglobulin, containing 0.01% merthiolate (50.3 ug Hg/ml). Received 40-50 mg Hg/yr. Other patients receiving 0.6 ml/kg every 2-3 wk, no Hg sensitivity. Pink, scaling, pruritic palms and soles, flushed cheeks, photophobia, irritability, tremor, altered sensation in fingertips, slowed nerve conduction velocity. MERCURY; METALS; BLOOD; URINE; METAL POISONING; DISEASES; DRUG THERAPY	Matheson, D.S. Clarkson, T.W. Gelfand, E.W. 1980 Journal of Pediatrics 97(1):153-155
4243 Urine		AAS	a) 6 b) 6	a) 5.80-25.00 ug/24 hr b) <1.0-2.38 ug/24 hr	a) 13.65 ug/24 hr b) Not given	a) Kawasaki disease patients b) Controls 5-18 yr olds, with Kawasaki disease, and controls. Fever, conjunctivitis, pharyngitis, erythema, truncal exanthem, cervical adenopathy. MERCURY; METALS; METAL POISONING; CHILDREN; URINE; DISEASES; CASE HISTORIES	Orlowski, J.P. Mercer, R.D. 1980 Pediatrics 66(4):633-636

(NEXT PAGE)

Mercury
7439-97-6
Hg
AtW 200.59, MP -38.87 C, BP 356.72 C, VP 2X10(E-3) mm Hg at 25 C, 100 mm Hg at 260 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4244 Urine		AAS	26	a) 0-15 ug/l b) 16-30 ug/l c) 31-45 ug/l d) 46-60 ug/l e) > or = 61 ug/l	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 3 patients b) 4 patients c) 7 patients d) 9 patients e) 3 patients Hg dosage of 4-734 mg (mean 157 mg) (as preservative in immunoglobulin G), over 6 mo-17 yr (mean 6.5 yr). 4-67 yr olds with hypogammaglobulinemia. MERCURY; METALS; URINE; DISEASES; CHEMOTHERAPY	Haency, M.R. Carter, G.F. Yeoman, W.B. Thompson, R.A. 1979 British Medical Journal 2:12-14
4245 Urine			a) 70 b) 60	a) 0.004-0.565 ug/hr b) 0.007-0.485 ug/hr	a) 0.076 + or - 0.012 ug/hr b) 0.110 + or - 0.020 ug/hr (S.E.)	a) Controls b) Residents of polluted area Women, mean age 82.3 yr, from Cd-polluted area (Liege), and controls, mean age 81.1 yr, from Charleroi, Belgium. BLOOD; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; ZINC; METALS; BELGIUM; AGE; POPULATION EXPOSURE; INDUSTRIAL POLLUTION; SHELTERS; KIDNEY DISEASES	Lauwerys, R. Roels, H. Bernard, A. Buchet, J.P. 1980 International Archives of Occupational and Environmental Health 45:271-274
4246 Urine	Inhalation	AAS		a) 0.007-0.614 ug/hr b) 0.005-1.401 ug/hr c) 0.004-0.565 ug/hr	a) 0.065 ug/hr b) 0.057 ug/hr c) 0.044 ug/hr Geometric	a) Residents of Liege (most polluted area) b) Residents of Brussels (less polluted area) c) Residents of Charleroi (control area) Means and cumulative frequency distributions not much different between the three groups Healthy subjects >60 yr old, residents of the same areas 25 yr, Belgium BELGIUM; ADULTS; AGE; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; METALS; ZINC; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS	Roels, H.A. Lauwerys, R.R. Buchet, J-P Bernard, A. 1981 Environmental Research 24:117-130

Mercury(1+), methyl-, ion (8 CI)
Mercury(1+), methyl- (9 CI)
22967-92-6
C-H3-Hg
MW 215.63

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4247 Blood	Inhalation	NA GC	11, 17 controls	a) 67-518 ng/g b) 100-154 ng/g c) 8.5-69.5 ng/g d) 1.9-13.7 ng/g Dry wt	a) 227 ng/g b) 129 ng/g c) 27.0 ng/g d) 5.7 ng/g Dry wt	a) Total mercury, dentists b) Total mercury, non-exposed controls c) Methylmercury, dentists d) Methylmercury, non-exposed controls Significant difference at P < 0.005 level. UNITED KINGDOM; ADULTS; BLOOD; DENTISTRY; MERCURY; MERCURY ORGANIC COMPOUNDS; BIOACCUMULATION; OCCUPATIONAL HAZARDS	Cross, J.D. Dale, I.M. Goolvard, L. Lenihan, J.M.A. Smith, H. 1978 Lancet 2(8084):312-313

(NEXT PAGE)

Mercury(1+), methyl-, ion (8 CI)
Mercury(1+), methyl- (9 CI)
22967-92-6
C-H3-Hg
BN 215.63

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4248 Brain	Ingestion Inhalation	NA	7	2-26 ng/g fresh wt	9 ng/g fresh wt	Occupationally exposed to inorganic Hg or living in exposed area Autopsies, Yugoslavians, ages 19-75 yr INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4249 Brain	Ingestion	GC	9	17.9-164.0 ng/g fresh wt	72.0 ng/g fresh wt	Autopsies, regular consumers of fish containing >0.5 ppm total Hg Canadian Indians, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4250 Hair	Ingestion Inhalation	NA	7	270-1030 ng/g fresh wt	538 ng/g fresh wt	Occupationally exposed to inorganic Hg or living in exposed area Autopsies, Yugoslavians, ages 19-75 yr. INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4251 Heart	Ingestion	GC	1	Not applicable	57.6 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4252 Kidney	Ingestion Inhalation	NA	7	6-26 ng/g fresh wt	13 ng/g fresh wt	Occupationally exposed to inorganic Hg or living in exposed area Autopsies, Yugoslavians, ages 19-75 yr INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973

(NEXT PAGE)

Mercury(1+), methyl-, ion (8 CI)
Mercury(1+), methyl- (9 CI)
22967-92-6
C-H3-Hg
MW 215.63

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4253 Kidney	Ingestion	GC	1	Not applicable	78.1 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indians, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4254 Liver	Ingestion Inhalation	NA	7	10-28 ng/g fresh wt	18 ng/g fresh wt	Occupationally exposed to inorganic Hg or living in exposed area Autopsies, Yugoslavians, ages 19-75 yr INDUSTRIAL POLLUTION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SURGERY; MERCURY; MERCURY ORGANIC COMPOUNDS; YUGOSLAVIA; AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; SPLEEN; THYROID GLANDS	Kosta, L. Zelenko, V. Ravnik, V. Levstek, M. Dermelj, M. Byrne, A.R. 1974 Comparative Studies of Food and Environmental Contamination. Proceedings of a Symposium held in Otaniemi, Finland, August 27-31, 1973
4255 Liver	Ingestion	GC	1	Not applicable	95.5 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4256 Placenta		GC	3	15.6-28.0 ng/g fresh wt	22.3 ng/g fresh wt	Methyl predominant form (56.9%) in specimens Residents of highly industrialized area FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4257 Spleen	Ingestion	GC	1	Not applicable	106.5 ng/g fresh wt	Autopsy, regular consumer of fish containing >0.5 ppm total Hg Canadian Indians, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

Mesitylene (8 CI)
Benzene, 1,3,5-trimethyl- (9 CI)
108-67-8
C9-H12
MW 120.2, MP -44.8 C, BP 164.7 C, VP 10 mm Hg at 47.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4258 Breath		GC/MS	8	Not detected-0.81 ug/hr	0.12 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4259 Breath		GC-MS	54 (387 samples)	Not given	0.842 ng/l Geometric	Measured at 25 C and 760 mm Hg 32.6% occurrence Lower and upper one-Sigma limits 0.327 and 2.16 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Methane
74-82-8
C-H4
MW 16.05, MP -182.6 C, BP -161.5 C, VP 400 mm Hg at -168.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4260 Breath		GC/MS	43	0-32 ppm	5.1 ppm	Corrected for level in inhaled air Healthy adults SWEDEN; ADULTS; MEASUREMENT METHODS; METHANOL	Jansson, B.O. Larsson, B.T. 1969 Journal of Laboratory and Clinical Medicine 74(6):961-966

Methane, dichloro-
75-09-2
C-H2-Cl2
MW 84.94, MP -95.1 C, BP 39.75 C, VP 380 mm Hg at 22 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4261 Breath		GC/MS	8	Not detected-340.0 ug/hr	55.0 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Methane, dichlorodifluoro-
75-71-8
C-Cl2-F2
MW 120.92, MP -158 C, BP -29 C, VP 5 atm at 16.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4262 Adipose	Inhalation	GC	1	Not applicable	13 ug/g wet wt	Cuentum. Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4263 Bile	Inhalation	GC	1	Not applicable	13 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4264 Blood	Inhalation	GC	1	Not applicable	1.2 ug/g wet wt	Heart blood. Autopsy sample. Death 1.5 hr after, cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4265 Blood	Inhalation	Radiometry	1	0.5-0 ug/ml	Not applicable	18 and 54 min after 46.4 mg/min, 16.75 min. Initial measurement, .05 ug/ml at 0 time. Estimated from graph. BLOOD; FLUORINE COMPOUNDS; ADULTS; MEASUREMENT METHODS	Adir, J. Blake, D.A. Mergner, G.M. 1975 Journal of Clinical Pharmacology 15:760-770

(NEXT PAGE)

Methane, dichlorodifluoro-
75-71-8
C-C12-F2
MW 120.92, MP -158 C, BP -29 C, VP 5 atm at 16.1 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4266 Brain	Inhalation	GC	1	Not applicable	3.5 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4267 Heart	Inhalation	GC	1	Not applicable	180 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4268 Kidney	Inhalation	GC	1	Not applicable	5.8 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4269 Liver	Inhalation	GC	1	Not applicable	23 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4270 Lung	Inhalation	GC	1	Not applicable	94 ug/g wet wt	Autopsy. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4271 Muscle	Inhalation	GC	1	Not applicable	0.5 ug/g wet wt	Iliopsoas. Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551

Methane, dichlorofluoro-
75-43-4
C-H-Cl2-F
MW 103, MP -135 C, BP 8.9 C, VP 2 atm at 28.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4272 Breath		GC/MS	8	Not detected-0.062 ug/hr	0.025 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Methane, dichloronitro-
7119-89-3
C-H-Cl2-N-O2
MW 129.93, BP 107 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4273 Breath		GC-MS	54 (387 samples)	Not given	64.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 20.5% occurrence Lower and upper one-Sigma limits 21.8 and 188.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Riddly-controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Methane, trichlorofluoro-
75-69-4
C-Cl3-F
MW 137.38, MP -111 C, BP 23.7 C at 760 mm Hg, 6.8 C at 400 mm Hg, -9.1 C at 200 mm Hg, -23.0 C at 100 mm Hg, -32.3 C at 60 mm Hg, -39.0 C at 40 mm Hg, -49.7 C at 20 mm Hg, -59.0 C at 10 mm Hg, -67.6 C at 5 mm Hg, 84.3 C at 1.0 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4274 Adipose	Inhalation	GC	1	Not applicable	1.7 ug/g wet wt	Cause: Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4275 Bile	Inhalation	GC	1	Not applicable	3.3 ug/g wet wt	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551

(NEXT PAGE)

Methane, trichlorofluoro-
75-69-4
C-C13-F
MW 137.38, MP -111 C, BP 23.7 C at 760 mm Hg, 6.8 C at 400 mm Hg, -9.1 C at 200 mm Hg, -23.0 C at 100 mm Hg, -32.3 C at 60 mm Hg, -39.0 C at 40 mm Hg, -49.7 C at 20 mm Hg, -59.0 C at 10 mm Hg, -67.6 C at 5 mm Hg, 84.3 C at 1.0 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4276 Blood	Inhalation	GC	1	Not applicable	0.6 ug/g wet wt	Heart blood. Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4277 Blood	Inhalation	Radiometry	2	0.8-.05 ug/ml	Not applicable	0.25 and 1.5 hr after 35.6 mg/min, 13.75 min. Initial measurement, .05 ug/ml at 0 time. Estimated from graph. Subjects weighing 63.0 and 95.0 kg BLOOD; FLUORINE COMPOUNDS; ADULTS; MEASUREMENT METHODS	Adir, J. Blake, D.A. Mergner, G.M. 1975 Journal of Clinical Pharmacology 15:760-770
4278 Brain	Inhalation	GC	1	Not applicable	0.5 ug/g wet wt	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4279 Breath		GC/MS	8	Not detected-0.041 ug/hr	0.011 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4280 Heart	Inhalation	GC	1	Not applicable	49 ug/g wet	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4281 Kidney	Inhalation	GC	1	Not applicable	1.1 ug/g wet wt	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551

(NEXT PAGE)

Methane, trichlorofluoro-
75-69-4
C-C13-F
MW 137.38, MP -111 C, BP 23.7 C at 760 mm Hg, 6.8 C at 400 mm Hg, -9.1 C at 200 mm Hg, -23.0 C at 100 mm Hg, -32.3 C at 60 mm Hg, -39.0 C at 40 mm Hg, -49.7 C at 20 mm Hg, -59.0 C at 10 mm Hg, -67.6 C at 5 mm Hg, 84.3 C at 1.0 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4282 Liver	Inhalation	GC	1	Not applicable	2.9 ug/g wet wt	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4283 Lung	Inhalation	GC	1	Not applicable	35 ug/g wet wt	Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551
4284 Muscle	Inhalation	GC	1	Not applicable	0.5 ug/g wet wt	Iliopsoas. Autopsy sample. Death 1.5 hr after sniffing cooking spray. Male, age 13 yr, ht 62.5 in. AUTOPSIES; ADIPOSE TISSUE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; MUSCLES; CHLORINATED HYDROCARBONS; FLUORINE COMPOUNDS	Standefer, J.C. 1975 Journal of Forensic Sciences 20(3):548-551

Methanearsonic acid (8 CI)
Arsonic acid, methyl- (9 CI)
124-58-3
C-H5-As-O3
MW 139.96, MP 161 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4285 Urine			a) 9 b) 14	a) Not given b) Not given	a) 1.7 ug/g creatinine b) 5.2 ug/g creatinine	a) Rural children b) Children near smelter School-age children living near Pb smelter in Belgium. Controls from rural and urban areas. MANGANESE; CADMIUM; ARSENIC; ARSENIC ORGANIC COMPOUNDS; CHILDREN; INDUSTRIAL ATMOSPHERES; SMELTERS; METALS; BLOOD; URINE; BELGIUM; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Buchet, J.P. Roels, H. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Lafontaine, A. Verduyn, G. 1980 Environmental Research 22:95-108

Methanol
67-56-1
C-H4-O
MW 32.04, MP -97.8 C, BP 64.7 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4286 Breath		GC/MS		0.27-3.39 ppm	1.05 ppm	Corrected for level in inhaled air Healthy adults SWEDEN; ADULTS; MEASUREMENT METHODS; METHANOL	Jansson, B.O. Larsson, B.T. 1969 Journal of Laboratory and Clinical Methods 74(6):961-966
4287 Breath		GC/MS	8	Not detected-20.0 ug/hr	3.7 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4288 Breath		GC-MS	54 (387 samples)	Not given	0.549 ng/l Geometric	Measured at 25 C and 760 mm Hg 3.6% occurrence Lower and upper one-Sigma limits 0.151 and 1.99 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Methyl disulfide (8 CI)
Disulfide, dimethyl (9 CI)
624-92-0
C2-H6-S2
MW 94.2, BP 109.7 C, VP 28.6 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4289 Breath		GC/MS	8	Not detected-0.60 ug/hr	0.08 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Methyl disulfide (8 CI)
Disulfide, dimethyl (9 CI)
624-92-0
C2-H6-S2
MW 94.2, BP 109.7 C, VP 28.6 mm Hg at 25 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4290 Breath		GC-MS	54 (387 samples)	Not given	1.94 ng/l Geometric	Measured at 25 C and 760 mm Hg 33.1% occurrence Lower and upper one-Sigma limits 0.487 and 7.74 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Methyl sulfide (8 CI)
Methane, thiobis- (9 CI)
75-18-3
C2-H6-S
MW 62.13, MP -83.2 C, BP 37.5-38 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4291 Breath		GC/MS	8	Not detected-53.0 ug/hr	17.6 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4292 Breath		GC-MS	54 (387 samples)	Not given	0.99 ng/l Geometric	Measured at 25 C and 760 mm Hg 41.6% occurrence Lower and upper one-Sigma limits 0.42 and 2.30 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Molybdenum
7439-98-7
Mo
AtW 95.94, MP 2622 C, BP 4825 C (approx), VP 1 mm Hg at 3300 C, 10 mm Hg at 3770 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4293 Blood, whole			48	0.50-15.73 ug/100 ml	Not given	Range of means, multiple samples from 9 collection sites in the U.S. SELENIUM; MOLYBDENUM; VANADIUM; BLOOD; SEX; SOUTH DAKOTA; NEW YORK; WYOMING; MONTANA; OHIO; MISSISSIPPI; TEXAS; NORTH DAKOTA; WASHINGTON; CALIFORNIA; ARIZONA; INDIANA; LOUISIANA; ARKANSAS; FLORIDA; VERMONT; TRACE ELEMENTS	Allaway, W.H. Kubota, J. Losee, F. Roth, M. 1968 Archives of Environmental Health 16:342-348
4294 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4295 Kidney		NA	a) 8 b) 9 c) 10	a) 0.072-0.67 ug/g b) 0.040-0.61 ug/g c) 0.069-0.24 ug/g Wet wt	a) 0.22 ug/g b) 0.19 ug/g c) 0.10 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Molybdenum
7439-98-7
Mo
AtW 95.94, MP 2622 C, BP 4825 C (approx), VP 1 mm Hg at 3300 C, 10 mm Hg at 3770 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4296 Liver			a) 8 b) 9 c) 10	a) 0.34-1.24 ug/g b) 0.21-1.69 ug/g c) 0.22-1.33 ug/g Wet wt	a) 0.54 ug/g b) 0.65 ug/g c) 0.49 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4297 Lung		NA	a) 8 b) 9 c) 10	a) 0.011-0.27 ug/g b) 0.014-0.15 ug/g c) 0.020-0.12 ug/g Wet wt	a) 0.030 ug/g b) 0.027 ug/g c) 0.053 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

Naphthalene
91-20-3
C10-H8
MW 128.16, MP 80.1 C, BP 217.9 C, VP 1 mm Hg at 52.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4298 Breath		GC/MS	8	Not detected-2.4 ug/hr	0.5 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Naphthalene
91-20-3
C10-H8
MW 128.16, MP 80.1 C, BP 217.9 C, VP 1 mm Hg at 52.6 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4299 Breath		GC-MS	54 (387 samples)	Not given	0.772 ng/l Geometric	Measured at 25 C and 760 mm Hg 98.9% occurrence Lower and upper one-Sigma limits 0.335 and 1.78 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Naphthalene, dimethyl-
28804-88-8
C12-H12
MW 156.23, MP 7.66 C, BP 268 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4300 Breath		GC-MS	54 (387 samples)	Not given	0.079 ng/l Geometric	Measured at 25 C and 760 mm Hg 36.2% occurrence Lower and upper one-Sigma limits 0.029 and 0.22 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Naphthalene, methyl-
1321-94-4
C11-H10
MW 142, MP -22 C, BP 244.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4301 Breath		GC/MS	8	Not detected-2.3 ug/hr	0.3 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Naphthalene, methyl-
1321-94-4
C11-H10
MW 142, MP -22 C, BP 244.6 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4302 Breath		GC-MS	54 (387 samples)	Not given	0.113 ng/l Geometric	Measured at 25 C and 760 mm Hg 39.3% occurrence Lower and upper one-Sigma limits 0.038 and 0.338 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Nickel
7440-02-0
Ni
AtW 58.71, MP 1455 C, BP 2837 C, VP 10 mm Hg at 2090 C, 100 mm Hg at 2370 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4303 Blood, plasma						Review. Problems in risk analysis of cancer in Ni and Cr industry are presented. Various compounds are cited which cause cancer in practical exposure situations. The need for dose registration is emphasized. NORWAY; CARCINOMAS; BLOOD PLASMA; URINE; INDUSTRIAL HYGIENE; REVIEW; CHROMIUM; METALS; NICKEL; CARCINOGEN; INDUSTRIAL ATMOSPHERES; INDUSTRIES; OCCUPATIONAL HAZARDS; NEOPLASMS	Norseth, T. 1980 Journal of Toxicology and Environmental Health 6(5/6):1219-1227
4304 Blood, plasma	Inhalation	AAS	a) 1 b) 1	a) 3.0-4.0 ug/l b) 2.5-9.5 ug/l	a) Not given b) Not given	a) Worker exposed to dust of insoluble Ni compounds. Minimal diurnal variation b) Worker exposed to aeroscls of soluble Ni salts. Gradual rise as day progressed Workers in roasting-smelting and electrolytic departments in Norway. METALS; NICKEL; NORWAY; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS; BLOOD PLASMA; URINE	Hogetveit, A.C. Barton, R.T. Andersen, I. 1980 Journal of Occupational Medicine 22(9):597-600
4305 Blood, plasma		AAS	6	a) 3.2-11.1 ug/l b) 4.9-8.2 ug/l c) 1.4-3.4 ug/l	a) 7.02 + or - 3.08 ug/l b) 6.48 + or - 1.36 ug/l c) 2.13 + or - 0.58 ug/l	a) Protein-precipitation sample preparation b) Acid-digestion sample preparation c) Protein-precipitation sample preparation Nickel refinery workers and 15 healthy, unexposed controls, ages 22-62 yr. NORWAY; ADULTS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; BIOACCUMULATION; INDUSTRIAL EMISSIONS; NICKEL; METALS	Anderson, I. Torjussen, W. Zachariasen, H. 1978 Clinical Chemistry 24(7):1198-1202

(NEXT PAGE)

Nickel
7440-02-0
Ni
AtW 58.71, MP 1455 C, BP 2837 C, VP 10 mm Hg at 2090 C, 100 mm Hg at 2370 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4306 Blood, serum	Ingestion	AAS	8	a) 0.3-3.8 ug/l b) 4.5-105.0 ug/l	a) 1.60 + or - 0.93 ug/l b) 33.9 + or - 43.9 ug/l	a) Baseline values b) Peaks, 2.5 hr after 5.6 mg as sulfate Healthy 21-32 yr old no metal hypersensitivity SWEDEN; ADULTS; BLOOD; BLOOD SERUM; URINE; NICKEL	Christensen, O.B. Lagesson, V. 1981 Annals of Clinical and Laboratory Science 11(2):119-125
4307 Blood, whole	Ingestion	AAS	8	a) 0.4-6.5 ug/l b) 2.9-79.0 ug/l	a) 3.29 + or - 2.33 ug/l b) 25.7 + or - 31.5 ug/l	a) Baseline values b) Peaks, 2.5 hr after 5.6 mg as sulfate Healthy 21-32 yr old no metal hypersensitivity SWEDEN; ADULTS; BLOOD; BLOOD SERUM; URINE; NICKEL	Christensen, O.B. Lagesson, V. 1981 Annals of Clinical and Laboratory Science 11(2):119-125
4308 Breath	Inhalation	PIXE	1	Not given	23.8 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4309 Epitheliu m						Review. Problems in risk analysis of cancer in Ni and Cr industry are presented. Various compounds are cited which cause cancer in practical exposure situations. The need for dose registration is emphasized. NORWAY; CARCINOMAS; BLOOD PLASMA; URINE; INDUSTRIAL HYGIENE; REVIEW; CHROMIUM; METALS; NICKEL; CARCINOGEN; INDUSTRIAL ATMOSPHERES; INDUSTRIES; OCCUPATIONAL HAZARDS; NEOPLASMS	Norseth, T. 1980 Journal of Toxicology and Environmental Health 6(5/6):1219-1227
4310 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Nickel
7440-02-0
Ni
AtW 58.71, MP 1455 C, BP 2837 C, VP 10 mm Hg at 2090 C, 100 mm Hg at 2370 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4311 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4312 Urine						Review. Problems in risk analysis of cancer in Ni and Cr industry are presented. Various compounds are cited which cause cancer in practical exposure situations. The need for dose registration is emphasized. NORWAY; CARCINOMAS; BLOOD PLASMA; URINE; INDUSTRIAL HYGIENE; REVIEW; CHROMIUM; METALS; NICKEL; CARCINOGEN; INDUSTRIAL ATMOSPHERES; INDUSTRIES; OCCUPATIONAL HAZARDS; NEOPLASMS	Norseth, T. 1980 Journal of Toxicology and Environmental Health 6(5/6):1219-1227
4313 Urine		AAS	a) 35 b) 18 c) 68 d) 33 e) 32 f) 11	a) <10-90 ug/l b) <10-80 ug/l c) 10-200 ug/l d) 20-130 ug/l e) 30-180 ug/l f) 30-120 ug/l	a) 28 + or - 10 ug/l b) 30 + or - 20 ug/l c) 65 + or - 42 ug/l d) 52 + or - 31 ug/l e) 68 + or - 38 ug/l f) 70 + or - 30 ug/l	a) Controls b) Researchers, minimal Ni exposure c) Product Workers, soluble Ni exposure d) Calciners, Ni dust exposure e) Extractors, exposed to dust and carbonyl gas f) Powder plant, Ni powder and Ni carbonyl gas exposure Values corrected to 1.6 g/l creatinine. Data also for atmospheric dust. Ni refinery workers, 19-64 yr old, petro-chemical workers as controls. NICKEL; METALS; INDUSTRIAL PLANTS; DUST; URINE; UNITED KINGDOM; OCCUPATIONAL HAZARDS	Morgan, L.G. Rouge, P.J.C. 1979 Annals of Occupational Hygiene 22:311-317
4314 Urine	Inhalation	AAS	a) 1 b) 1	a) 13-54 ug/l b) 25-47 ug/l	a) Not given b) Not given	a) Worker exposed to dust of insoluble Ni compounds. Peak at 10 am b) Worker exposed to aerosols of soluble Ni salts. Peak at 11 am Diurnal variation in both. Workers in roasting-smelting and electrolytic departments in Norway. METALS; NICKEL; NORWAY; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS; PICCD PLASMA; URINE	Hogetveit, A.C. Barton, R.T. Andersen, I. 1980 Journal of Occupational Medicine 22(9):597-600

(NEXT PAGE)

Nickel
7440-02-0
Ni
AtW 58.71, MP 1455 C, BP 2837 C, VP 10 mm Hg at 2090 C, 100 mm Hg at 2370 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4315 Urine		AAS	15	1.9-9.6 ug/l	4.85 + or - 1.9 ug/l	Protein-precipitation sample preparation Healthy 29-67 yr olds NORWAY; ADULTS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; BIOACCUMULATION; INDUSTRIAL EMISSIONS; NICKEL; METALS	Anderson, I. Torjussen, W. Zachariasen, H. 1978 Clinical Chemistry 24(7):1198-1202
4316 Urine	Ingestion	AAS	8	a) 0.3-3.4 ug b) 17.7-202.0 ug	a) 1.56 + or - 1.09 ug b) 69.56 + or - 59.4 ug	a) Baseline values b) After 5.6 mg as sulfate 12-hr excretions Healthy 21-32 yr old no metal hypersensitivity SWEDEN; ADULTS; BLOOD; BLOOD SERUM; URINE; NICKEL	Christensen, O.B. Lagesson, V. 1981 Annals of Clinical and Laboratory Science 11(2):119-125

Hcnane
111-84-2
C9-H20
MW 128.25, MP -53.7 C, BP 150.7 C, VP 10 mm Hg at 38.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4317 Breath		GC-MS	54 (387 samples)	Not given	0.308 ng/l Geometric	Measured at 25 C and 760 mm Hg 36.7% occurrence Lower and upper one-Sigma limits 0.069 and 1.37 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

o-Xylene (8 CI)
Benzene, 1,2-dimethyl- (9 CI)
95-47-6
C8-H10
MW 106.16, MP -25 C, BP 144 C, VP 10 mm Hg at 32.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4318 Blood	Inhalation	GC		0.11-0.21 mg/l	0.18 mg/l	Measured at end of working day. Mean air levels 10-13 ppm. Laboratory assistants working with organic solvents. OCCUPATIONAL HAZARDS; GERMANY; ADULTS; BLOOD; CARCINOGEN	Angerer, J. Lehnert, G. 1979 International Archives of Occupational and Environmental Health 43:154-150

(NEXT PAGE)

o-Xylene (8 CI)
Benzene, 1,2-dimethyl- (9 CI)
95-47-6
C8-H10
MW 106.16, MP -25 C, BP 144 C, VP 10 mm Hg at 32.1 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4319 Breath		GC-MS	54 (387 samples)	Not given	1.0 ng/l Geometric	Measured at 25 C and 760 mm Hg 39.5% occurrence Lower and upper one-Sigma limits 0.36 and 2.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234
4320 Urine	Ingestion Inhalation	HPLC	a) 4 b) 4 c) 2	a) Not given b) Not given c) 0-0.14 ng/ml	a) 0.0037 + or - 0.0007 mmol/kg (1% of dose) b) Trace c) Not given	a) o-Toluic acid glucuronide (metabolite), 20 hr excretion after 0.368 mmol/kg o-xylene, oral. Peak in 3-6 hr b) o-Toluic acid glucuronide, after 3 hr exposure to 138 ppm o-xylene c) p-methylhippuric acid (metabolite), after occupational exposure to xylene. Estimated from graph Volunteers, mean age 53 yr (oral), and 46 yr (vapor). Painters in shipbuilding yard, mean age 32 yr. URINE; METABOLITES; RATS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; METHYL RADICALS; PAINTS; INHALATION	Ogata, M. Yamazaki, Y. Sugihara, R. Shimada, Y. Meguro, T. 1980 International Archives of Occupational and Environmental Health 46:127-139

Octane
111-65-9
C8-H18
MW 114.23, MP 56.8 C, BP 125.8 C, VP 10 mm Hg at 19.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4321 Breath		GC-MS	54 (387 samples)	Not given	0.296 ng/l Geometric	Measured at 25 C and 760 mm Hg 27.7% occurrence Lower and upper one-Sigma limits 0.079 and 1.10 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Octanoic acid, pentadecafluoro-, ammonium salt
3825-26-1
C8-H-F15-O2.H3-N
MW 430.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4322 Urine		GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 387 ug/24 hr b) 175 ug/24 hr c) 80 ug/24 hr	a) 1 wk b) 3 mo c) 14 mo Interval following transfer to location free of fluorochemicals Exposed worker at ammonium perfluorooctanoate production plant. FLUORINE; INDUSTRIAL PLANTS; BLOOD SERUM; OCCUPATIONAL HAZARDS; RATS; FLUORIDE; FLUORINE COMPOUNDS; INDUSTRIAL ATMOSPHERES	Ubel, F.A. Sorenson, S.D. Roach, D.E. 1980 American Industrial Hygiene Association Journal 41:584-589

Octyne
32073-03-3
C8-H14
MW 110.2, MP -79.3 C, BP 125.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4323 Breath		GC/MS	8	Not detected-1.8 ug/hr	0.2 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

p-Cresol, 2,6-di-tert-butyl- (8 CI)
Phenol, 2,6-bis(1,1-dimethylethyl)-4-methyl- (9 CI)
128-37-0
C15-H24-O
MW 220.3, MP 70 C, BP 265 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4324 Breath		GC-MS	54 (387 samples)	Not given	1.63 ng/l Geometric	Measured at 25 C and 760 mm Hg 97.2% occurrence Lower and upper one-Sigma limits 0.327 and 8.12 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

p-Cymen-7-ol (8 CI)
Benzenemethanol, 4-(1-methylethyl)- (9 CI)
536-60-7
C10-H14-O
MW 150.22, MP 28 C, BP 249 C, VP 1 mm Hg at 74.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4325 Breath		GC-MS	54 (387 samples)	Not given	0.261 ng/l Geometric	Measured at 25 C and 760 mm Hg 16.5% occurrence Lower and upper one-Sigma limits 0.036 and 1.91 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

p-Dioxane (8 CI)
1,4-Dioxane (9 CI)
123-91-1
C4-H8-O2
MW 88.10, MP 11.80 C, BP 101.1 C, VP 40 mm Hg at 25.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4326 Breath		GC/MS	8	Not detected-0.41 ug/hr	0.05 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4327 Breath		GC-MS	54 (387 samples)	Not given	0.253 ng/l Geometric	Measured at 25 C and 760 mm Hg 24.8% occurrence Lower and upper one-Sigma limits 0.047 and 1.37 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

p-Mentha-1,8-diene (8 CI)
Cyclohexene, 1-methyl-4-(1-methylethenyl)- (9 CI)
138-86-3
C10-H16
MW 136.23, BP 174.6 C, VP 1 mm Hg at 14.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4328 Breath		GC-MS	54 (387 samples)	Not given	2.9 ng/l Geometric	Measured at 25 C and 760 mm Hg 99.5% occurrence Lower and upper one-Sigma limits 1.07 and 7.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

p-Phenylenediamine (8 CI)
1,4-Benzenediamine (9 CI)
106-50-3
C6-H8-N2
MW 108.7 C, MP 146 C, BP 267 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4329 Urine						Review. Local and systemic effects relating to hair dye formulation, ingredient tests, and experiences in man and animals. Contact dermatitis in users, their spouses, dentists or others in contact with recently dyed hair. Immediate hypersensitivity (urticaria) reported. ADULTS; DERMATITIS; NEOPLASMS; URINE; IN VITRO ANALYSIS; IN VIVO ANALYSIS; REVIEW; DYES; CARCINOGEN; COSMETICS; GENETIC EFFECTS; HEALTH HAZARDS; METABOLISM; METABOLITES	Marzulli, F.N. Green, S. Maibach, H.I. 1978 Journal of Environmental Pathology and Toxicology 1:509-530

p-Tolualdehyde (8 CI)
Benzaldehyde, 4-methyl- (9 CI)
104-87-0
C8-H8-O
MW 120.16, BP 204-205 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4330 Breath		GC-MS	54 (387 samples)	Not given	3.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 5.7% occurrence Lower and upper one-Sigma limits 0.7 and 15.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

p-Xylene (8 CI)
Benzene, 1,4-dimethyl- (9 CI)
106-42-3
C8-H10
MW 106.16, MP 13-14 C, BP 137-138 C, VP 10 mm Hg at 27.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4331 Blood	Inhalation	GC	4	1.04-1.49 mg/l	1.3075 mg/l	As para + meta, measured at end of working day. Mean air levels 56-68 ppm. OCCUPATIONAL HAZARDS; GERMANY; ADULTS; BLOOD; CARCINOGEN	Angerer, J. Lehnert, G. 1979 International Archives of Occupational and Environmental Health 43:154-150
4332 Breath		GC/MS	8	Not detected-0.003 ug/hr	0.0004 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4333 Breath		GC-MS	54 (387 samples)	Not given	3.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 99.7% occurrence Lower and upper one-Sigma limits 1.2 and 7.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Palladium
7440-05-3
Pd
AtW 106.4, MP 1555 C, BP 3167 C, VP 1 mm Hg at 1470 C, 10 mm Hg at 2290 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4334 Adipose		AAS	10	Not given	<1.6 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Caaann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.

(NEXT PAGE)

Palladium
7440-05-3
Pd
AtW 106.4, MP 1555 C, BP 3167 C, VP 1 mm Hg at 1970 C, 10 mm Hg at 2290 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4335 Blood		AAS	283	a) Not given b) Not given c) Not given	a) <0.9 ug/100 ml b) <0.01 ug/100 ml c) <0.1 ug/100 ml	a) Los Angeles and Lancaster residents, individual values b) Los Angeles residents, composite sample c) Lancaster residents, composite sample Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-16, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4336 Hair		AAS	283	Not given	<0.02 ug/g	Los Angeles and Lancaster residents Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-16, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4337 Kidney		AAS	10	Not given	<6.7 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4338 Liver		AAS	10	Not given	<0.6 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.

(NEXT PAGE)

Palladium
7440-05-3
Pd
Atw 106.4, MP 1555 C, BP 3167 C, VP 1 mm Hg at 1470 C, 10 mm Hg at 2290 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4339 Lung		AAS	10	Not given	<3.3 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4340 Muscle		AAS	10	Not given	<2.2 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4341 Spleen		AAS	10	Not given	<3.3 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4342 Urine		AAS	a) 283 b) 58	a) Not given b) 0.80-2.61 ug/l	a) <0.3 ug/l b) 1.07 + or - 1.68 ug/l	a) Los Angeles and Lancaster residents b) Occupationally exposed. Highest value in storeroom worker Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-16, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. New Jersey refinery workers METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Camann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.

Pentane, 2-methyl-
107-83-5
C6-H14
MW 86.18, MP -153.67 C, BP 54-60 C, VP 100 mm Hg at 8.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4343 Urine	Inhalation Dermal	GC/MS	10	0.5-5.1 mg/l	2.5 + or - 1.6 mg/l	As 2-methyl-2-pentanol (metabolite) Data also on solvents in factory air Workers in shoe factory in Italy URINE; HYDROCARBONS; METABOLITES; ITALY; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; AIR POLLUTION; OCCUPATIONAL DISEASES	Perbellini, L. Brugnone, F. Pavan, I. 1980 Toxicology and Applied Pharmacology 53:220-229

Pentane, 2,2,4-trimethyl-
540-84-1
C8-H18
MW 114.2, BP 99.2 C, VP 40.6 mm Hg at 21 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4344 Breath		GC-MS	54 (387 samples)	Not given	0.604 ng/l Geometric	Measured at 25 C and 760 mm Hg 29.7% occurrence Lower and upper one-Sigma limits 0.214 and 1.70 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Pentane, 3-ethyl-
617-78-7
C7-H16
MW 100.21, MP -118.604 C, BP 93.5 C, VP 10 mm Hg at -6.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4345 Breath		GC-MS	54 (387 samples)	Not given	0.218 ng/l Geometric	Measured at 25 C and 760 mm Hg 33.3% occurrence Lower and upper one-Sigma limits 0.024 and 1.97 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Pentane, 3-methyl-
96-14-0
C6-H14
MW 86.17, BP 63.3 C, VP 100 mm Hg at 10.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4386 Urine	Inhalation Dermal	GC/MS	10	0.1-1.1 mg/l	0.5 + or - 0.4 mg/l	As 3-methyl-2-pentanol (metabolite) Data also on solvents in factory air Workers in shoe factory in Italy URINE; HYDROCARBONS; METABOLITES; ITALY; INDUSTRIAL ATMOSPHERES; INDUSTRIAL HYGIENE; AIR POLLUTION; OCCUPATIONAL DISEASES	Perbellini, L. Brugnone, F. Pavan, I. 1980 Toxicology and Applied Pharmacology 53:220-229

Pentanoic acid, 2-methyl-, ethyl ester
39255-32-8
C8-H16-02
MW 144.24

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4387 Breath		GC-MS	54 (387 samples)	Not given	0.062 ng/l Geometric	Measured at 25 C and 760 mm Hg 21.9% occurrence Lower and upper one-Sigma limits 0.032 and 0.119 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Pentyl alcohol (8 CI)
1-Pentanol (9 CI)
71-41-0
C5-H12-0
MW 88.1, MP -79 C, BP 137.8 C, VP 1 mm Hg at 13.6 C, 10 mm Hg at 44.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4388 Breath		GC/MS	8	Not detected-0.60 ug/hr	0.13 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Pentyl alcohol (8 CI)
1-Pentanol (9 CI)
71-41-0
C5-H12-O
MW 88.1, MP -79 C, BP 137.8 C, VP 1 mm Hg at 13.6 C, 10 mm Hg at 44.9 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4349 Breath		GC-MS	54 (387 samples)	Not given	0.505 ng/l Geometric	Measured at 25 C and 760 mm Hg 21.7% occurrence Lower and upper one-Sigma limits 0.128 and 1.99 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Phenol
108-95-2
C6-H6-O
MW 94.11, MP 40.85 C, BP 182 C, VP 1 mm Hg at 40.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4350 Urine	Dermal	GC	a) 15 b) 40	a) 1.0-5.0 mg/g creatinine b) 5.2-13.2 mg/g creatinine	a) Not given b) Not given	a) Controls b) Workers exposed to chlorophenols Workers in herbicide manufacturing plants. HERBICIDES; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; PESTICIDES; POPULATION EXPOSURE; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; PHENOLS; CANADA; URINE	Van Roosmalen, P.B. Klein, A.L. Drummond, I. 1980 International Archives of Occupational and Environmental Health 45:57-62
4351 Urine	Ingestion	GC	a) 39 b) 119	a) Not given b) Not given	a) 11.97 + or - 11.60 mg/l b) 11.56 + or - 10.86 mg/l	a) Residents living 120-310 m from spill site b) Controls Measured 6 mo after incident >0.1 mg/l found at least once in well water of study group Residents of East Troy, WI, site of accidental rail car spill of 37,900 l, 1974. Diarrhea, mouth sores, dark urine, burning mouth, reported by significantly more persons in study group than in controls WISCONSIN; URINE; COMPARATIVE EVALUATIONS; PHENOLS; DRINKING WATER; GROUND WATER POLLUTION; METABOLITES	Baker, E.L. Landrigan, P.J. Bertozzi, P.E. Field, P.H. Fasteyns, B.J. Skinner, H.G. 1978 Archives of Environmental Health 33(2):89-94

Phenol, m-chloro- (8 CI)
Phenol, 3-chloro- (9 CI)
108-43-0
C6-H5-Cl-O
MW 128.56, MP 33.5 C, BP 214 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4352 Blood, whole		HPLC	a) 35 b) 13	a) 1-84 ng/g b) 32-82 ng/g	a) 19 ng/g b) 57 ng/g	a) Love Canal residents, 46% (16) positive b) Volunteers, 15% (2) positive Range and mean of recovery samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Phenol, o-chloro- (8 CI)
Phenol, 2-chloro- (9 CI)
95-57-8
C6-H5-Cl-O
MW 128.56, MP 9.3 C, BP 175 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4353 Urine	Dermal	GC	40	1.1-3.3 mg/g creatinine	Not given	Exposed workers Workers in herbicide manufacturing plants. HERBICIDES; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; PESTICIDES; POPULATION EXPOSURE; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; PHENOLS; CANADA; URINE	Van Roosmalen, P.B. Klein, A.L. Drummond, I. 1980 International Archives of Occupational and Environmental Health 45:57-62

Phenol, p-chloro- (8 CI)
Phenol, 4-chloro- (9 CI)
106-48-9
C6-H5-Cl-O
MW 128.56, MP 43.2-43.7 C, BP 220 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4354 Blood, whole		HPLC	a) 34 b) 13	a) 1-90 ng/g b) Not applicable	a) 29 ng/g b) 2 ng/g	a) Love Canal residents, 29% (10) positive b) Volunteers, 8% (1) positive Range and mean of positive samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Phenol, p-nitro- (8 CI)
Phenol, 4-nitro- (9 CI)
100-02-7
C6-H5-N-O3
MW 139.11, MP 114.9-115.6 C, BP 279 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4355 Urine		GC	12	0-0.5 ppm	Not applicable	Range of means during cotton spraying season. Monthly levels correlated with organophosphate pesticide use. Cotton insect scouts, college-age, working without special protective clothing, bathing within 2 hr after daily work. No signs or symptoms of organophosphate poisoning. Levels inversely related to blood cholinesterase activity. PESTICIDES; METABOLITES; URINE; ADULTS; ORGANOPHOSPHATES; OCCUPATIONAL HAZARDS; ENZYMES	Burns, J.E. Parker, R.D. 1975 Archives of Environmental Contamination and Toxicology 3:344-351

Phenol, pentachloro-
87-86-5
C6-H-Cl5-O
MW 266.35, MP 190-191 C, BP 309-310 C (decomp), VP 40 mm Hg at 211.2

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4356 Blood, serum	Inhalation		a) 2 b) 32 c) 11	a) 1.68-1.75 ppm b) 0.116-1.084 ppm c) 0.015-0.055 ppm	a) 1.72 ppm b) Not given c) Not given	a) Girls, ages 2 and 4 yr, from log home with 0.11% on interior wood surface, 0.29 ug/cu m in air b) Log home residents c) Controls, untreated homes logs dipped or sprayed with 5% pentachlorophenol. Kentucky residents of log homes built between 1975 and 1978 Controls. No pentachlorophenol-related health problems. KENTUCKY; ADULTS; CHILDREN; BLOOD SERUM; URINE; FUNGICIDES; POPULATION EXPOSURE; PHENOLS	Beltz, W.A., Ed. 1980 Chemical Regulation Reporter 4(26):823
4357 Blood, serum	Inhalation		422	a) 0.15-17.4 ppm b) 0.02-7.70 ppm c) <0.01-8.40 ppm d) 0.02-7.20 ppm	a) 3.78 + or - 3.99 ppm b) 1.72 + or - 2.02 ppm c) 0.25 + or - 0.88 ppm d) 0.32 + or - 1.25 ppm	a) Open-vat wood treaters b) Pressure-tank wood treaters c) Farmers or pest control operators d) Controls Occupationally exposed subjects or controls in HI. Increases in immature leucocytes and basophils, plasma cholinesterase, alkaline phosphatase, gamma globulin, and uric acid. Decreases in serum Ca. HAWAII; ADULTS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS; PENTACHLOROPHENOL; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION	Klemmer, H.W. Wong, L. Sato, M.M. Reichert, E.L. Korsak, R.J. Rashad, M.N. 1980 Archives of Environmental Contamination and Toxicology 9:715-725
4358 Blood, whole		HPLC	a) 35 b) 12	a) 3-39 ng/g b) 3-15 ng/g	a) 13 ng/g b) 7 ng/g	a) Love Canal residents, 91% (32) positive b) Volunteers, 92% (11) positive Range and mean of positive samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

(NEXT PAGE)

Phenol, pentachloro-
87-86-5
C6-H-C15-O
MW 266.35, MP 190-191 C, BP 309-310 C (decomp), VP 40 mm Hg at 211.2

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4359 Urine	Inhalation		a) 11 b) 33 c) 1	a) 2-87 ppb b) 1-7 ppb c) Not applicable	a) Not given b) Not given c) 216 ppb	a) Log homes residents b) Controls, untreated homes c) 2 yr old girl from log home with 0.11% on interior wood surface, 0.29 ug/cu m in air Logs dipped or sprayed with 5% pentachlorophenol Kentucky residents of log homes built between 1975 and 1978 Controls. No pentachlorophenol-related health problems. KENTUCKY; ADULTS; CHILDREN; BLOOD SERUM; URINE; FUNGICIDES; POPULATION EXPOSURE; PHENOLS	Beltz, W.A., Ed. 1980 Chemical Regulation Reporter 4(26):823
4360 Urine	Inhalation		422	a) <0.01-7.80 ppm b) <0.01-2.40 ppm c) <0.01-0.40 ppm d) <0.01-1.00 ppm	a) 0.95 + or - 1.93 ppm b) 0.27 + or - 0.56 ppm c) 0.01 + or - 0.05 ppm d) 0.03 + or - 0.18 ppm	a) Open-vat wood treaters b) Pressure-tank wood treaters c) Farmers or pest control operators d) Controls Occupationally exposed subjects or controls in HI. Increases in immature leucocytes and basophils, plasma cholinesterase, alkaline phosphatase, gamma globulin, and uric acid. Decreases in serum Ca. HAWAII; ADULTS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS; PENTACHLOROPHENOL; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION	Klemmer, H.W. Wong, L. Sato, M.M. Reichert, E.L. Korsak, R.J. Rashad, M.N. 1980 Archives of Environmental Contamination and Toxicology 9:715-725

Phenol, 2,4-dichloro-
120-83-2
C6-H4-C12-O
MW 163.0, MP 45 C, BP 209-210 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4361 Blood, whole		HPLC	a) 35 b) 13	a) Not applicable b) Not detected	a) 5 ng/g b) Not detected	a) Love Canal residents, 3% (1) positive b) Volunteers Mean of positive samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Phenol, 2,4,5-trichloro-
95-95-4
C6-H3-Cl3-O
MW 197.5, BP 252 C, VP 1 mm Hg at 72 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4362 Blood, whole		HPLC	a) 35 b) 13	a) 2-3 ng/g b) Not detected	a) 3 ng/g b) Not detected	a) Love Canal residents, 11% (4) positive b) Volunteers Range and mean of positive samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

Phenol, 2,4,6-trichloro-
88-06-2
C6-H3-Cl3-O
MW 197.5, MP 68 C, BP 244.5 C, VP 1 mm Hg at 76.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4363 Blood, whole		HPLC	a) 35 b) 13	a) 2-4 ng/g b) Not detected	a) 3 ng/g b) Not detected	a) Love Canal residents, 6% (2) positive b) Volunteers Range and mean of positive samples. Values corrected for recovery Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

(NEXT PAGE)

Phenol, 2,4,6-trichloro-
88-06-2
C6-H3-Cl3-O
MW 197.5, MP 68 C, BP 244.5 C, VP 1 mm Hg at 76.5 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4364 Urine	Dermal	GC	40	2.2-7.1 ug/g creatinine	Not given	Exposed workers Workers in herbicide manufacturing plants. HERBICIDES; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; PESTICIDES; POPULATION EXPOSURE; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; PHENOLS; CANADA; URINE	Van Roosmalen, P.B. Klein, A.L. Drummond, I. 1980 International Archives of Occupational and Environmental Health 45:57-62

Phosphorus
7723-14-0
P
AtW 30.97376, MP 44.1 C, BP 280 C, VP 10 mm Hg at 127 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4365 Blood				a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.08 + or - 0.24 mmol/l b) 1.08 + or - 0.23 mmol/l c) 1.80 + or - 0.34 mmol/l d) 1.76 + or - 0.31 mmol/l e) 2.56 + or - 0.43 mmol/l f) 2.73 + or - 0.48 mmol/l	a) At delivery, from mothers on vitamin supplement b) From control mothers at delivery c) From cord with vitamin supplement d) From cord controls e) From infants with vitamin supplement f) From infant controls Dose of 10 ug. 506 pregnant women, 633 pregnant controls. Scotland. SCOTLAND; UNITED KINGDOM; ADULTS; INFANTS; BLOOD; UMBILICAL CORD; CALCIUM; HYDROXYCHOLECALCIFEROLS; MAGNESIUM; MINERALS; PHOSPHORUS; TRACE ELEMENTS; VITAMIN D; DIETS; MINERAL METABOLISM; PREGNANCY	Cockburn, F. Belton, N.R. Purvis, R.J. Giles, M.M. Brown, J.K. Turner, T.L. Wilkinson, E.M. Forfar, J.O. Barrie, W.J.M. McKay, G.S. Pocock, S.J. 1980 British Medical Journal 281(6232):11-14
4366 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 3.51 + or - 0.07 mg/100 ml b) 3.66 + or - 0.04 mg/100 ml	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016

(NEXT PAGE)

Phosphorus
7723-14-0
P
AtW 30.97376, MP 44.1 C, BP 280 C, VP 10 mm Hg at 127 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4367 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4368 Kidney		NA	a) 8 b) 9 c) 12	a) 245-3940 ug/g b) 373-3004 ug/g c) 215-3310 ug/g Wet wt	a) 829 ug/g b) 1157 ug/g c) 1289 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4369 Liver		NA	a) 8 b) 9 c) 11	a) 606-3019 ug/g b) 422-2315 ug/g c) 260-3600 ug/g Wet wt	a) 1876 ug/g b) 910 ug/g c) 1824 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Phosphorus
7723-14-0
P
AtW 30.97376, MP 44.1 C, BP 280 C, VP 10 mm Hg at 127 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4370 Lung		NA	a) 8 b) 9 c) 11	a) 384-2421 ug/g b) 674-3518 ug/g c) 168-9848 ug/g Wet wt	a) 777 ug/g b) 898 ug/g c) 799 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4371 Urine	Ingestion	Chem	10	Not given	0.69 + or - 0.14 g/day	Loss after daily intake of 1.34 + or - 0.28 g. Data from 47 7-day experimental periods. University students and employees, a nurse and a teacher. Nulliparous, ages 19-29 yr. Phosphorus balance slightly positive, reflecting adequate intake. TENNESSEE; URINE; IRON; CALCIUM; MAGNESIUM; MINERALS; PHOSPHORUS; DIETS; MINERAL METABOLISM; PREGNANCY	Ashe, J.R. Schofield, F.A. Gram, H.R. 1979 American Journal of Clinical Nutrition 32:286-291

Phthalic acid, bis(2-ethylhexyl) ester (8 CI)
1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester (9 CI)
117-81-7
C24-H38-O4
MW 390.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4372 Adipose						Review of effects on biological systems with emphasis on safety evaluation and levels encountered in medical devices ADIPOSE TISSUE; SPLEEN; REVIEW; PHTHALIC ACIDS; METABOLISM; METABOLITES	Thomas, J.A. Darby, T.D. Wallin, R.F. Garvin, P.J. Martis, L. 1978 Toxicology and Applied Pharmacology 45:1-27
4373 Spleen						Review of effects on biological systems with emphasis on safety evaluation and levels encountered in medical devices ADIPOSE TISSUE; SPLEEN; REVIEW; PHTHALIC ACIDS; METABOLISM; METABOLITES	Thomas, J.A. Darby, T.D. Wallin, R.F. Garvin, P.J. Martis, L. 1978 Toxicology and Applied Pharmacology 45:1-27

Platinum
7440-06-4
Pt
AtW 195.09, MP 1773.5 C, BP 3827 C, VP 1 mm Hg at 2600 C, 10 mm Hg at 2940 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4374 Adipose		AAS	10	a) Not given b) Not given	a) <1.3 ppb b) 4.5 ppb	a) Los Angeles residents b) Occupationally exposed Autopsies, Los Angeles, 12-79 yr olds and a 51 yr old smoker who mined and processed Pt, Pd in Ontario. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4375 Blood		AAS	283	a) Not given b) Not given c) Not given	a) <3.1 ug/100 ml b) 0.049 ug/100 ml c) 0.180 ug/100 ml	a) Los Angeles and Lancaster residents, individual values below detection limits b) Los Angeles residents, composite sample c) Lancaster residents, composite sample Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-61, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4376 Hair		AAS	283	Not given	<0.05 ug/g	Los Angeles and Lancaster residents Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-61, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4377 Kidney		AAS	10	Not given	<2.6 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.

(NEXT PAGE)

Platinum
7440-06-4
Pt
AtW 195.09, MP 1773.5 C, BP 3827 C, VP 1 mm Hg at 2600 C, 10 mm Hg at 2980 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4378 Liver		AAS	10	Not given	<0.24 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4379 Lung		AAS	a) 10 b) 1	a) Not given b) Not given	a) <1.3 ppb b) 3.7 ppb	a) Los Angeles residents b) Occupationally exposed Autopsies, Los Angeles, 12-79 yr olds and a 52 yr old who mined and processed Pt, Pd in Ontario. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4380 Muscle		AAS	a) 10 b) 1	a) Not given b) Not given	a) <0.9 ppb b) 25.0 ppb	a) Los Angeles residents b) Occupationally exposed Autopsies, Los Angeles, 12-79 yr olds and a 22 yr old smoker who mined and processed Pt, Pd in Ontario. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.
4381 Spleen		AAS	10	Not given	<1.3 ppb	Los Angeles residents Autopsies, 12-79 yr olds. METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.M. 1976 EPA-600/1-76-019, 235 pp.

(NEXT PAGE)

Platinum
7440-06-4
Pt
AtW 195.09, MP 1773.5 C, BP 3827 C, VP 1 mm Hg at 2600 C, 10 mm Hg at 2940 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4382 Urine		AAS	a) 283 b) 6	a) Not given b) 0.23-2.58 ug/l	a) <0.6 ug/l b) 1.07 ug/l	a) Los Angeles and Lancaster residents b) Occupationally exposed Californians living downwind from a freeway in Los Angeles or in the high desert region of Lancaster. Age groups: 1-16, 17-34, 35 or more yr. 60% white, 40% non-white in Los Angeles. 80% white, 20% non-white in Lancaster. New Jersey refinery workers METALS; PLATINUM; PALLADIUM; LEAD; POPULATION EXPOSURE; OCCUPATIONAL HAZARDS; CALIFORNIA; AUTOPSIES; BLOOD; KIDNEYS; SPLEEN; HAIR; URINE; LUNGS; MUSCLES; ADIPOSE TISSUE; LIVER; COMPARATIVE EVALUATIONS; NEW JERSEY; CANADA; MINING; AUTOMOTIVE	Johnson, D.E. Prevost, R.J. Tillery, J.B. Canann, D.E. Rosenfeld, J.E. 1976 EPA-600/1-76-019, 235 pp.

Plumbane, chlorotriethyl-
1067-14-7
C6-H15-Cl-Pb
MW 329.9

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4383 Adrenal gland						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4384 Blood						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4385 Brain						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148

(NEXT PAGE)

Plumbane, chlorotriethyl-
1067-14-7
C6-H15-Cl-Pb
MW 329.9

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4386 Heart						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4387 Kidney						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4388 Liver						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4389 Muscle						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4390 Pancreas						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4391 Spleen						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148

Plumbane, chlorotriaethyl-
1520-78-1
C3-H9-Cl-Pb
MW 287.77

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4392 Urine						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148

Plumbane, tetraethyl-
78-00-2
C8-H20-Pb
MW 323.45, MP 125-150 C, BP approx 200 C, VP 1 mm Hg at 38.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4393 Blood						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148
4394 Urine						Review. Toxicokinetics and toxic effects of organolead compounds, current occupational and environmental exposure data. UNITED STATES; EUROPE; LEAD ORGANIC COMPOUNDS; AUTOMOTIVE; AIR POLLUTION; CARCINOGEN; FISHES; FOOD CONTAMINATION; FUMES; GASOLINE; GENETIC EFFECTS; INDUSTRIAL ACCIDENTS; INHALATION; URBAN AREAS	Grandjean, P. Nielsen, T. 1979 Residue Reviews 22:97-148

Polybrominated biphenyls (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4395 Blood		GC/MS	21	a) 1.8-57.3 ng/mg protein b) 0.03-0.67 ng/mg protein c) 224-282 ng/mg protein d) Not detected	a) 23.75 ng/mg protein b) 0.35 ng/mg protein c) 253 ng/mg protein d) Not detected	a) Leukocytes, 4 exposed chemical workers b) Erythrocytes, 4 exposed chemical workers c) Beta-lipoprotein fraction, 2 exposed chemical workers d) Leukocytes or erythrocytes, 18 subjects, including exposed dairy farm residents and controls. Michigan chemical workers and dairy farm residents exposed to Firemaster FF-6. Controls, dairy farm residents in Wisconsin. Stimulation dysfunction of lymphocytes, tested with phytohemagglutinin and pokeweed mitogen, especially in the 4 exposed chemical workers. POLYBROMINATED BIPHENYLS; ERYTHROCYTES; BLOOD PLASMA; LEUKOCYTES; MICHIGAN; INDUSTRIAL PLANTS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL DISEASES; WISCONSIN	Roboz, J. Suzuki, R.K. Bekesi, J.G. Holland, J.F. 1980 Journal of Environmental Pathology and Toxicology 3:363-378
4396 Blood, plasma		GC/MS	21	a) 0.13-10.2 ng/mg protein b) Not detected	a) 5.14 ng/mg protein b) Not detected	a) 4 exposed chemical workers b) 18 subjects, including exposed dairy farm residents and controls Michigan chemical workers and dairy farm residents exposed to Firemaster FF-6. Controls, dairy farm residents in Wisconsin. Stimulation dysfunction of lymphocytes, tested with phytohemagglutinin and pokeweed mitogen, especially in the 4 exposed chemical workers. POLYBROMINATED BIPHENYLS; ERYTHROCYTES; BLOOD PLASMA; LEUKOCYTES; MICHIGAN; INDUSTRIAL PLANTS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL DISEASES; WISCONSIN	Roboz, J. Suzuki, R.K. Bekesi, J.G. Holland, J.F. 1980 Journal of Environmental Pathology and Toxicology 3:363-378
4397 Blood, serum	Ingestion	GC-EC	290	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 4.23 ppb b) 2.72 ppb c) 2.75 ppb d) 7.08 ppb e) 4.32 ppb f) 3.18 ppb g) 3.45 ppb h) 1.87 ppb	a) 149 males b) 183 females c) 0-4 yr of age, 33 subjects d) 5-8 yr old males, 40 subjects e) 5-8 yr old females, 37 subjects f) 9-12 yr of age, 81 subjects g) 13-16 yr old males, 58 subjects h) 13-16 yr old females, 43 subjects Michigan children living on PBB-contaminated farms or children consuming meat or milk from these farms. No significant association of abnormalities and serum PBB levels. Significant negative correlation between number of reported symptoms and serum PBB. POLYBROMINATED BIPHENYLS; BLOOD SERUM; CHILDREN; MICHIGAN; WISCONSIN; FOOD CONTAMINATION; ANIMAL POPULATIONS; FARMS; COMPARATIVE EVALUATIONS; BROMINE ORGANIC COMPOUNDS; SEX; AGE; HEALTH HAZARDS; DIETS	Barr, M., Jr. 1980 Environmental Research 21:255-274

(NEXT PAGE)

Polybrominated biphenyls (No postings in CHEMLINE).

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4398 Milk						Review of Firemaster contamination of cattle feed in Michigan and recommendations for nursing mothers JAPAN; ADULTS; INFANTS; SKIN DISEASES; MILK; REVIEW; POLYBROMINATED BIPHENYLS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FIRE RETARDANTS; FOOD CONTAMINATION; FOODS; LACTATION; POPULATION EXPOSURE	Miller, R.W. Finberg, L. 1977 Journal of Pediatrics 90(3):510-512

Potassium
7440-09-7
K
AtW 39.098, MP 63.2 C, BP 765.5 C, VP 100 mm Hg at 590 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4399 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 4.18 + or - 0.05 meq/l b) 4.32 + or - 0.03 meq/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016
4400 Breath	Inhalation	PIXE	1	Not given	105.0 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4401 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 1359 ppm b) 1240 ppm	a) learning disabled b) Controls learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206

(NEXT PAGE)

Potassium
7440-09-7
K
Atw 39.098, MP 63.2 C, BP 765.5 C, VP 100 mm Hg at 590 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4402 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4403 Heart		Flame photometry	a) 14 b) 7	a) 0.035-0.086 mEq/g b) 0.068-0.082 mEq/g Wet wt	a) 0.063 + or - 0.013 mEq/g b) 0.074 + or - 0.006 mEq/g Wet wt	a) Sudden death from ischemic heart disease b) Sudden death from trauma Ventricular myocardium < 60 yr olds MAGNESIUM; POTASSIUM; HEART DISEASES; AUTOPSIES; HEART; METALS	Johnson, C.J. Peterson, D.R. Smith, E.K. 1979 American Journal of Clinical Nutrition 32:967-970

Propane
74-98-6
C3-H8
MW 44.09, MP -189.69 C, BP -42.1 C, VP 100 mm Hg at -79.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4404 Breath		GC/MS	8	Not detected-2.2 ug/hr	0.8 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

79-46-9
C3-H7-N-02
MW 89.09, BP 120 C, VP 10 mm Hg at 15.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4805 Breath		GC-MS	54 (387 samples)	Not given	0.406 ng/l Geometric	Measured at 25 C and 760 mm Hg 11.1% occurrence Lower and upper one-Sigma limits 0.119 and 1.38 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Propionic acid, 3-mercapto-, ethyl ester (8 CI)
Propanoic acid, 3-mercapto-, ethyl ester (9 CI)
5466-06-8
C5-H10-02-S
MW 134.21

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4806 Breath		GC-MS	54 (387 samples)	Not given	5.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 29.2% occurrence Lower and upper one-Sigma limits 2.5 and 11.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Propiophenone (8 CI)
1-Propanone, 1-phenyl- (9 CI)
93-55-0
C9-H10-O
MW 134.2, MP 21 C, BP 218.0 C, VP 1 mm Hg at 50.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4807 Breath		GC-MS	54 (387 samples)	Not given	0.261 ng/l Geometric	Measured at 25 C and 760 mm Hg 26.4% occurrence Lower and upper one-Sigma limits 0.059 and 1.14 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Propyl alcohol (8 CI)
1-Propanol (9 CI)
71-23-8
C3-H8-O
MW 60.1, MP -127 C, BP 97.19 C, VP 10 mm Hg at 14.7 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4408 Breath		GC/MS	8	Not detected-1400.0 ug/hr	175.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4409 Breath		GC-MS	54 (387 samples)	Not given	21.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 50.7% occurrence Lower and upper one-Sigma limits 3.9 and 114.1 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Propyne (8 CI)
1-Propyne (9 CI)
74-99-7
C3-H4
MW 40.06, MP -104 C, BP -23.3 C, VP 3876 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4410 Breath		GC/MS	8	Not detected-2.3 ug/hr	0.5 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Rubidium
7440-17-7
Rb
Atw 85.4678, MP 39 C, BP 688 C, VP 10 mm Hg at 390 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4411 Brain		NA		a) 1.8-4.6 ug/g (wet wt) b) 1.6-2.6 ug/g (wet wt) c) 1.3-3.5 ug/g (wet wt) d) 1.1-3.4 ug/g (wet wt)	a) 3.0 + or - 1.2 ug/g (wet wt) b) 2.3 + or - 0.58 ug/g (wet wt) c) 2.3 + or - 0.83 ug/g (wet wt) d) 2.6 + or - 1.0 ug/g (wet wt)	a) Males, cerebrum, 6 subjects b) Females, cerebrum, 3 subjects c) Males, cerebellum, 5 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4412 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4413 Heart		NA	a) 7 b) 3	a) 1.2-8.1 ug/g (wet wt) b) 1.8-2.4 ug/g (wet wt)	a) 3.4 + or - 2.2 ug/g (wet wt) b) 2.1 + or - 0.3 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Rubidium
7440-17-7
Rb
AtW 85.4678, MP 39 C, BP 688 C, VP 10 mm Hg at 390 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4414 Kidney		NA	a) 15 b) Not given	a) 1.0-6.0 ug/g (wet wt) b) 2.3-5.2 ug/g (wet wt)	a) 3.3 + or - 1.5 ug/g (wet wt) b) 3.4 + or - 1.6 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4415 Kidney		NA	a) 8 b) 9 c) 12	a) 2.44-8.40 ug/g b) 1.50-13.5 ug/g c) 2.01-8.0 ug/g Wet wt	a) 3.01 ug/g b) 2.93 ug/g c) 4.10 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4416 Liver		NA	a) 2 b) 4	a) 9.6-9.7 ug/g (wet wt) b) 2.7-5.9 ug/g (wet wt)	a) 9.7 + or - 0.07 ug/g (wet wt) b) 4.8 + or - 1.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Rubidium
7440-17-7
Rb
AtW 85.4678, MP 39 C, BP 688 C, VP 10 mm Hg at 390 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8417 Liver		NA	a) 8 b) 9 c) 11	a) 3.11-9.10 ug/g b) 1.40-8.50 ug/g c) 0.47-7.40 ug/g Wet wt	a) 5.20 ug/g b) 4.01 ug/g c) 3.89 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
8418 Lung		NA	3	1.6-3.3 ug/g (wet wt)	2.2 + or - 0.90 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; BROMINE; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODINE; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
8419 Lung		NA	a) 8 b) 9 c) 11	a) 2.50-7.49 ug/g b) 1.40-5.70 ug/g c) 1.0-9.9 ug/g Wet wt	a) 2.99 ug/g b) 2.64 ug/g c) 3.42 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Rubidium
7440-17-7
Rb
AtW 85.4678, MP 39 C, BP 688 C, VP 10 mm Hg at 390 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4420 Muscle		NA	a) 4 b) 3	a) 3.3-5.6 ug/g (wet wt) b) 2.8-5.2 ug/g (wet wt)	a) 4.2 + or - 1.0 ug/g (wet wt) b) 3.9 + or - 1.2 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4421 Pancreas		NA	a) 4 b) 3	a) 1.3-6.3 ug/g (wet wt) b) 3.1-4.8 ug/g (wet wt)	a) 4.1 + or - 2.2 ug/g (wet wt) b) 4.0 + or - 0.85 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4422 Spleen		NA	a) 6 b) 3	a) 2.7-7.0 ug/g (wet wt) b) 2.5-5.1 ug/g (wet wt)	a) 4.2 + or - 1.7 ug/g (wet wt) b) 3.5 + or - 1.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Scandium
7440-20-2
Sc
AtW 44.9559, MP 1538 C, BP 2832 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4423 Aorta		NA	2	None detected	None detected	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4424 Brain		NA		a) None detected b) None detected c) None detected d) None detected	a) None detected b) None detected c) None detected d) None detected	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 8 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4425 Heart		NA	a) 6 b) 2	a) < or = 0.001 ug/g (wet wt) b) None detected	a) Not given b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Scandium
7440-20-2
Sc
AtW 44.9559, MP 1538 C, BP 2832 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4426 Kidney		NA	a) 10 b) 2	a) < or = 0.003 ug/g (wet wt) b) None detected	a) Not given b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4427 Kidney		NA	a) 8 b) 20	a) < 0.0001-0.00053 ug/g b) < 0.0001-0.0020 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4428 Liver		NA	a) 12 b) 3	a) < or = 0.01 ug/g (wet wt) b) None detected	a) Not given b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Scandium
7440-20-2
Sc
Atw 44.9559, MP 1538 C, BP 2832 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4429 Liver		NA	a) 8 b) 20	a) < 0.0001-0.0005 ug/g b) < 0.0001-0.0029 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4430 Lung		NA	a) 5 b) 2	a) < or = 2.7 ug/g (wet wt) b) None detected	a) 0.54 + or - 1.2 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4431 Lung		NA	a) 8 b) 9 c) 11	a) 0.00040-0.0090 ug/g b) < 0.0001-0.26 ug/g c) 0.00090-0.22 ug/g Wet wt	a) 0.0023 ug/g b) 0.0023 ug/g c) 0.0042 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Scandium
7440-20-2
Sc
Atw 44.9559, MP 1538 C, BP 2832 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4432 Muscle		NA	a) 4 b) 8	a) None detected b) None detected	a) None detected b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4433 Pancreas		NA	a) 6 b) 2	a) < or = 0.001 ug/g (wet wt) b) None detected	a) Not given b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4434 Spleen		NA	a) 6 b) 3	a) < or = 0.007 ug/g (wet wt) b) None detected	a) Not given b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4435 Aorta		NA	3	1.0-6.4 ug/g (wet wt)	2.9 + or - 3.0 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4436 Blood		Fluorometry	a) 626 b) 6	a) 0.11-0.60 ug/ml b) 0.24-0.42 ug/ml	a) 0.265 ug/ml b) 0.29 ug/ml	a) Residents of South Dakota and surrounding areas b) Residents of known seleniferous area, Rapid City, SD. Weekly or monthly sampling, 4-24 wk. Healthy blood donors of various ages, South Dakota, Wyoming, Nebraska, and North Dakota. SELENIUM; BLOOD; HAIR; URINE; COMPARATIVE EVALUATIONS; SOILS; SOUTH DAKOTA; NORTH DAKOTA; NEBRASKA; WYOMING	Howe, M. 1979 Archives of Environmental Health 34(6):444-448
4437 Blood, whole	Ingestion	AAS	33	13.3-24.8 ug/100 ml	17.12 + or - 2.53 ug/100 ml	Residents using water from wells with 26-1800 ug Se/l Milan, NM NEW MEXICO; BLOOD; HAIR; URINE; METALS; SELENIUM; DRINKING WATER; ENZYMES; POPULATION EXPOSURE	Valentine, J.L. Kang, H.K. Dang, P-M Schluchter, M. 1980 Journal of Toxicology and Environmental Health 6:731-736
4438 Blood, whole		Fluorometry	210	10-34 ug/100 ml	20.6 ug/100 ml	Subjects from 19 collection sites in the U.S. SELENIUM; MOLYBDENUM; VANADIUM; BLOOD; SEX; SOUTH DAKOTA; NEW YORK; WYOMING; MONTANA; OHIO; MISSISSIPPI; TEXAS; NORTH DAKOTA; WASHINGTON; CALIFORNIA; ARIZONA; INDIANA; LOUISIANA; ARKANSAS; FLORIDA; VERMONT; TRACE ELEMENTS	Allaway, W.H. Kubota, J. Losee, F. Roth, M. 1968 Archives of Environmental Health 16:342-348

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4439 Brain		NA		a) 0.19-5.0 ug/g (wet wt) b) 0.41-1.4 ug/g (wet wt) c) 0.50-7.9 ug/g (wet wt) d) 0.35-2.2 ug/g (wet wt)	a) 2.0 + or - 1.8 ug/g (wet wt) b) 0.82 + or - 0.52 ug/g (wet wt) c) 2.9 + or - 3.3 ug/g (wet wt) d) 1.0 + or - 0.84 ug/g (wet wt)	a) Males, cerebrum, 7 subjects b) Females, cerebrum, 3 subjects c) Males, cerebellum, 5 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; LITHIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4440 Brain	Ingestion	GC	9	a) 226.8-423.2 ppb b) 15.2-234.7 ppb	a) 311.6 ppb b) 111.5 ppb Fresh wt	a) Se II, IV b) Se VI Autopsies Canadian Indians, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4441 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4442 Hair	Ingestion	AAS	30	0.02-1.98 ug/g	0.46 + or - 0.44 ug/g	Residents using water from wells with 26-1800 ug Se/l Milan, NM NEW MEXICO; BLOOD; HAIR; URINE; METALS; SELENIUM; DRINKING WATER; ENZYMES; POPULATION EXPOSURE	Valentine, J.L. Kang, H.K. Dang, P-M Schluchter, M. 1980 Journal of Toxicology and Environmental Health 6:731-736

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4443 Hair		NA	a) 42, b) 40	a) 0.24-87.54 ug/g b) 0.15-121.43 ug/g	a) 0.84 ug/g b) 0.50 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000
4444 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4445 Hair		Fluorometry	a) 5 b) 1	a) 0.25-1.11 ug/g b) 61.2-109.5 ug/g	a) 0.77 ug/g b) 85.3 ug/g	a) Rapid City, SD seleniferous area, weekly or monthly sampling, 4-24 wks b) Rapid City, SD, weekly sampling, 5 wks. Dandruff shampoo containing Se had been used. Healthy blood donors of various ages, South Dakota, Wyoming, Nebraska, and North Dakota. SELENIUM; BLOOD; HAIR; URINE; COMPARATIVE EVALUATIONS; SOILS; SOUTH DAKOTA; NORTH DAKOTA; NEBRASKA; WYOMING	Howe, M. 1979 Archives of Environmental Health 34(6):444-448
4446 Heart		NA	a) 8 b) 4	a) 0.44-5.0 ug/g (wet wt) b) 0.81-3.7 ug/g (wet wt)	a) 1.8 + or - 1.6 ug/g (wet wt) b) 2.1 + or - 1.4 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4447 Heart	Ingestion	GC	1	a) Not given b) Not given	a) 251.2 ppb b) 81.5 ppb Fresh wt	a) Se II, IV b) Se VI Autopsies Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4448 Kidney		NA	a) 19 b) 3	a) 0.50-4.8 ug/g (wet wt) b) 0.87-1.3 ug/g (wet wt)	a) 1.6 + or - 1.0 ug/g (wet wt) b) 1.1 + or - 0.22 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4449 Kidney		NA	a) 8 b) 9 c) 12	a) 0.37-1.03 ug/g b) 0.31-2.12 ug/g c) 0.25-0.71 ug/g Wet wt	a) 0.70 ug/g b) 0.52 ug/g c) 0.33 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4450 Kidney	Ingestion	GC	1	a) Not given b) Not given	a) 1093.4 ppb b) 707.8 ppb Fresh wt	a) Se II, IV b) Se VI Autopsies Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4451 Liver		NA	a) 7 b) 7	a) 1.2-6.2 ug/g (wet wt) b) 0.85-3.4 ug/g (wet wt)	a) 2.7 + or - 1.8 ug/g (wet wt) b) 1.9 + or - 0.98 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4452 Liver		NA	a) 8 b) 9 c) 11	a) 0.14-0.46 ug/g b) 0.12-0.35 ug/g c) 0.11-0.23 ug/g Wet wt	a) 0.19 ug/g b) 0.20 ug/g c) 0.18 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4453 Liver	Ingestion	GC	1	a) Not given b) Not given	a) 269.7 ppb b) 176.1 ppb Fresh wt	a) Se II, IV b) Se VI Autopsies Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8458 Lung		NA	2	0.52-15 ug/g (wet wt)	7.8 + or - 10 ug/g (wet wt)	Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
8455 Lung		NA	a) 9 b) 13 c) 23	a) 0.044-0.22 ug/g b) 0.068-1.56 ug/g c) 0.0010-0.30 ug/g Wet wt	a) 0.11 ug/g b) 0.19 ug/g c) 0.12 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
8456 Muscle		NA	a) 6 b) 4	a) 0.67-3.3 ug/g (wet wt) b) 0.57-2.2 ug/g (wet wt)	a) 2.1 + or - 1.1 ug/g (wet wt) b) 1.1 + or - 0.76 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4457 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 0.88 + or - 0.59 ppm b) 0.58 + or - 0.27 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.M. Moore, C.E. 1979 Science of the Total Environment 13:131-140
4458 Pancreas		NA	a) 6 b) 3	a) 1.1-3.6 ug/g (wet wt) b) 0.47-1.6 ug/g (wet wt)	a) 2.3 + or - 1.0 ug/g (wet wt) b) 0.89 + or - 0.62 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4459 Placenta	Ingestion	GC	3	a) 23.3-50.1 ppb b) 6.3-16.4 ppb	a) 35.3 ppb b) 10.1 ppb Fresh wt	a) Se II, IV b) Se VI Residents of highly industrialized area WISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4460 Spinal cord			a) 1 b) 3	a) Not applicable b) 58.0-180.2 ug/g	a) 244.4 ug/g b) 100.1 ug/g Dry wt	a) Motor neuron disease patient b) Controls Ventral horn tissue, autopsy No detectable Se in 6 other patients and 9 controls 55 yr old man died of progressive muscular distrophy. 47-67 yr old controls, died from chronic renal failure, breast carcinoma, and coronary artery diseases. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24

(NEXT PAGE)

Selenium
7782-49-2
Se
AtW 78.96, MP 170-217 C, BP 685 C, VP 1 mm Hg at 356 C, 10 mm Hg at 429 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4461 Spleen		NA	a) 7 b) 4	a) 0.88-5.2 ug/g (wet wt) b) 0.72-2.0 ug/g (wet wt)	a) 1.8 + or - 1.5 ug/g (wet wt) b) 1.3 + or - 1.0 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4462 Spleen	Ingestion	GC	1	a) Not given b) Not given	a) 246.6 ppb b) 142.4 ppb Fresh wt	a) Se II, IV b) Se VI Autopsies Canadian Indian, northwest Ontario FISHES; FOOD CONTAMINATION; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS; WATER POLLUTION; MERCURY; MERCURY ORGANIC COMPOUNDS; SELENIUM; BRAIN; HEART; KIDNEYS; LIVER; PLACENTA; SPLEEN; CANADA; AUTOPSIES	Cappon, C.J. Smith, J.C. 1981 Journal of Analytical Toxicology 5:90-98
4463 Urine	Ingestion	AAS	28	14.4-337.5 ug/d	79.21 + or - 48.12 ug/d	Residents using water from wells with 26-1800 ug Se/l Milan, NM NEW MEXICO; BLOOD; HAIR; URINE; METALS; SELENIUM; DRINKING WATER; ENZYMES; POPULATION EXPOSURE	Valentine, J.L. Kang, H.K. Dang, P-M Schluchter, M. 1980 Journal of Toxicology and Environmental Health 6:731-736
4464 Urine		Fluorometry	92	2.6-47 ug/l	12.3 + or - 8.21 ug/l	Normal, non-occupationally exposed 14-77 yr olds, Lyon, France. SELENIUM; METALS; FRANCE; URINE; MEASUREMENT METHODS	Geahchan, A. Chambon, P. 1980 Clinical Chemistry 26(9):1272-1274
4465 Urine		Fluorometry	6	0.02-0.2 ug/ml	0.063 ug/ml	Rapid City, SD, seleniferous area, weekly or monthly sampling, 4-24 wks. Healthy blood donors of various ages, South Dakota, Wyoming, Nebraska, and North Dakota. SELENIUM; BLOOD; HAIR; URINE; COMPARATIVE EVALUATIONS; SOILS; SOUTH DAKOTA; NORTH DAKOTA; NEBRASKA; WYOMING	Hove, H. 1979 Archives of Environmental Health 34(6):444-448

Silane, difluorodimethyl-
353-66-2
C2-H6-F2-Si
MW 96.15

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4466 Breath		GC/MS	8	1.2-140.0 ug/hr	28.0 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Silane, fluorotrimethyl-
420-56-4
C3-H9-F-Si
MW 92.20

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4467 Breath		GC/MS	8	Not detected-5.2 ug/hr	0.7 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

Silicon
7440-21-3
Si
AtW 28.086, MP 1410 C, BP 2600 C, VP 1 mm Hg at 1724 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4468 Blood, serum	Injection	AAS	1	Not applicable	2.7 mg%	Caucasian, age 40 yr. Emboli in lungs LUNGS; BRAIN; KIDNEYS; LIVER; BLOOD SERUM; SILICON; CASE HISTORIES; AUTOPSIES	Solomons, E.T. Jones, J.K. 1975 Journal of Forensic Sciences 20(1):191-199
4469 Brain	Injection	AAS	1	Not applicable	41 mg%	Caucasian, age 40 yr. Emboli in lungs LUNGS; BRAIN; KIDNEYS; LIVER; BLOOD SERUM; SILICON; CASE HISTORIES; AUTOPSIES	Solomons, E.T. Jones, J.K. 1975 Journal of Forensic Sciences 20(1):191-199

(NEXT PAGE)

Silicon
7440-21-3
Si
AtW 28.086, MP 1410 C, BP 2600 C, VP 1 mm Hg at 1724 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4470 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is cutlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4471 Kidney	Injection	AAS	1	Not applicable	120 mg%	Caucasian, age 40 yr. Emboli in lungs LUNGS; BRAIN; KIDNEYS; LIVER; BLOOD SERUM; SILICON; CASE HISTORIES; AUTOPSIES	Solomons, E.T. Jones, J.K. 1975 Journal of Forensic Sciences 20(1):191-199
4472 Liver	Injection	AAS	1	Not applicable	54 mg%	Caucasian, age 40 yr. Emboli in lungs LUNGS; BRAIN; KIDNEYS; LIVER; BLOOD SERUM; SILICON; CASE HISTORIES; AUTOPSIES	Solomons, E.T. Jones, J.K. 1975 Journal of Forensic Sciences 20(1):191-199
4473 Lung	Injection	AAS	1	Not applicable	4000 mg%	Caucasian, age 40 yr. Emboli in lungs LUNGS; BRAIN; KIDNEYS; LIVER; BLOOD SERUM; SILICON; CASE HISTORIES; AUTOPSIES	Solomons, E.T. Jones, J.K. 1975 Journal of Forensic Sciences 20(1):191-199

Silver
7440-22-4
Ag
AtW 107.868, MP 960.5 C, BP 2000 C, VP 1 mm Hg at 1310 C, 10 mm Hg at 1540 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4474 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4475 Kidney		NA	a) 8 b) 21	a) < 0.005-0.045 ug/g b) < 0.005-0.18 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4476 Liver		NA	a) 8 b) 19	a) < 0.005-0.032 ug/g b) < 0.005-0.33 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Silver
7440-22-4
Ag
AtW 107.868, MP 960.5 C, BP 2000 C, VP 1 mm Hg at 1310 C, 10 mm Hg at 1540 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4477 Lung		NA	a) 8 b) 20	a) < 0.005-0.060 ug/g b) < 0.005-0.028 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in gourp I and 2-19 yr, group II. Ccntrols, ages 43-72 yr, who lived 50 ks from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS; TELLURIUM	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4478 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 0.74 + or - 0.74 ppm b) 0.34 + or - 0.20 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels of 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.M. Moore, C.E. 1979 Science of the Total Environment 13:131-140

Sodium
7440-23-5
Na
AtW 22.98977, MP 97.82 C, BP 881.4 C, VP 1 mm Hg at 440 C, 10 mm Hg at 546 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4479 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	140.60 + or - 1.10 meq/l b) 138.59 + or - 0.77 meq/l	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1914):1008-1016

(NEXT PAGE)

Sodium
7440-23-5
Na
AtW 22.98977, MP 97.82 C, BP 881.4 C, VP 1 mm Hg at 440 C, 10 mm Hg at 586 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4480 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 1637 ppm b) 919 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
4481 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4482 Hair		NA	a) 23 b) 19 c) 42 d) 14 e) 26 f) 40	a) 3-199 ug/g b) <7-40 ug/g c) <7-199 ug/g d) 12-496 ug/g e) <7-94 ug/g f) <7-496 ug/g	a) 34 ug/g b) 3 ug/g c) 16 ug/g d) 86 ug/g e) 9 ug/g f) 14 ug/g Medians	a) Male controls b) Female controls c) All controls d) Male multiple sclerosis patients e) Female multiple sclerosis patients f) All multiple sclerosis patients Samples from 7 scalp sites in each subject. CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

Strontium
7440-24-6
Sr
AtW 87.62, MP 357 C, BP 1366 C, VP 10 mm Hg at 898 C, 1 mm Hg at 740

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4483 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

Styrene (8 CI)
Benzene, ethenyl- (9 CI)
100-42-5
C8-H8
MW 104.14, MP -31 C, BP 145-146 C, VP 39.4 atm at 374.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4484 Blood, whole	Inhalation	GC/MS	4	a) Not given b) Not given c) Not given	a) 0.4 ug/ml b) 0.92 + or - 0.26 ug/ml c) 0.01 ug/ml	aa) Initial value b) Peak, at 6 hr c) Final value, at 47 hr Dose was 80 ppm a) and c) estimated from graph Healthy Caucasian 24-46 yr olds, 72.6-90.7 kg. "Off" odor, mild eye irritation, warm sensation in face. STYRENES; BLOOD; INHALATION; ADULTS; URINE; METABOLITES	Ramsey, J.C. Young, J.D. Karbowski, R.J. Chenoweth, M.B. McCarty, L.P. Braun, W.H. 1980 Toxicology and Applied Pharmacology 53:54-63
4485 Urine	Inhalation	GC/MS	4	Not given	2.32 + or - 0.80 millimoles	48 hr mean excretions of metabolites, mandelic acid and phenylglyoxylic acid. Dose was 80 ppm. Healthy Caucasian 24-46 yr olds, 72.6-90.7 kg. "Off" odor, mild eye irritaiton, warm sensation in face. STYRENES; BLOOD; INHALATION; ADULTS; URINE; METABOLITES	Ramsey, J.C. Young, J.D. Karbowski, R.J. Chenoweth, M.B. McCarty, L.P. Braun, W.H. 1980 Toxicology and Applied Pharmacology 53:54-63

...ane, methyl... (9 CI)
Propane, 1-(methythio)- (9 CI)
3877-15-4
C4-H10-S
MW 90.19, MP -113 C, BP 95.54 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4486 Breath		GC-MS	54 (387 samples)	Not given	1.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 14.5% occurrence Lower nd upper one-Sigma limits 0.34 and 5.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Sulfur
7704-34-9
S
Atw 32.064, MP 115.21 C, BP about 444.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4487 Breath	Inhalation	PIXE	1	Not given	5.9 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4488 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4489 Hair		NA	a) 42 b) 40	a) 2.77-3.99% b) 2.46-3.73%	a) 3.49% b) 3.23% Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000

Tellurium
13494-80-9
Te
MW 127.6, MP 449.5 C, BP 989.8 C, VP 1 mm Hg at 520 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4490 Kidney		NA	a) 8 b) 19	a) < 0.005-0.33 ug/g b) < 0.005-0.24 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4491 Liver		NA	a) 8 b) 19	a) < 0.005-0.12 ug/g b) < 0.005-0.12 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4492 Lung		NA	a) 8 b) 19	a) < 0.005-0.025 ug/g b) < 0.005-1.06 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

tert-Butyl disulfide (8 CI)
Disulfide, bis(1,1-dimethylethyl) (9 CI)
110-06-5
C8-H18-S2
MW 178.36

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4893 Breath		GC-MS	54 (387 samples)	Not given	0.509 ng/l Geometric	Measured at 25 C and 760 mm Hg 28.8% occurrence Lower and upper one-Sigma limits 0.185 and 1.78 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Thallium
7440-28-0
Tl
AtW 204.37, MP 303.5 C, BP 1457 C, VP 1 mm Hg at 825 C, 10 mm Hg at 1000 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4894 Cerebrospinal fluid	Ingestion	AAS	1	Not given	0.2 mg/l	5 days after 1 g. 28 yr old, hospitalized 4 days after ingesting thallium sulfate. Lower abdominal pain, nausea, hyperesthesia of limbs, vomiting, lethargy, drowsiness, decreased blood pressure, loss of scalp and body hair. THALLIUM; METAL POISONING; CASE HISTORIES; URINE; SALIVA; ITALY; FECES; SUICIDE; CEREBROSPINAL FLUID	Richelmi, P. Bono, F. Guardia, L. Ferrini, B. Manzo, L. 1980 Archives of Toxicology 43:321-325
4895 Saliva	Ingestion	AAS	1	a) 9-0.2 ug/ml b) 10.15-0.18 mg/day	a) Not given b) Not given	a) 7 and 23 days after 1 g b) Days 7-9 and 23-26 after 1 g Some values estimated from graph 28 yr old, hospitalized 4 days after ingesting thallium sulfate. Lower abdominal pain, nausea, hyperesthesia of limbs, vomiting, lethargy, drowsiness, decreased blood pressure, loss of scalp and body hair. THALLIUM; METAL POISONING; CASE HISTORIES; URINE; SALIVA; ITALY; FECES; SUICIDE; CEREBROSPINAL FLUID	Richelmi, P. Bono, F. Guardia, L. Ferrini, B. Manzo, L. 1980 Archives of Toxicology 43:321-325

(NEXT PAGE)

Thallium
7440-28-0
Tl
AtW 204.37, MP 303.5 C, BP 1457 C, VP 1 mm Hg at 825 C, 10 mm Hg at 1000 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8496 Urine	Ingestion	AAS	1	5.68-0.25 mg/day	Not given	At admission and 26 days after 1 g. 14-hr urines. 28 yr old, hospitalized 4 days after ingesting thallium sulfate. Lower abdominal pain, nausea, hyperesthesia of limbs, vomiting, lethargy, drowsiness, decreased blood pressure, loss of scalp and body hair. THALLIUM; METAL POISONING; CASE HISTORIES; URINE; SALIVA; ITALY; FECES; SUICIDE; CEREBROSPINAL FLUID	Richelmi, P. Bono, F. Guardia, L. Ferrini, B. Manzo, L. 1980 Archives of Toxicology 43:321-325

Theophylline, compd. with ethylenediamine (2:1) (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl-, compd. with 1,2-ethanediamine (2:1) (9 CI)
317-34-3
C7-H8-N4-O2.1/2C2-H8-N2
MW 420.44, MP 276-278 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8497 Blood, plasma	Ingestion	HPLC	4	a) 5.7-11.9 ug/ml b) 7.4-11.3 ug/ml	a) 8.3 ug/ml b) 8.9 ug/ml	a) 250 mg/8 hr to steady state b) 250 mg/8 hr plus 100 mg allopurine/8 hr to steady state. Non-smokers, ages 29-35 yr, on xanthine-free diet 48 hr. AUSTRALIA; ADULTS; BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; COMPARATIVE EVALUATIONS; THEOPHYLLINES; ENZYMES; METABOLISM; METABOLITES	Grygiel, J.J. Wing, L.M.H. Farkas, J. Birkett, D.J. 1979 Clinical Pharmacology and Therapeutics 26(5):660-667
8498 Urine	Ingestion	HPLC	4	a) Not given b) Not given	a) 106.9 +or- 4.5% of dose b) 94.8 +or- 4.5% of dose	a) 250 mg/8 hr b) 250 mg/8 hr plus 100 mg allopurinol/8 hr Theophylline plus metabolites, steady state, in 8-hr urines. > 50% as 1,3-dimethyluric acid. Data available for IV dose. Non-smokers, ages 29-35 yr, on xanthine-free diet 48 hr. AUSTRALIA; ADULTS; BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; COMPARATIVE EVALUATIONS; THEOPHYLLINES; ENZYMES; METABOLISM; METABOLITES	Grygiel, J.J. Wing, L.M.H. Farkas, J. Birkett, D.J. 1979 Clinical Pharmacology and Therapeutics 26(5):660-667

Thiocyanic acid, ion(1-) (8 CI)
Thiocyanate (9 CI)
302-04-5
C-N-S
MW 58.08

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4499 Blood	Injection	Chem	50	a) 0.37 - 18.0 mg/l b) 1.0-16.4 mg/l c) 0.32-18.0mg/l	a) 4.6 + or - 8.7 mg/l b) 6.2 + or - 5.0 mg/l c) 4.6 + or - 4.1 mg/l	a) Before drug b) 10 min after end of infusion c) 3 hr after end of infusion Dose, 50-2131 ug/kg Na-nitroprusside 16-64 yr old neurosurgical patients ADULTS; HEART DISEASES; HYPOTENSION; BLOOD; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; COMPARATIVE EVALUATIONS; SURGERY; CYANIDE; THIOCYANATES	Bogusz, M. Moroz, J. Karski, J. Gierz, J. Regieli, A. Witkowska, E. Golabek, A. 1979 Clinical Chemistry 25(7):60-63
4500 Blood, plasma	Inhalation	Colorimetry	9	a) 11.2-18.0 mg/l b) 2.9-5.8 mg/l	a) 14.3 mg/l b) 4.0 mg/l	a) Smokers, after 0.032 mg/kg Na warfarin, AM dose, 2 wk b) Subjects and dose as in a), after 1 mo abstention from smoking Steady state level. Means significantly different. Healthy 19-60 yr olds, smoked at least 1 pack of cigarettes/day. DRUGS; SMOKING; TOBACCOS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ANTICOAGULANTS; METABOLISM; ENZYMES; THIOCYANATES	Bachmann, K. Shapiro, R. Fulton, R. Carroll, F.T. Sullivan, T.J. 1979 Clinical Pharmacology and Therapeutics 25(3):309-315

Thiocyclopentane (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4501 Breath		GC-MS	54 (387 samples)	Not given	0.921 ng/l Geometric	Measured at 25 C and 760 mm Hg 41.6% occurrence Lower and upper one-Sigma limits 0.312 and 2.72 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Thyroxine, L- (8 CI)
L-Tyrosine, O-(4-hydroxy-3,5-diiodophenyl)-3,5-diiodo- (9 CI)
51-48-9
C15-H11-I4-N-O4
MW 776.93, MP 235-236 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4502 Blood, serum			243	4.5-11.5 ug/100 ml	7.7 ug/100 ml	Euthyroid volunteers HORMONES; MEASUREMENT METHODS; BLOOD SERUM; TEXAS	Brown, M.L. Metheany, J. 1974 Journal of Pharmaceutical Sciences 63(8):1214-1217

Tin
7440-31-5
Sn
AtW 118.69, MP 231.9 C, BP 2507 C, VP 1 mm Hg at 1610 C, 10 mm Hg at 1890 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4503 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4504 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA ; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.
4505 Kidney		NA	a) 8 b) 19	a) < 0.3-6.87 ug/g b) < 0.3-4.26 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

(NEXT PAGE)

Tin
7440-31-5
Sn
Atw 118.69, MP 231.9 C, BP 2507 C, VP 1 mm Hg at 1610 C, 10 mm Hg at 1890 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4506 Liver		NR	a) 8 b) 19	a) < 0.3-3.18 ug/g b) 0.3-3.70 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4507 Lung		NR	a) 8 b) 19	a) 0.3-2.15 ug/g b) 0.3-3.68 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, VP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4508 Aorta		NA	2	< or = 2.8 ug/g (wet wt)	1.4 + or - 2.0 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODINE; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4509 Brain		NA		a) None detected b) < or = 9.5 ug/g (wet wt) c) < or = 1.4 ug/g (wet wt) d) < or = 3.6 ug/g (wet wt)	a) None detected b) 4.8 + or - 6.7 ug/g (wet wt) c) 0.36 + or - 0.62 ug/g (wet wt) d) 1.3 + or - 1.8 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 7 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IODINE; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4510 Breath	Inhalation	PIXE	1	Not given	12.2 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4511 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, VP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
#512 Heart		NA	a) 4 b) 2	a) < or = 1.1 ug/g (wet wt) b) None detected	a) 0.28 + or - 0.55 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
#513 Kidney		NA	a) 7 b) 2	a) < or = 3.5 ug/g (wet wt) b) None detected	a) 0.50 + or - 1.3 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
#514 Liver		NA	a) 11 b) 4	a) < or = 9.6 ug/g (wet wt) b) None detected	a) 2.4 + or - 3.9 ug/g (wet wt) b) None detected	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, VP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4515 Lung		NA	a) 2 b) 2	a) < or = 2.7 ug/g (wet wt) b) 0.60-15 ug/g (wet wt)	a) 1.4 + or - 1.9 ug/g (wet wt) b) 7.8 + or - 10 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4516 Muscle		NA	a) 4 b) 8	a) None detected b) < or = 0.65 ug/g (wet wt)	a) None detected b) 0.08 + or - 0.23 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4517 Pancreas		NA	a) 5 b) 2	a) < or = 7.5 ug/g (wet wt) b) < or = 3.7 ug/g (wet wt)	a) 1.3 + or - 2.2 ug/g (wet wt) b) 1.9 + or - 2.6 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, VP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8518 Spleen		NA	a) 5 b) 3	a) < or = 4.2 ug/g (wet wt) b) < or = 6.4 ug/g (wet wt)	a) 1.8 + or - 1.8 ug/g (wet wt) b) 2.7 + or - 3.7 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCHIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44

Toluene (8 CI)
Benzene, methyl- (9 CI)
108-88-3
C7-H8
MW 92.13, MP -95 to -94.5 C, BP 110.6 C, VP 36.7 mm Hg at 30 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8519 Blood	Inhalation	GC	8	a) 0.09-0.28 ug/ml b) 0.44-2.29 ug/ml c) 2.3-4.75 ug/ml d) 6.99-17.10 ug/ml	a) 0.12 ug/ml b) 1.21 ug/ml c) 3.63 ug/ml d) 11.60 ug/ml	a) Before exposure - Monday of 1st wk b) Before exposure - Friday of 2nd wk c) After exposure - Monday of 1st wk d) After exposure - Monday of 2nd wk Workers, 21-56 yr old, in plastic processing factory. GERMANY; BLOOD; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS	Konietzko, H. Keilbach, J. Drysch, K. 1980 International Archives of Occupational and Environmental Health 46:53-58
8520 Breath		GC/MS	8	Not detected-64.0 ug/hr	10.1 ug/hr	Previous exposure to compound. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

(NEXT PAGE)

Toluene (8 CI)
Benzene, methyl- (9 CI)
108-88-3
C7-H8
MW 92.13, MP -95 to -94.5 C, BP 110.6 C, VP 36.7 mm Hg at 30 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4521 Breath		GC-MS	54 (387 samples)	Not given	8.4 ng/l Geometric	Measured at 25 C and 760 mm Hg 100% occurrence Lower and upper one-Sigma limits 4.0 and 17.7 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Toluene-2,5-diamine (8 CI)
1,4-Benzenediamine, 2-methyl- (9 CI)
95-70-5
C7-H10-N2
MW 122.17, MP 64 C, BP 274 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4522 Urine						Review. Local and systemic effects relating to hair dye formulation, ingredient tests, and experiences in man and animals. ADULTS; DERMATITIS; NEOPLASMS; URINE; IN VITRO ANALYSIS; IN VIVO ANALYSIS; REVIEW; DYES; CARCINOGEN; COSMETICS; GENETIC EFFECTS; HEALTH HAZARDS; METABOLISM; METABOLITES	Marzulli, F.N. Green, S. Maibach, H.I. 1978 Journal of Environmental Pathology and Toxicology 1:509-530

Toluene, o-nitro- (8 CI)
Benzene, 1-methyl-2-nitro- (9 CI)
88-72-2
C7-H7-N-O2
MW 137.1, MP -4.1 C, BP 222.3 C, VP 1 mm Hg at 50 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4523 Breath		GC-MS	54 (387 samples)	Not given	0.040 ng/l Geometric	Measured at 25 C and 760 mm Hg 19.1% occurrence Lower and upper one-Sigma limits 0.017 and 0.139 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Total BHC (No postings in CHEMLINE).
58-89-9
C6-H6-Cl6
MW 290.85

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4524 Blood		GC-EC	a) 25 b) 15 c) 10	a) 18-85 ppb b) 62-166 ppb c) 105-550 ppb	a) 52.5 + or - 18.2 ppb b) 93.8 + or - 22.6 ppb c) 209.2 + or - 141.2 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9
4525 Placenta		GC-EC	a) 25 b) 15 c) 10	a) 12-53 ppb b) 41-105 ppb c) 31-130 ppb	a) 27.2 + or - 11.4 ppb b) 62.3 + or - 18.4 ppb c) 90.7 + or - 31.7 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

Total DDT (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4526 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

(NEXT PAGE)

Total DDT (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4527 Amniotic fluid		GC-EC	50	0.5-26.4 ppb	23.83 ppb Geometric	43 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
4528 Blood						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4529 Blood, plasma			a) 23 b) 20	a) Not given b) Not given	a) 38.88 ppb b) 6.69 ppb	a) Exposed b) Controls Men from South Carolina Pesticide Study exposed to mixture of DDT, parathion and carbaryl. Controls, with no known pesticide exposure, matched with exposed group for age, race, sex and wt. Significant correlations of DDT elevation and cholinesterase depression with elevated systolic and diastolic blood pressures. SOUTH CAROLINA; BLOOD PLASMA; DDT; PESTICIDES; METABOLISM; OCCUPATIONAL HAZARDS	Richardson, J.A. Keil, J.E. Sandifer, S.H. 1975 Environmental Research 9:290-294

(NEXT PAGE)

Total DDT (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4530 Blood, serum						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4531 Placenta		GC-EC	50	9-1134 ppb	200.91 ppb Geometric	45 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251

trans-4-nonenal (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4532 Breath		GC-MS	54 (387 samples)	Not given	1.7 ng/l Geometric	Measured at 25 C and 760 mm Hg 10.9% occurrence lower and upper one-Sigma limits 0.41 and 7.0 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

Tryptophan, 5-hydroxy-, L- (8 CI)
L-Tryptophan, 5-hydroxy- (9 CI)
4350-09-8
C11-H12-N2-O3
MW 220.22

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4533 Blood, plasma	Injection Ingestion	HPLC Fluorometry	5	a) 2.3-0.29 umoles/l b) Not given c) Not given d) Not given e) Not given	a) 0.974 + or - 0.068 umoles/l b) 3.25 umoles/l c) 5.50 umoles/l d) 7.81 umoles/l e) 11.00 umoles/l	a) Initial measurement and 9 hr after 20 min IV of 0.908 umoles/kg. Biexponential decline. Mean is 9 hr time-average b) 50 mg dose c) 100 mg dose d) 150 mg dose e) 200 mg dose b)-e) 8 hr time-average means computed from graphic area-under-the-curve data after oral dose/8 hr 19-52 yr olds, wt 52-86 kg, with myoclonic disorders. Nausea, vomiting DRUGS; DRUG THERAPY; AMINO ACIDS; BLOOD PLASMA; NEUROMUSCULAR DISEASES; ADULTS; DENMARK	Magnussen, I. Nielsen-Kudsk, F. 1980 Acta Pharmacologica et Toxicologica 46:257-262

Tungsten
7440-33-7
W
At% 183.85, MP 3410 C, BP 5900 C, VP 1 mm Hg at 3980 C, 10 mm Hg at 4490 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4534 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75

(NEXT PAGE)

Tungsten
7440-33-7
W
AtW 183.85, MP 3410 C, BP 5900 C, VP 1 mm Hg at 3980 C, 10 mm Hg at 4490 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4535 Kidney		NA	a) 8 b) 19	a) < 0.003-0.005 ug/g b) < 0.003-0.018 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4536 Liver		NA	a) 8 b) 19	a) < 0.003-0.036 ug/g b) < 0.003-0.014 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4537 Lung		NA	a) 8 b) 19	a) < 0.003-0.011 ug/g b) < 0.003-0.15 ug/g Wet wt	a) Not given b) Not given	a) Controls b) Workers, groups I and II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35

Uranium
7440-61-1
U
AtW 238.029, MP 1132 C, BP 3818 C, VP 100 mm Hg at 3270 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4538 Hair		NA	5	0.25-10.4 ug/g	Not given	Bulk hair samples Workers exposed intermittently to uranium at the Australian Atomic Energy Commission Research Establishment. AUSTRALIA; HAIR; URANIUM; MEASUREMENT METHODS; OCCUPATIONAL HAZARDS; RADIONUCLIDES; INDUSTRIAL HYGIENE	Bentley, K.W. Wyatt, J.H. 1980 Environmental Research 21:407-415

Vanadium
7440-62-2
V
AtW 50.9414, MP 1917 C, BP 3000 C, VP 1 mm Hg at 2290 C, 10 mm Hg at 2570 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4539 Aorta		NA	2	0.12-0.31 ug/g (wet wt)	0.33 + or - 0.13 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4540 Blood, whole		Catalysis	89	Not detected-2 ug/100 ml	Not given	Subjects from 17 collection sites in the U.S. SELENIUM; MOLYBDENUM; VANADIUM; BLOOD; SEX; SOUTH DAKOTA; NEW YORK; WYOMING; MONTANA; OHIO; MISSISSIPPI; TEXAS; NORTH DAKOTA; WASHINGTON; CALIFORNIA; ARIZONA; INDIANA; LOUISIANA; ARKANSAS; FLORIDA; VERMONT; TRACE ELEMENTS	Allaway, W.H. Kubota, J. Losee, F. Roth, M. 1968 Archives of Environmental Health 16:342-348
4541 Brain		NA		a) Not given b) 0.04-0.33 ug/g (wet wt) c) 0.03-0.23 ug/g (wet wt) d) 0.10-0.31 ug/g (wet wt)	a) 0.11 + or - 0.09 ug/g (wet wt) b) 0.18 + or - 0.21 ug/g (wet wt) c) 0.10 + or - 0.06 ug/g (wet wt) d) 0.20 + or - 0.10 ug/g (wet wt)	a) Males, cerebrum, 9 subjects b) Females, cerebrum, 2 subjects c) Males, cerebellum, 7 subjects d) Females, cerebellum, 5 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Vanadium
7440-62-2
V
AtW 50.9414, MP 1917 C, BP 3000 C, VP 1 mm Hg at 2290 C, 10 mm Hg at 2570 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4542 Breath	Inhalation	PIXE	1	Not given	0.7 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. Near detection limit. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238
4543 Hair		NA	a) 16 b) 14 c) 12 d) 11 e) 11 f) 10	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.04 + or - 0.01 ug/g b) 0.04 + or - 0.02 ug/g c) 0.01 + or - 0.01 ug/g d) 0.49 + or - 0.12 ug/g e) 0.54 + or - 0.54 ug/g f) 0.22 + or - 0.14 ug/g	a) Controls, at birth b) Full-term low birthweight, at birth c) Pre-term, at birth d) Controls, 3 mo e) Full-term low birthweight, 3 mo f) Pre-term, 3 mo Medians + or - SEM Neonates in Halifax. Pre-term group mean birthweight 1880 g, 26-36 wk gestation, full-term low birthweight group mean birth weight 2371 g, 38-42 wk gestation, and full-term controls mean birthweight 3590 g, 38-42 wk gestation. HAIR; METALS; ZINC; COPPER; MANGANESE; VANADIUM; IODINE; INFANTS; SEX	Gibson, R.S. Dewolfe, M.S. 1980 Nutrition Reports International 21(3):341-349
4544 Hair		NA	a) 42 b) 40	a) 0.005-0.564 ug/g b) 0.007-0.201 ug/g	a) 0.062 ug/g b) 0.036 ug/g Medians	a) Controls b) Multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000
4545 Hair						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Vanadium
7440-62-2
V
AtW 50.9414, MP 1917 C, BP 3000 C, VP 1 mm Hg at 2290 C, 10 mm Hg at 2570 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4546 Heart		NA	a) 4 b) 2	a) 0.04-0.19 ug/g (wet wt) b) 0.21-0.23 ug/g (wet wt)	a) 0.09 + or - 0.07 ug/g (wet wt) b) 0.22 + or - 0.01 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4547 Kidney		NA	a) 7 b) 2	a) 0.08-0.22 ug/g (wet wt) b) Not given	a) 0.13 + or - 0.05 ug/g (wet wt) b) 0.02 + or - 0.03 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4548 Liver		NA	a) 11 b) 3	a) Not given b) Not given	a) 0.12 + or - 0.07 ug/g (wet wt) b) 0.09 + or - 0.12 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Vanadium
7440-62-2
V
AtW 50.9414, MP 1917 C, BP 3000 C, VP 1 mm Hg at 2290 C, 10 mm Hg at 2570 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4549 Lung		NA	a) 2 b) 2	a) 0.10-0.24 ug/g (wet wt) b) 0.08-0.09 ug/g (wet wt)	a) 0.17 + or - 0.10 ug/g (wet wt) b) 0.09 + or - 0.00 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4550 Muscle		NA	a) 4 b) 8	a) 0.03-0.22 ug/g (wet wt) b) Not given	a) 0.12 + or - 0.09 ug/g (wet wt) b) 0.11 + or - 0.06 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4551 Nail						A review of world literature on the accumulation and bioconcentration of selected toxic trace metals in human hair and nails and other mammalian hair, fur, nails, claws and hoofs. Tabulated by geographic area, subjects, sex, age, exposure gradient, analyses in ppm, and authority from over 400 references. AFRICA; AUSTRALIA; CANADA; CENTRAL AMERICA; EUROPE; MIDDLE EAST; NEW ZEALAND; SOUTH AMERICA; SOUTHEAST ASIA; UNITED KINGDOM; UNITED STATES; HAIR; NAILS; REVIEW; ANTIMONY; ARSENIC; BORON; CADMIUM; CHROMIUM; COBALT; COPPER; LEAD; MERCURY; NICKEL; SELENIUM; TIN; VANADIUM; AIR POLLUTION; ANIMAL POPULATIONS; BIOACCUMULATION; BIOINDICATORS; LAND POLLUTION; POPULATION EXPOSURE; WATER POLLUTION; TRACE ELEMENTS; METALS	Jenkins, D.W. 1979 EPA-600/4-79-049, 184 pp.

(NEXT PAGE)

Vanadium
7440-62-2
V
Atw 50.9414, MP 1917 C, BP 3000 C, VP 1 mm Hg at 2290 C, 10 mm Hg at 2570 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4552 Pancreas		NA	a) 5 b) 2	a) 0.06-0.15 ug/g (wet wt) b) 0.11-0.23 ug/g (wet wt)	a) Not given b) 0.17 + or - 0.09 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4553 Spleen		NA	a) 5 b) 3	a) 0.11 ug/g (wet wt) b) 0.07-0.23 ug/g (wet wt)	a) 0.04 + or - 0.06 ug/g (wet wt) b) 0.14 + or - 0.08 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

Vitamin A
11103-57-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4554 Blood, plasma			a) 10 b) 8 c) Not given	a) Not given b) Not given c) Not given	a) 16.3 + or - 3.4 ug/dl b) 9.1 + or - 1.8 ug/dl c) 52.0 + or - 4.7 ug/dl	a) Severe protein-calorie malnutrition, no vitamin A deficiency b) Severe protein-calorie malnutrition and vitamin A deficiency c) Healthy controls Malnourished Thai children, ages 12-60 mo. Controls, Thai children, ages 12-84 mo, same socioeconomic background as malnourished. THAILAND; CHILDREN; BLOOD PLASMA; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS; PROTEINS; VITAMIN A; VITAMINS	Smith, F.R. Suskind, R. Thanangkul, O. Leitzmann, C. Goodman, D.S. Olson, R.E. 1975 American Journal of Clinical Nutrition 28:732-738

(NEXT PAGE)

Vitamin A
11103-57-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4555 Blood, serum				a) Not given b) Not given c) Not given d) Not given	a) 28.5 + or - 1.4 ug/dl b) 27.6 + or - 1.9 ug/dl c) 29.7 + or - 2.2 ug/dl d) 36.7 + or - 1.6 ug/dl (S.E.)	a) 102 migrant children b) 59 boys from a) c) 83 girls from a) d) Controls from other studies 35.3% of a) had <20 ug/dl 2-69 mo olds, below 3rd percentile in ht, wt, and head circumference, children of Mexican-American farm workers. Controls, young, middle-class children, Colorado. VITAMIN A; CHILDREN; ZINC; HAIR; BLOOD PLASMA; BLOOD SERUM; COMPARATIVE EVALUATIONS; TRACE ELEMENTS; COLORADO	Chase, H.P. Rambidge, K.M. Barnett, S.E. Houts-Jacobs, M.J. Lenz, K. Gillespie, J. 1980 American Journal of Clinical Nutrition 33:2346-2349

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4556 Adrenal gland		AAS		a) Not given b) 14.0-32.1 ug/g wet wt	a) 25.8 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4557 Aorta		NA	3	5.1-16 ug/g (wet wt)	11 + or - 5.6 ug/g (wet wt)	Males From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Zinc
7440-66-6
Zn
Atw 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4558 Aorta		AAS	a) 1 b) 5	a) Not given b) 11.9-26.1 ug/g wet wt	a) 27.1 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Moshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4559 Blood, cells		AAS	150	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 18.7 + or - 6.1 ug/g Hb b) 27.6 + or - 3.6 ug/g Hb c) 37.4 + or - 4.4 ug/g Hb d) 42.3 + or - 4.2 ug/g Hb e) 42.2 + or - 5.6 ug/g Hb f) 0.093 + or - 0.022 ug/10(E+7) cells g) 0.129 + or - 0.033 ug/10(E+7) cells	a) Erythrocytes, 13 1-6 mo olds b) Erythrocytes, 16 7-12 mo olds c) Erythrocytes, 27 6-10 yr olds d) Erythrocytes, 21 11-15 yr olds e) Erythrocytes, 52 adults f) Leukocytes, 6 6-10 yr olds g) Leukocytes, 18 adults Healthy subjects. ZINC; ADULTS; CHILDREN; JAPAN; METALS; BLOOD PLASMA; ERYTHROCYTES; LEUKOCYTES; AGE	Nishi, Y. 1980 Hiroshima Journal of Medical Sciences 29(1):7-13
4560 Blood, plasma		AAS	a) 13 b) 21 c) 21 d) 52	a) Not given b) Not given c) Not given d) Not given	a) 79.5 + or - 13.6 ug/dl b) 94.8 + or - 17.9 ug/dl c) 101.0 + or - 22.6 ug/dl d) 95.9 + or - 18.6 ug/dl	a) 1-6 mo old b) 1-5 yr old c) 11-15 yr old d) Adults Healthy subjects ZINC; ADULTS; CHILDREN; JAPAN; METALS; BLOOD PLASMA; ERYTHROCYTES; LEUKOCYTES; AGE	Nishi, Y. 1980 Hiroshima Journal of Medical Sciences 29(1):7-13
4561 Blood, plasma			a) 70 b) 60	a) 54.3-131.2 ug/100 ml b) 40.8-144.1 ug/100 ml	a) 91.2 + or - 1.8 ug/100 ml b) 77.2 + or - 2.1 ug/100 ml (S.E.)	a) Controls b) Residents of polluted area Women, mean age 82.3 yr, from Cd-polluted area (Liege), and controls, mean age 81.1 yr, from Charleroi, Belgium. BLOOD; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; ZINC; METALS; BELGIUM; AGE; POPULATION EXPOSURE; INDUSTRIAL POLLUTION; SHELTERS; KIDNEY DISEASES	Lauwerys, R. Roels, H. Bernard, A. Buchet, J.P. 1980 International Archives of Occupational and Environmental Health 45:271-274
4562 Blood, plasma				a) Not given b) Not given c) Not given d) Not given	a) 73.0 + or - 1.1 ug/dl b) 74.3 + or - 1.6 ug/dl c) 71.4 + or - 1.5 ug/dl d) 84.2 + or - 2.9 ug/dl (S.E.)	a) 94 migrant children b) 53 boys from a) c) 41 girls from a) d) Controls from other studies Hypozincemia (<68 ug/dl) in 37.2% of a) 2-69 mo olds, below 3rd percentile in ht, wt, and head circumference, children of Mexican-American farm workers. Controls, young, middle-class children, Colorado. VITAMIN A; CHILDREN; ZINC; HAIR; BLOOD PLASMA; BLOOD SERUM; COMPARATIVE EVALUATIONS; TRACE ELEMENTS; COLORADO	Chase, H.P. Hambidge, K.M. Barnett, S.E. Houts-Jacobs, M.J. Lenz, K. Gillespie, J. 1980 American Journal of Clinical Nutrition 33:2346-2349

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4563 Blood, plasma	Inhalation	AAS	a) 60 b) 45 c) 70	a) 40.8-144.1 ug/100 ml b) 61.9-116.5 ug/100 ml c) 54.3-131.2 ug/100 ml	a) 76.6 ug/100 ml b) 85.7 ug/100 ml c) 89.9 ug/100 ml Geometric	a) Residents of Liege (most polluted area) b) Residents of Brussels (less polluted area) c) Residents of Charleroi (control area) Decreases with an accumulation of Cd Healthy subjects >60 yr old, residents of the same areas 25 yr, Belgium BELGIUM; ADULTS; AGE; BLOOD PLASMA; URINE; CADMIUM; LEAD; MERCURY; METALS; ZINC; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS	Roels, H.A. Lauwerys, R.R. Buchet, J-P Bernard, A. 1981 Environmental Research 24:117-130
4564 Blood, serum	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
4565 Blood, serum		AAS	a) 260 b) 260	a) Not given b) Not given	a) 1.49 + or - 0.05 mg/l b) 4.28 + or - 0.82 mg/lg	a) Kansas City, KS, hard-water area b) Kansas City, MO, soft-water area Significantly lower level ($P<0.01$) in hard-water area. KS and MO residents matched for age (mean ages 37 and 37.7 yr), sex, length of residence, marital and economic status, occupation, number of children, smoking habits, ht, wt. In hard-water area, significant increase in hypertension, ECG abnormalities, and hyperuricemia. KANSAS; MISSOURI; ADULTS; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS; CADMIUM; CALCIUM; CHROMIUM; LITHIUM; MAGNESIUM; PHOSPHOROUS; POTASSIUM; SODIUM; ZINC; BIOACCUMULATION; DRINKING WATER	Bierenbaum, M.L. Fleischman, A.I Dunn, J. Arnold, J. 1975 Lancet 1(1918):1008-1016
4566 Blood, serum	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 113 + or - 50 ug/ml b) 97 + or - 15 ug/ml c) 88 + or - 13 ug/ml d) 100 + or - 12 ug/ml	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from previous study. Estimated daily dietary intake 8.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4567 Bone marrow		AAS	a) 1 b) 5	a) Not given b) 1.9-12.5 ug/g wet wt	a) 10.4 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4568 Brain		NA		a) 8.4-17 ug/g (wet wt) b) 7.4-9.2 ug/g (wet wt) c) 9.7-17 ug/g (wet wt) d) 7.8-22 ug/g (wet wt)	a) 11 + or - 3.0 ug/g (wet wt) b) 8.4 + or - 0.9 ug/g (wet wt) c) 13 + or - 2.6 ug/g (wet wt) d) 14 + or - 6.0 ug/g (wet wt)	a) Males, cerebrum, 8 subjects b) Females, cerebrum, 3 subjects c) Males, cerebellum, 6 subjects d) Females, cerebellum, 4 subjects From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasunoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4569 Brain		AAS		a) Not given b) 11.0-12.8 ug/g c) Not given d) Not given	a) 11.4 ug/g b) Not given c) 13.5 ug/g d) 14.0 ug/g Wet wt	a) Worker - cerebrum (occipital) b) 5 controls - cerebrum (frontal) c) Worker - cerebellum d) 1 control - cerebellum Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4570 Breath	Inhalation	PIXE	1	Not given	4.4 ng	6 l sampled at rate of 1 l/min, 2-10 min after burning 4 arc welding rods. University physics shop, Florida FLORIDA; ADULTS; BREATH; CALCIUM; CHLORINE; CHROMIUM; COPPER; IRON; LEAD; MANGANESE; NICKEL; POTASSIUM; SULFUR; TITANIUM; VANADIUM; ZINC; AIR POLLUTION; FUMES; INDUSTRIAL ATMOSPHERES; TRACE ELEMENTS	Akselsson, K.R. Desaedeleer, G.G. Johansson, T.B. Winchester, J.W. 1976 Annals of Occupational Hygiene 19:225-238

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4571 Hair		AAS	a) 31 b) 22	a) Not given b) Not given	a) 139 ppm b) 140 ppm	a) Learning disabled b) Controls Learning disabled and normal 3rd and 4th grade students in Canada. CALCIUM; MAGNESIUM; POTASSIUM; SODIUM; CADMIUM; COBALT; COPPER; IRON; LEAD; MANGANESE; ZINC; CHROMIUM; LITHIUM; MERCURY; METALS; HAIR; CHILDREN; CANADA	Pihl, R.O. Parkes, M. 1977 Science 198(4313):204-206
4572 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 Science of the Total Environment 14:53-75
4573 Hair	Ingestion	ASV	1	126.6-203.4 ug/g	167.1 + or - 16.9 ug/g	Beard hair - 10 wk period. Daily doses of 100-300 mg Zn. 29 determinations. Australia AUSTRALIA; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; LEAD; METALS; TRACE ELEMENTS; ZINC	Chittleborough, G. Steel, B.J. 1980 Science of the Total Environment 15:25-35
4574 Hair		AAS	2	a) Not given b) Not given c) Not given d) Not given	a) 170 ug/g b) 142 ug/g c) 135 ug/g d) 258 ug/g	a) 10 mo old, on admission b) 11 mo old, on admission c) 10 mo old, recovered d) 11 mo old, recovered Copper-deficient children. CASE HISTORIES; CHILDREN; DISEASES; HAIR; COPPER; METALS; ZINC	Bradfield, R.B. Cordano, A. Baertl, J. Graham, G.G. 1980 Lancet 2(8190):343-344

(NEXT PAGE)

Zinc
7440-66-6
Zn
A+W 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4575 Hair		NA	a) 16 b) 22 c) 13 d) 11 e) 15 f) 22 g) 10 h) 18 i) 13 j) 3 k) 7 l) 12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given k) Not given l) Not given	a) 218 + or - 9 ug/g b) 225 + or - 9 ug/g c) 200 + or - 32 ug/g d) 225 + or - 16 ug/g e) 232 + or - 22 ug/g f) 225 + or - 296 ug/g g) 105 + or - 37 ug/g h) 245 + or - 52 ug/g i) 140 + or - 49 ug/g j) 260 + or - 87 ug/g k) 180 + or - 41 ug/g l) 175 + or - 118 ug/g	a) Controls, at birth, males b) Controls, at birth, females c) Full-term low birthweight, at birth, males d) Full-term low birthweight, at birth, females e) Pre-term, at birth, males f) Pre-term, at birth, females g) Controls, 3 mo, males h) Controls, 3 mo, females i) Full-term low birthweight, 3 mo, males j) Full-term low birthweight, 3 mo, females k) Pre-term, 3 mo, males l) Pre-term, 3 mo, females Medians + or - SE Neonates in Halifax. Pre-term group mean birthweight 1880 g, 26-36 wk gestation, full-term low birthweight group mean birth weight 2371 g, 38-42 wk gestation, and full-term controls mean birthweight 3590 g, 38-42 wk gestation. HAIR; METALS; ZINC; COPPER; MANGANESE; VANADIUM; IODINE; INFANTS; SEX	Gibson, R.S. Dewolfe, M.S. 1980 Nutrition Reports International 21(3):341-349
4576 Hair		NA	a) 23 b) 19 c) 42 d) 14 e) 26 f) 40	a) 108-190 ug/g b) 120-357 ug/g c) 108-357 ug/g d) 103-198 ug/g e) 139-318 ug/g f) 103-318 ug/g	a) 150 ug/g b) 167 ug/g c) 161 ug/g d) 145 ug/g e) 168 ug/g f) 166 ug/g Medians	a) Male controls b) Female controls c) All controls d) Male multiple sclerosis patients e) Female multiple sclerosis patients f) All multiple sclerosis patients Samples from 7 scalp sites in each subject CANADA; ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; HAIR; ALUMINUM; BROMINE; CALCIUM; CHLORINE; COPPER; GOLD; IODINE; MANGANESE; METALS; SELENIUM; SILVER; SODIUM; SULFUR; VANADIUM; ZINC	Ryan, D.E. Holzbecher, J. Stuart, D.C. 1978 Clinical Chemistry 24(11):1996-2000
4577 Hair	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
4578 Hair		AAS	a) 17 b) 17 c) 30 d) 30	a) Not given b) Not given c) Not given d) Not given	a) 216.2 + or - 43.2 ug/g b) 239.7 + or - 108.5 ug/g c) 181.6 + or - 31.4 ug/g d) 235.2 + or - 47.2 ug/g	a) Mothers of infants with spina bifida b) Infants with spina bifida c) Control mothers d) Control infants Newborn with cystic spina bifida, and their mothers. Normal controls. HAIR; ZINC; INFANTS; PREGNANCY; TRACE ELEMENTS; GERMANY	Bergmann, K.E. Makosch, G. Tews, K.-H. 1980 American Journal of Clinical Nutrition 33:2145-2150

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4579 Hair		AAS	a) 11 b) 13 c) 17 d) 28 e) 14 f) 14	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 138.6 + or - 64.1 ug/g b) 159.1 + or - 98.7 ug/g c) 108.2 + or - 47.0 ug/g d) 164.8 + or - 83.0 ug/g e) 106.1 + or - 47.7 ug/g f) 121.7 + or - 50.7 ug/g	a) 6-11 mo old boys b) 6-11 mo old girls c) 12-23 mo old boys d) 12-23 mo old girls e) 24-35 mo old boys f) 24-35 mo old girls Low income Costa Rican 6 mo-4 yr olds ZINC; COSTA RICA; CHILDREN; INFANTS; RURAL AREAS; HAIR; SEX; TRACE ELEMENTS	O'Leary, M.J. Mata, L.J. Hegarty, P.V.J. 1980 American Journal of Clinical Nutrition 33(10):2194-2197
4580 Hair			a) 96 b) 42	a) Not given b) Not given	a) 94.7 + or - 5.3 ug/g b) 130.7 + or - 8.3 ug/g	a) Migrant children b) Controls from other studies a) and b) differed p<0.001 2-69 mo olds, below 3rd percentile in ht, wt, and head circumference, children of Mexican-American farm workers. Controls, young, middle-class children, Colorado. VITAMIN A; CHILDREN; ZINC; HAIR; BLOOD PLASMA; BLOOD SERUM; COMPARATIVE EVALUATIONS; TRACE ELEMENTS; COLORADO	Chase, H.P. Hambidge, K.M. Barnett, S.E. Houts-Jacobs, M.J. Lenz, K. Gillespie, J. 1980 American Journal of Clinical Nutrition 33:2346-2349
4581 Hair	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 259 + or - 127 ug/g b) 241 + or - 68 ug/g c) 163 + or - 60 ug/g d) 144 + or - 63 ug/g	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from previous study. Estimated daily dietary intake 4.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428
4582 Heart		NA	a) 10 b) 8	a) 7.0-43 ug/g (wet wt) b) 4.9-25 ug/g (wet wt)	a) 24 + or - 12 ug/g (wet wt) b) 17 + or - 8.9 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCMIUM; COPPER; IRON; MERCURY; IODIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4583 Kidney		AAS		a) Not given b) Not given c) 1759-3278 ppm d) 1682-7000 ppm Ash wt	a) 3653 ppm b) 3020 ppm c) 2511 ppm d) 3551 ppm Ash wt	a) 17 cancer patients b) 58 non-cancer patients c) 10 non-smokers (never smoked) d) 5 smokers, 1.5 packs/day Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CAROLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963
4584 Kidney		NA	a) 21 b) 3	a) 9.1-96 ug/g (wet wt) b) 9.4-46 ug/g (wet wt)	a) 39 + or - 24 ug/g (wet wt) b) 33 + or - 20 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4585 Kidney		AAS	a) 1 b) 5	a) Not given b) 31.1-66.6 ug/g wet wt	a) 38.8 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
#586 Kidney		AAS	a) 8 b) 9 c) 12	a) 18-47 ug/g b) 19-55 ug/g c) 17-42 ug/g Wet wt	a) 25 ug/g b) 32.5 ug/g c) 25.0 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
#587 Kidney	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food poisoning techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
#588 Liver		AAS		a) Not given b) Not given c) 3220-12850 ppm d) 720-5800 ppm Ash wt	a) 5063 ppm b) 4120 ppm c) 6068 ppm d) 3297 ppm Ash wt	a) 17 cancer patients b) 58 non-cancer patients c) Two 10-19 yr olds d) Three 30-39 yr olds Autopsies from hospitals in North and South Carolina. Blacks and Caucasians. Adults, ages 16-91 yr. Children, ages 4 days-6 yr. METALS; BONES; LIVER; KIDNEYS; ADULTS; CHILDREN; CADMIUM; ZINC; LEAD; NORTH CAROLINA; SOUTH CARCLINA; AUTOPSIES; BIOACCUMULATION; RACIAL STUDIES; AGE; SMOKING; TOBACCOS; SEX; NEOPLASMS	Hammer, D.I. Calocci, A.V. Hasselblad, V. Williams, M.E. Pinkerson, C. 1973 Journal of Occupational Medicine 15(12):956-963
#589 Liver		NA	a) 8 b) 7	a) 35-180 ug/g (wet wt) b) 17-91 ug/g (wet wt)	a) 97 + or - 59 ug/g (wet wt) b) 50 + or - 24 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4590 Liver		AAS	a) 1 b) 5	a) Not given b) 42.0-107 ug/g wet wt	a) 123 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, H. Moshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4591 Liver		AAS	a) 8 b) 9 c) 11	a) 30-99 ug/g b) 22-103 ug/g c) 19-154 ug/g Wet wt	a) 41.0 ug/g b) 47.0 ug/g c) 66.5 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker group II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4592 Liver	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food poisoning techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8
4593 Lung		NA	a) 3 b) 2	a) 4.3-12 ug/g (wet wt) b) 10-16 ug/g (wet wt)	a) 8.5 + or - 3.8 ug/g (wet wt) b) 13 + or - 4.2 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4594 Lung		AAS		a) Not given b) 10.0-13.7 ug/g c) Not given d) 12.0-19.1 ug/g e) Not given f) 7.5-12.1 ug/g Wet wt	a) 8.5 ug/g b) Not given c) 13.3 ug/g d) Not given e) 12.8 ug/g f) Not given Wet wt	a) Worker, right upper lobe b) 5 controls, right upper lobe c) Worker, right middle lobe d) 5 controls, right middle lobe e) Worker, left lower lobe f) 5 controls, left lower lobe Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4595 Lung		AAS	a) 8 b) 9 c) 11	a) 6.4-24 ug/g b) 6.2-16 ug/g c) 4.5-15.3 ug/g Wet wt	a) 10.7 ug/g b) 8.33 ug/g c) 10.6 ug/g Wet wt Medians	a) Controls b) Worker group I c) Worker grcup II Deceased refinery and smelter workers, ages 55-76 yr, exposed to heavy metals 1-3 decades. Time between retirement and death 0-1.5 yr in group I and 2-19 yr, group II. Controls, ages 43-72 yr, who lived 50 km from the factory. Sweden. SWEDEN; CADAVERS; KIDNEYS; LIVER; LUNGS; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; TELLURIUM; CADMIUM; CESIUM; CHROMIUM; COBALT; COPPER; GOLD; IRON; LANTHANUM; LEAD; MANGANESE; MERCURY; MOLYBDENUM; PHOSPHORUS; RUBIDIUM; SCANDIUM; SELENIUM; SILVER; TIN; TUNGSTEN; ZINC; HEALTH HAZARDS; INDUSTRIAL PLANTS; SMELTERS	Brune, D. Nordberg, G. Wester, P.O. 1980 Science of the Total Environment 16:13-35
4596 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food poisoning techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

(NEXT PAGE)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4597 Muscle		NA	a) 6 b) 4	a) 18-73 ug/g (wet wt) b) 11-72 ug/g (wet wt)	a) 51 + or - 19 ug/g (wet wt) b) 45 + or - 25 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CERCHIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4598 Muscle		AAS	1	Not given	66.0 ug/g wet wt	Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, M. Hoshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4599 Nail		NA	a) 9 b) 11	a) Not given b) Not given	a) 188 + or - 75 ppm b) 153 + or - 68 ppm Dry wt	a) Women b) Men Left thumb Also reviewed: known levels 30 other elements Healthy 20-60 yr olds ADULTS; SEX; NAILS; REVIEW; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CALCIUM; CESIUM; CHROMIUM; COBALT; COPPER; GERMANIUM; GOLD; IRON; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SCDIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; ZIRCONIUM	Kanabrocki, E.L. Kanabrocki, J.A. Greco, J. Kaplan, E. Oester, Y.T. Brar, S.S. Gustafson, P.S. Nelson, D.H. Moore, C.E. 1979 Science of the Total Environment 13:131-140
4600 Nail	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 111 + or - 21 ug/g b) 144 + or - 102 ug/g c) 148 + or - 45 ug/g d) 179 + or - 112 ug/g	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from previous study. Estimated daily dietary intake 8.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, B.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.39, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4601 Pancreas		NA	a) 7 b) 3	a) 19-43 ug/g (wet wt) b) 32-40 ug/g (wet wt)	a) 29 + or - 9.5 ug/g (wet wt) b) 36 + or - 4.0 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; INDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, M. 1980 Archives of Environmental Health 35(1):36-44
4602 Pancreas		AAS	a) 1 b) 5	a) Not given b) 21.1-61.4 ug/g wet wt	a) 37.2 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4603 Pharynx		AAS	a) 1 b) 5	a) Not given b) 15.7-22.7 ug/g wet wt	a) 22.2 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150
4604 Skin		AAS	a) 1 b) 5	a) Not given b) 5.1-7.9 ug/g wet wt	a) 10.1 ug/g wet wt b) Not given	a) Worker b) Controls Japanese worker, 65 yr old, at chromate producing plant for 30 yr. Died of maxillary and lung cancer. Controls, 59-78 yr old. JAPAN; ADIPOSE TISSUE; AORTA; BONE MARROW; BRAIN; CEREBELLUM; CEREBRUM; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; SKIN; CHROMIUM; COPPER; METALS; ZINC; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Hyodo, K. Suzuki, S. Furuya, N. Meshizuka, K. 1980 International Archives of Occupational and Environmental Health 46:141-150

(NEXT PAGE)

Zinc
7440-66-6
Zn
AtW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C, 10 mm Hg at 590

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4605 Spinal cord		X-ray spectrom	a) 7 b) 12	a) 39.6-202.5 ug/g b) 38.6-85.9 ug/g Dry wt	a) 83.8 + or - 56.3 ug/g b) 52.2 + or - 16.3 ug/g Dry wt	a) Motor neuron disease patients b) Controls Ventral horn tissue, autopsy Patients died of myotrophic lateral sclerosis and progressive muscular atrophy, mean age, 58.6 + or - 13.1 yr. Controls died of various diseases at 60.9 + or - 11.1 yr. TEXAS; ADULTS; AUTOPSIES; NEUROMUSCULAR DISEASES; SPINAL CORD; BIOACCUMULATION; CALCIUM; COPPER; IRON; LEAD; MANGANESE; METALS; SELENIUM; ZINC	Kurlander, H.M. Patten, B.M. 1979 Annals of Neurology 6(1):21-24
4606 Spleen		NA	a) 9 b) 4	a) 6.5-45 ug/g (wet wt) b) 4.0-15 ug/g (wet wt)	a) 18 + or - 11 ug/g (wet wt) b) 11 + or - 5.0 ug/g (wet wt)	a) Males b) Females From a group of 61 autopsies, forensic medical examinations, Japan. Males, mean age 40.6 yr. Females, mean age 37.4 yr. TRACE ELEMENTS; AUTOPSIES; JAPAN; ALUMINUM; ARSENIC; CADMIUM; COBALT; CHROMIUM; COPPER; IRON; MERCURY; IRIDIUM; MAGNESIUM; MANGANESE; RUBIDIUM; ANTIMONY; SCANDIUM; SELENIUM; TITANIUM; VANADIUM; ZINC; GOLD; BROMINE; LIVER; KIDNEYS; CEREBRUM; CEREBELLUM; HEART; MUSCLES; PANCREAS; SPLEEN; LUNGS; AORTA; METALS; COMPARATIVE EVALUATIONS; SEX; FORENSIC MEDICINE	Yukawa, M. Suzuki-Yasumoto, M. Amano, K. Terai, H. 1980 Archives of Environmental Health 35(1):36-44
4607 Teeth		AAS	a) 52 b) 25 c) 48 d) 50 e) 26 f) 26	a) 110-320 ug/g b) 105-189 ug/g c) 110-280 ug/g d) 122-282 ug/g e) 183-339 ug/g f) 169-538 ug/g	a) Not given b) Not given c) Not given d) 185 + or - 10.8 ug/g e) 199 + or - 20.4 ug/g f) 301 + or - 42.8 ug/g	a) Dentine, rural area with 40-120 ug/g Zn in scil b) Dentine, rural area with > 120 ug/g Zn in scil c) Dentine, urban area d) Enamel, as in (a) e) Enamel, as in (b) f) Enamel, as in (c) Estimated from graph (a,b,c) Age dependent data also presented. Zn accumulated in dentine up to age 25 Residents of Finland FINLAND; AGE; SEX; TEETH; COMPARATIVE EVALUATIONS; MAGNESIUM; ZINC; RURAL AREAS; URBAN AREAS; METALS	Lappalainen, R. Knuuttila, M. Salminen, R. 1981 Archives of Oral Biology 26:1-6
4608 Urine	Ingestion	AAS	a) 15 b) 17 c) 19 d) 15	a) Not given b) Not given c) Not given d) Not given	a) 530 + or - 355 ug/24 hr b) 522 + or - 288 ug/24 hr c) 343 + or - 222 ug/24 hr d) 427 + or - 251 ug/24 hr	a) Men, low blood pressure b) Men, high blood pressure c) Women, low blood pressure d) Women, high blood pressure Subjects selected by blood pressure rank from previous study. Estimated daily dietary intake 8.5 mg. Polynesian residents of Tokelau Islands, crowded conditions, subsistence economy. Men, mean age 45 yr, mean ht 167 cm, mean wt 74 kg. Women, mean age 46 yr, mean ht 165 cm, mean wt 79 kg. COPPER; ZINC; BLOOD SERUM; HAIR; NAILS; URINE; NEW ZEALAND	McKenzie, J.M. Guthrie, H.E. Prior, I.A.M. 1978 American Journal of Clinical Nutrition 31:422-428

Zinc, (dihydrogen 3,7,12,17-tetramethyl-8,13-divinyl-2,18-porphinedipropionate(2-))- (8 CI)
Zinc, (7,12-diethenyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropanoato(2-)-N(21),N(22),N(23),N(24))-, (SP-4-2)- (9 CI)
14442-64-5
C34-H30-N4-O4-Zn.2H
MW 626.03

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4609 Blood, cells			240	a) Not given b) Not given c) Not given d) Not given	a) 16 ug/dl cells b) 100 ug/dl cells c) 260 ug/dl cells d) 220 ug/dl cells	a) Start of employment, no previous occupational Pb exposure b) 22-24 wk after employment c) At time of removal from Pb source d) 31-33 wk after removal Erythrocytes Estimated from graph Considerable difference in rate of change and plateau state for Zn protoporphyrin and Pb. lead smelter workers ADULTS; BLOOD; ERYTHROCYTES; COMPARATIVE EVALUATIONS; INDUSTRIAL HYGIENE; LEAD; ZINC ORGANIC COMPOUNDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Hesley, K.L. Wimbish, G.H. 1981 Journal of the American Industrial Hygiene Association 42:42-46

Zirconium
7440-67-7
Zr
AtW 91.22, MP 1852 C, BP 3577 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4610 Hair						Review. 24 representative pre-analysis treatments are tabulated. The feasibility of a holistic, no-wash policy for hair analysis is outlined and supported. REVIEW; TRACE ELEMENTS; HAIR; AUSTRALIA; MEASUREMENT METHODS; METALS; PROTEINS; COMPARATIVE EVALUATIONS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; BROMINE; CADMIUM; CALCIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GALLIUM; GERMANIUM; GOLD; IODINE; IRON; LANTHANUM; LEAD; MAGNESIUM; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; RUBIDIUM; SELENIUM; SILICON; SILVER; SODIUM; STRONTIUM; SULFUR; TIN; TITANIUM; TUNGSTEN; ZINC; ZIRCONIUM	Chittleborough, G. 1980 *Science of the Total Environment* 14:53-75

1-Butanol, 2-ethyl-
97-95-0
C6-H14-O
MW 102.17, MP -15 C, BP 148.9 C, VP 0.9 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4611 Breath		GC-MS	54 (387 samples)	Not given	1.12 ng/l Geometric	Measured at 25 C and 760 mm Hg 95.5% occurrence Lower and upper one-Sigma limits 0.370 and 3.39 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Butanol, 2-methyl-
137-32-6
C5-H12-O
MW 88.15, BP 128 C, VP 1 mm Hg at 13.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4612 Breath		GC-MS	54 (387 samples)	Not given	12.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 5.8% occurrence Lower and upper one-Sigma limits 3.63 and 41.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Butene
106-98-9
C4-H8
MW 56.12, MP -185.35 C, BP -6.3 C, VP 3480 mm Hg at 21 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4613 Breath		GC/MS	8	Not detected-510.0 ug/hr	78.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

1-Butyne
107-00-6
C4-H6
MW 54, MP -130 C, BP 8.3 C, VP 100 mm Hg at -6.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4614 Breath		GC/MS	8	Not detected-3.4 ug/hr	0.4 ug/hr	Compound from unknown origin. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

1-Hexanethiol
111-31-9
C6-H14-S
MW 118.24, MP -81 C, BP 151 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4615 Breath		GC-MS	54 (387 samples)	Not given	2.2 ng/l Geometric	Measured at 25 C and 760 mm Hg 15.8% occurrence Lower and upper one-Sigma limits 1.0 and 4.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Hexanol, 2-ethyl-
104-76-7
C8-H18-O
MW 130.22, BP 184-185 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4616 Breath		GC-MS	54 (387 samples)	Not given	4.0 ng/l Geometric	Measured at 25 C and 760 mm Hg 17.6% occurrence Lower and upper one-Sigma limits 1.35 and 11.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Octene, 2-methyl-
4588-18-5
C9-H18
MW 126.27

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4617 Breath		GC-MS	54 (387 samples)	Not given	0.053 ng/l Geometric	Measured at 25 C and 760 mm Hg 10.9% occurrence Lower and upper one-Sigma limits 0.014 and 0.210 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Pentanol, 2-ethyl-4-methyl-
106-67-2
C8-H18-O
MW 130.26

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4618 Breath		GC-MS	54 (387 samples)	Not given	2.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 8.0% occurrence Lower and upper one-Sigma limits 0.83 and 5.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Pentanol, 2,2-dimethyl-
2370-12-9
C7-H16-O
MW 116.20

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4619 Breath		GC-MS	54 (387 samples)	Not given	3.9 ng/l Geometric	Measured at 25 C and 760 mm Hg 17.3% occurrence Lower and upper one-Sigma limits 1.6 and 9.6 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Pentanol, 2,2,4-trimethyl-
123-44-4
C8-H18-O
MW 130

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4620 Breath		GC-MS	54 (387 samples)	Not given	4.2 ng/l Geometric	Measured at 25 C and 760 mm Hg 47.6% occurrence Lower and upper one-Sigma limits 2.2 and 7.9 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1-Pentene
109-67-1
C5-H10
MW 70.13, MP -124 C, BP 30.1 C, VP 400 mm Hg at 12.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4621 Breath		GC/MS	8	Not detected-180.0 ug/hr	38.1 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

1-Propanol, 2,2-dimethyl-, acetate
926-41-0
C7-H14-O2
MW 130.18

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4622 Breath		GC-MS	54 (387 samples)	Not given	1.9 ng/l Geometric	Measured at 25 C and 760 mm Hg 38.8% occurrence Lower and upper one-Sigma limits 0.86 and 4.2 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1,3-Propanediol, 2-methyl-2-propyl-, dicarbamate
57-53-4
C9-H18-N2-O4
MW 218.25, MP 104-106 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4623 Blood, plasma	Ingestion	GC	1	12.5-7 ug/ml	Not applicable	1 and 8 hr after 800 mg in solution. Initial value, 12 ug/ml at 0.5 hr. Estimated from graph. DRUGS; MEASUREMENT METHODS; BLOOD PLASMA; SEDATIVES	Martis, L. Levy, R.H. 1974 Journal of Pharmaceutical Sciences 63(6):834-837

1,3,4-Metheno-1H-cyclobuta(cd)pentalene, 1,1a,2,2,3,3a,4,5,5,5a,5b,6-dodecachlorooctahydro-
2385-85-5
C10-C112
MW 545.6, MP 485 C, VP 6X10(E-6) mm Hg at 50 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4624 Adipose		GC	624	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given	a) 0.172 + or - 0.037 ppm b) 0.283 + or - 0.039 ppm c) 0.297 + or - 0.077 ppm d) 0.292 + or - 0.018 ppm e) 0.266 + or - 0.083 ppm f) 0.331 + or - 0.049 ppm g) 0.252 + or - 0.030 ppm h) 0.406 + or - 0.102 ppm i) 0.322 + or - 0.085 ppm j) 0.249 + or - 0.023 ppm S.E. Geometric means	a) Ages 0-14 yr b) Ages 15-44 yr c) Ages 45 yr or > d) East South Central census e) South Atlantic census f) West South Central census g) Caucasians h) Non-caucasians i) Male j) Female Log(sub e)Y - lipid extractable material adjusted. Weighted data based on Mirex Special Study, FY 76. Limitations of sample selection methodology restrict interpretation of results. Surgical patients and cadavers in all counties with mirex use during 10 yr: AL, FL, GA, LA, MS, NC, SC, TX. ALABAMA; FLORIDA; GEORGIA; LOUISIANA; MISSISSIPPI; NORTH CAROLINA; SOUTH CAROLINA; TEXAS; ADIPOSE TISSUE; INSECTICIDES; BIOACCUMULATION; FOOD CONTAMINATION; PESTICIDES	Leininger, C. Watts, D. Sparacino, C. Williams, S. 1980 EPA 560/13-80-024, 108 pp.
4625 Blood, whole		GC-EC	a) 35 b) 12	a) Not detected b) Not detected	a) Not detected b) Not detected	a) Love Canal residents b) Volunteers Limit of measurement, 0.22 ng/g Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

1,3,4-Metheno-2H-cyclobuta(cd)pentalen-2-one, 1,1a,3,3a,4,5,5,5a,5b,6-decachlorooctahydro-
143-50-0
C10-Cl10-O
MW 490.68, VP <3X10(E-7) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4626 Blood, whole		GC	468	a) 0.009-11.8 ppm b) 0.003-4.1 ppm c) 0.003-0.39 ppm d) 0.003-0.45 ppm e) 0.003-0.031 ppm f) 0.004-0.014 ppm g) 0.003-0.004 ppm h) 0.005-0.0325 ppm	a) 2.53 ppm b) 0.60 ppm c) 0.10 ppm d) 0.06 ppm e) 0.011 ppm f) 0.008 ppm g) 0.0035 ppm h) 0.011 ppm	a) 57 ill employees of Life Science Products Co b) 48 unaffected employees c) 30 family members of employees d) 30 employees of Allied Chemical Corporation previously in Kepone production e) 23 employees of nearby businesses f) 6 sewage treatment plant employees g) 2 cab or truck drivers h) 40 residents within 1.6 km of Life Science Products Co Residents of Hopewell, VA Significant difference in frequency of symptoms in kepone workers as compared to area residents: Rash, nervousness, tremor, visual difficulties (p<0.001), pleuritic pain and weight loss, (p<0.05). Hepatomegaly, oligospermia. Increase in connective tissue, decrease in small myelinated and unmyelinated fibers. PESTICIDES; INSECTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BLOOD; NEUROLOGIC MANIFESTATIONS; DISEASES; OCCUPATIONAL HAZARDS; COMPARATIVE EVALUATIONS; VIRGINIA	Cannon, S.B. Veazey, J.M., Jr. Jackson, R.S. Burse, V.W. Hayes, C. Straub, W.E. Landrigan, P.J. Liddle, J.A. 1978 American Journal of Epidemiology 107(6):529-537

1,3,5-Cycloheptatriene
544-25-2
C7-H8
MW 92.15, MP -79.49 C, BP 117 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4627 Breath		GC-MS	54 (387 samples)	Not given	0.114 ng/l Geometric	Measured at 25 C and 760 mm Hg 51.7% occurrence Lower and upper one-Sigma limits 0.031 and 0.414 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, endo,exo- (8 CI)
1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)- (9 CI)
309-00-2
C12-H8-C16
MW 365.93, MP 104 C, VP 6X10(E-6) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4628 Amniotic fluid		GC-EC	50	1-152 ppb	20.76 ppb Geometric	48 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
4629 Blood		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-23 ppb c) 9-80 ppb c) 18-70 ppb	a) 11.1 + or - 7.3 ppb b) 30.1 + or - 18.8 ppb c) 33.1 + or - 18.2 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9
4630 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) Not detected b) 0-0.090 ppm c) 0-0.090 ppm d) Not given	a) Not detected b) 0.004 ppm c) 0.002 ppm d) 0.00004 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Harteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
4631 Placenta		GC-EC	50	2-1587 ppb	158.7 ppb Geometric	46 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251
4632 Placenta		GC-EC	a) 25 b) 15 c) 10	a) Not detectable-15 ppb b) Not detectable-110 ppb c) Not detectable-29 ppb	a) 41 + or - 3.96 ppb b) 17.9 + or - 26.1 ppb c) 15.9 + or - 7.6 ppb	a) Controls, full-term pregnancies b) Pre-term pregnancies c) Spontaneous abortions at less than 8 wk (includes fetus) Healthy, non-exposed, pregnant women, ages 18-32 yr, India. INDIA; ABORTION; ADULTS; FETUS; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; INSECTICIDES; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; PREGNANCY	Saxena, M.C. Siddiqui, M.K.J. Seth, T.D. Krishna Murti, C.R. Bhargava, A.K. Kutty, D. 1981 Journal of Analytical Toxicology 5:6-9

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
60-57-1
C12-H8-Cl6-O
MW 380.93, MP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4633 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE ; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4634 Adipose		GC	60	<0.05-1.16 ppm	0.26 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, P. Kips, R.H. 1978 Toxicological European Research 2(2):93-98
4635 Amniotic fluid		GC-EC	50	1-3 ppb	2.42 ppb Geometric	2 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
60-57-1
C12-H8-C16-O
MW 380.93, MP 176-177 C, VP 7.76X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4636 Blood						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4637 Blood, cells						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
60-57-1
C12-H8-Cl6-O
MW 380.93, MP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4638 Blood, plasma						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4639 Blood, plasma		GC	a) 139 b) 175 c) 199 d) 210	a) 0-2.4 ppb b) 0-6.9 ppb c) 0-1.4 ppb d) 0-2.4 ppb	a) 0.2 ppb b) 0.2 ppb c) 0.3 ppb d) 0.4 ppb	a) Rural blacks b) Urban blacks c) Urban caucasians d) Rural caucasians Urban and rural residents of SC, infants, children, adults, elderly. SOUTH CAROLINA; ADULTS; CHILDREN; RACIAL STUDIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; DDD; DDE; DDT; DIELDRIN; PESTICIDES; POLYCHLORINATED BIPHENYLS; AIR POLLUTION; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Finklea, J. Priester, L.E. Creason, J.P. Hauser, T. Hinners, T. Hammer, D.I. 1972 American Journal of Public Health 62(5):645-651
4640 Milk	Ingestion	GC	a) 21 b) 28 c) 45 d) 45	a) 0-0.384 ppm b) 0-0.112 ppm c) 0-0.381 ppm d) Not given	a) 0.031 ppm b) 0.010 ppm c) 0.020 ppm d) 0.0005 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, E. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, E. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
4641 Milk		GC	1436	97.9-242.3 ppb	164.2 + or - 436.2 ppb	Computed on fat adjusted basis Range of means for all geographic regions Nursing mothers, U.S.A. UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, F.M. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 133(4):413-422

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
2,7:3,6-Dimethanonaphth(2,3-b)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-. (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
60-57-1
C12-H8-Cl6-O
MW 380.93, MP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4642 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.086 + or - 0.063 ppm b) 0.095 + or - 0.072 ppm c) 0.050 + or - 0.040 ppm d) 0.062 + or - 0.024 ppm e) 0.052 + or - 0.025 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. PESTICIDES; DIELDRIN; ORGANIC CHLORINE COMPOUNDS; JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
4643 Placenta		GC-EC	50	1-6 ppb	3.93 ppb Geometric	2 positive specimens Pregnant women, similar in socioeconomic level and dietary habits. No occupational or accidental exposure. Lucknow, India PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; INDIA; PREGNANCY; AMNIOTIC FLUID; PLACENTA	Saxena, M.C. Seth, T.D. Mahajan, P.L. 1980 International Journal of Environmental Analytical Chemistry 7:245-251

2-Butanol, 3-methyl-
598-75-4
C5-H12-O
MW 88.15, 128 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4644 Breath		GC-MS	54 (387 samples)	Not given	0.378 ng/l Geometric	Measured at 25 C and 760 mm Hg 15.5% occurrence Lower and upper one-Sigma limits 0.123 and 1.16 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2-Butanone
78-93-3
C4-H8-O
MW 160.27, BP 79.57 C, VP 71.2 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4645 Breath		GC/MS	8	Not detected-60.0 ug/hr	16.4 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4646 Breath		GC-MS	54 (387 samples)	Not given	3.6 ng/l Geometric	Measured at 25 C and 760 mm Hg 53.2% occurrence Lower and upper one-Sigma limits 1.48 and 8.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2-Butanone, 3,3-dimethyl-
75-97-8
C6-H12-O
MW 100.16, MP -49.8 C, BP 106 C at 760 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4647 Breath		GC-MS	54 (387 samples)	Not given	0.184 ng/l Geometric	Measured at 25 C and 760 mm Hg 8.3% occurrence Lower and upper one-Sigma limits 0.024 and 1.39 ng/ml Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2-Butene, (E)-
624-64-6
C4-H8
MW 56.12, MP -105.55 C, BP 0.88 C, VP 1592 mm Hg at 21 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4648 Breath		GC/MS	8	Not detected-80.0 ug/hr	10.6 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

2-Butene, (Z)-
590-18-1
C4-H8
MW 56.12, MP -138.91 C, BP 3.7 C, VP 1410 mm Hg at 21 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4649 Breath		GC/MS	8	Not detected-23.0 ug/hr	4.8 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

2-Ethyl-1-pentanol (No postings in CHEMLINE).
C7-H16-O
MW 116.23, BP 164-166 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4650 Breath		GC-MS	54 (387 samples)	Not given	0.276 ng/l Geometric	Measured at 25 C and 760 mm Hg 35.9% occurrence Lower and upper one-Sigma limits 0.104 and 0.729 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2-Hexene
592-43-8
C6-H12
MW 84.16, MP 141.35 C, BP 68.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4651 Breath		GC/MS	8	Not detected-17.0 ug/hr	4.0 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

2-Octanol
123-96-6
C8-H18-O
MW 130.2, MP -31.6 C, BP 178.5 C, VP 1 mm Hg at 32.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4652 Breath		GC/MS	8	Not detected-98.0 ug/hr	12.3 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295
4653 Breath		GC-MS	54 (387 samples)	Not given	0.89 ng/l Geometric	Measured at 25 C and 760 mm Hg 32.3% occurrence Lower and upper one-Sigma limits 0.26 and 3.1 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, Il. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2-Pentanone, 4-methyl
108-10-1
C6-H12-O
MW 100.2, MP -84.7 C, BP 116.85 C, VP 16 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4654 Breath		GC/MS	8	Not detected-24.0 ug/g	4.2 ug/hr	Compound related to normal metabolism. No other details given Cryogenic sampling technique. Healthy military and civilian employees, U.S. Air Force School of Aerospace Medicine, ages 23-47 yr. 3 smokers. BENZENES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; FLUORINE COMPOUNDS; BREATH; ALCOHOLS; TEXAS; ADULTS	Conkle, J.P. Camp, B.J. Welch, B.E. 1975 Archives of Environmental Health 30(2):290-295

2,2-Dimethyl-3-hexanone (No postings in CHEMLINE).
C8-H16-O
MW 128.22, BP 145-148 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4655 Breath		GC-MS	54 (387 samples)	Not given	0.198 ng/l Geometric	Measured at 25 C and 760 mm Hg 27.9% occurrence Lower and upper one-Sigma limits 0.054 and 0.722 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2,2-Dimethylhexanol (No postings in CHEMLINE).
2370-13-0
C8-H18-O
MW 130.26

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4656 Breath		GC-MS	54 (387 samples)	Not given	0.174 ng/l Geometric	Measured at 25 C and 760 mm Hg 5.2% occurrence Lower and upper one-Sigma limits 0.031 and 0.975 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2,2-Dimethyloctanol (No postings in CHEMLINE).
2370-14-1
C10-H22-O
MW 158.29

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4657 Breath		GC-MS	54 (387 samples)	Not given	0.317 ng/l Geometric	Measured at 25 C and 760 mm Hg 31.0% occurrence Lower and upper one-Sigma limits 0.109 and 0.915 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2,2,3,3-Tetramethylhexane (No postings in CHEMLINE).
13475-81-5
C10-H22
MW 142.32, BP 160.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4658 Breath		GC-MS	54 (387 samples)	Not given	1.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 21.5% occurrence Lower and upper one-Sigma limits 0.35 and 4.8 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2,3,3-Trimethylhexane (No postings in CHEMLINE).
C9-H20-O
MW 128.25, BP 137.7 C, VP 10.1 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4659 Breath		GC-MS	54 (387 samples)	Not given	0.730 ng/l Geometric	Measured at 25 C and 760 mm Hg 18.6% occurrence Lower and upper one-Sigma limits 0.147 and 3.62 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

2,3,3,4-Tetramethylpentane (No postings in CHEMLINE).
16747-38-9
C9-H2-O
MW 128.25, MP -102.123 C, BP 141.551 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4660 Breath		GC-MS	54 (387 samples)	Not given	0.399 ng/l Geometric	Measured at 25 C and 760 mm Hg 10.9% occurrence Lower and upper one-Sigma limits 0.113 and 1.41 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3-Heptanone, 2-methyl-
13019-20-0
C8-H16-O
MW 128.24

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4661 Breath		GC-MS	54 (387 samples)	Not given	0.120 ng/l Geometric	Measured at 25 C and 760 mm Hg 2.1% occurrence Lower and upper one-Sigma limits 0.020 and 0.712 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3-Heptanone, 5-methyl-
541-85-5
C8-H16-O
MW 128.22, BP 160.5 C, VP 2.0 mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4662 Breath		GC-MS	54 (387 samples)	Not given	0.505 ng/l Geometric	Measured at 25 C and 760 mm Hg 5.2% occurrence Lower and upper one-Sigma limits 0.200 and 1.27 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3-Hexanone, 2,4-dimethyl-
18641-70-8
C9-H16-O
MW 128.21, BP 145 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4663 Breath		GC-MS	54 (387 samples)	Not given	0.311 ng/l Geometric	Measured at 25 C and 760 mm Hg 25.3% occurrence Lower and upper one-Sigma limits 0.139 and 0.694 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3-Hexen-1-ol, (E)-
928-97-2
C6-H12-O
MW 100.16, BP 156-157 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4664 Breath		GC-MS	54 (387 samples)	Not given	1.1 ng/l Geometric	Measured at 25 C and 760 mm Hg 16.3% occurrence Lower and upper one-Sigma limits 0.28 and 4.3 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3-Pentanone, 2-methyl-
565-69-5
C6-H12-O
MW 100.16, BP 114.5-115 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4665 Breath		GC-MS	54 (387 samples)	Not given	0.86 ng/l Geometric	Measured at 25 C and 760 mm Hg 31.3% occurrence Lower and upper one-Sigma limits 0.023 and 0.33 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3,3-Diethylpentane (No postings in CHEMLINE).
1067-20-5
C9-H20
MW 128.25, MP -33.11 C, BP 146.17 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4666 Breath		GC-MS	54 (387 samples)	Not given	0.026 ng/l Geometric	Measured at 25 C and 760 mm Hg 6.7% occurrence Lower and upper one-Sigma limits 0.006 and 0.115 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

3,4-Dimethylheptane (No postings in CHEMLINE).
922-28-1
C9-H2-0
MW 128.25, BP 140.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4667 Breath		GC-MS	54 (387 samples)	Not given	2.3 ng/l Geometric	Measured at 25 C and 760 mm Hg 27.7% occurrence Lower and upper one-Sigma limits 0.98 and 5.4 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

4-Heptanone
123-19-3
C7-H14-0
MW 114.19, MP -32.6 C, BP 144 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4668 Breath		GC-MS	54 (387 samples)	Not given	0.074 ng/l Geometric	Measured at 25 C and 760 mm Hg 12.4% occurrence Lower and upper one-Sigma limits 0.024 and 0.231 ng/l Healthy, 18-35 yr old, nonsmoking, urban blacks and caucasians. Chicago, IL. Rigidly controlled experimental conditions. BREATH; ALCOHOLS; ILLINOIS; ADULTS; CHLORINATED HYDROCARBONS; VOLATILE ORGANIC COMPOUNDS; HEALTH HAZARDS; INHALATION; METABOLISM; METABOLITES; POPULATION EXPOSURE; URBAN AREAS	Krotoszynski, B.K. Bruneau, G.M. O'Neill, H.J. 1979 Journal of Analytical Toxicology 3:225-234

(NEXT PAGE)

4-Heptanone
123-19-3
C7-H14-O
MW 114.18, MP -32.6 C, BP 144 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4669 Urine	Dermal	GC	a) 15 b) 40	a) 0.01-1.5 mg/g creatinine b) 1.5-3.7 mg/g creatinine	a) Not given b) Not given	a) Controls b) Workers exposed to chlorophenols Workers in herbicide manufacturing plants. HERBICIDES; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; PESTICIDES; POPULATION EXPOSURE; CHLORINE ORGANIC COMPOUNDS; PHENOLS; CANADA; URINE	Van Roossalen, P.B. Klein, A.L. Drummond, I. 1980 International Archives of Occupational and Environmental Health 45:57-62

4,4'-Bipyridinium, 1,1'-dimethyl-
4685-14-7
C12-H14-N2
MW 186, MP 300 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4670 Blood, plasma			1	Not given	0.133 mg/l	6 days after 50 ml diluted gramoxone 39 yr old, suicide attempt. Dyspnea, renal failure, falling forced vital capacity. Increased urea, creatinine. Proteinuria, hyaline casts in urine, perihilar opacities. HERBICIDES; PESTICIDES; BLOOD PLASMA; SUICIDE	Rose, J.D.R. 1980 Lancet 2(8200):924

4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-1,2-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
2,5-Methano-2H-indeno(1,2-b)oxirene, 1a,2,3,4,5,6a,7,7-octachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
26880-48-8
C10-H4-Cl8-O
MW 423.77

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4671 Milk		GC	1436	75.4-116.3 ppb	95.8 + or - 195.1 ppb	Computed on fat adjusted basis Range of means for all geographic regions UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, F.M. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 113(4):413-422

4,7-Methanoindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
2,5-Methano-2H-indeno(1,2-b)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
1024-57-3
C10-H5-C17-O
MW 389.32

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4672 Adipose						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; ICLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; BLOOD PLASMA; BLOCD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC CCMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110
4673 Adipose		GC	60	<0.05-11.95 ppm	0.38 ppm	Peripheral kidney fat, routine pathological examinations Ages 6 mo-92 yr. Belgium BELGIUM; AUTOPSIES; ADIPOSE TISSUE; BIOACCUMULATION; PESTICIDES; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; CHLORINE ORGANIC COMPOUNDS	Dejonckheere, W. Steurbaut, W. Verstraeten, R. Kips, P.H. 1978 Toxicological European Research 2(2):93-98
4674 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.296 ppm b) 0-1.002 ppm c) 0-1.002 ppm d) Not given	a) 0.017 ppm b) 0.051 ppm c) 0.035 ppm d) 0.0003 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC CCMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Hartenche, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. *Iglesias Perez, J.* 1979 Revista Espanola de Pediatria 35(206):93-110
4675 Milk		GC	1436	66.1-128 PPB	91.4 + or - 125.2 PPB	Computed on fat adjusted basis Range of means for all geographic regions Nursing mothers, U.S.A. UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, F.M. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 113(4):413-422

4,7-Methanoindene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (8 CI)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (9 CI)
76-44-8
C10-H5-Cl7
MW 373.35, MP 95-96 C, VP 3X10(E-4) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4676 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.405-10.823 ppm b) 0.615-11.686 ppm c) 0.405-11.686 ppm d) Not given	a) 2.556 ppm b) 2.462 ppm c) 2.505 ppm d) 0.0390 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

5-Norbornene-2,3-dimethanol, 1,4,5,6,7,7-hexachloro-, cyclic sulfite (8 CI)
6,9-Methano-2,4,3-benzodioxathiepan, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide (9 CI)
115-29-7
C9-H6-Cl6-O3-S
MW 406.95, MP 106 C, VP 1X10(E-5) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4677 Blood, whole		GC-EC	a) 35 b) 12 c) 36 d) 12	a) Not detected b) Not detected c) Not detected d) Not detected	a) Not detected b) Not detected c) Not detected d) Not detected	a) Thiodan I, Love Canal residents b) Thiodan I, volunteers c) Thiodan II, Love Canal residents d) Thiodan II, volunteers Limit of measurement, 0.23 ng/g for Thiodan I and 0.32 ng/g for Thiodan II Closely matched, simultaneous control samples were not provided for analysis along with those from the 36 Love Canal area residents sampled. Lacking meaningful control or literature data relative to the significance of the low residues found in the field samples analyzed, no definite conclusions can be drawn from the results reported. Residents of New York. Controls, employees of the Environmental Protection Agency and university students, North Carolina. NEW YORK; NORTH CAROLINA; BLOOD; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; HEXACHLOROBENZENE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE	Bristol, D.W. 1980 EPA-600/1-80-036, 40 pp.

(1,1'-Biphenyl)-4-butanoic acid, gamma-oxo-
36330-85-5
C16-H14-O3
MW 254.3, MP approx 180 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4678 Blood, serum	Ingestion	HPLC	26	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 13.7 + or - 5.3 ug/ml b) 8.2 + or - 7.9 ug/ml c) 80.1 + or - 13.2 ug/ml d) 45.8 + or - 22.5 ug/ml e) 0.7 + or - 0.3 ug/ml f) 4.2 + or - 2.1 ug/ml	a) Normals (creatinine clearance >80 ml/min), measured as unchanged fenbufen b) Renally impaired (creatinine clearance 3-20 ml/min), measured as fenbufen c) Normals, measured as gamma-hydroxy[1,1'-biphenyl]-4-butanoic acid (metabolite II) d) Renally impaired, measured as metabolite II e) Normals, measured as 4'-hydroxy[1,1'-biphenyl]-4-acetic acid (metabolite IV) f) Renally impaired, measured as metabolite IV Peaks, after 800 mg fenbufen, single dose Data also for other metabolites and other degrees of renal impairment 21-87 yr old patients and controls, fasted before and after dose. UNITED KINGDOM; ADULTS; KIDNEY DISEASES; BLOOD SERUM; ANALGESICS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Rogers, H.J. Savitsky, J.P. Glenn, B. Spector, R.G. 1981 Clinical Pharmacology and Therapeutics 29(1):74-80
4679 Urine	Ingestion	HPLC	26	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 4.9 + or - 5.8 mg b) 1.6 + or - 3.6 mg c) 4.8 + or - 2.0 mg d) 7.4 + or - 16.8 mg e) 134.6 + or - 61.7 mg f) 56.1 + or - 49.7 mg	a) Normals (creatinine clearance >80 ml/min), measured as unchanged fenbufen b) Renally impaired (creatinine clearance 3-20 ml/min), measured as fenbufen c) Normals, measured as gamma-hydroxy[1,1'-biphenyl]-4-butanoic acid (metabolite II) d) Renally impaired, measured as metabolite II e) Normals, measured as 4'-hydroxy[1,1'-biphenyl]-4-acetic acid (metabolite IV) f) Renally impaired, measured as metabolite IV Peaks, after 800 mg fenbufen, single dose Data also for other metabolites and other degrees of renal impairment 21-87 yr old patients and controls, fasted before and after dose. UNITED KINGDOM; ADULTS; KIDNEY DISEASES; BLOOD SERUM; ANALGESICS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Rogers, H.J. Savitsky, J.P. Glenn, B. Spector, R.G. 1981 Clinical Pharmacology and Therapeutics 29(1):74-80

Acetamide, N-amidino-2-(2,6-dichlorphenyl)- (8 CI)
Benzeneacetamide, N-(aminoiminomethyl)-2,6-dichloro- (9 CI)
29110-47-2
C9-H9-C12-N3-O
MW 246.11

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4680 Blood, cells	Ingestion	GC-EC	a) 9 b) 10	a) 5.6-0.91 ng/ml b) 11.4-1.55 ng/ml	a) Not given b) Not given	a) Erythrocytes, 3 and 36 hr means after 2 mg. Initial measurement 1.12 ng/ml at 1 hr b) Erythrocytes, 2 and 36 hr means after 4 mg. Initial measurement, 5.1 ng/ml at 1 hr Estimated from graphs. 23-59 yr olds, no drug > 4 wk before study, 100 meq/day Na diet 3 days. All had chronic hypertension without cardiac or renal involvement. Reduced blood pressure. DRUGS; DRUG THERAPY; HYPERTENSION; FRANCE; BLOOD PLASMA; URINE; BLOOD PRESSURE; ERYTHROCYTES; COMPARATIVE EVALUATIONS	Weiss, Y.A. Lavene, D.L. Safar, M.E. Simon, A.C. Loria, Y. Georges, D.R. Milliez, P.L. 1979 Clinical Pharmacology and Therapeutics 25(3):283-293
4681 Blood, plasma	Ingestion	GC-EC	a) 9 b) 10	a) 3.48-0.69 ng/ml b) 8.28-1.31 ng/ml	a) Not given b) Not given	a) Means, 3.1 and 36 hr after 2 mg. Initial measurement, 0.76 ng/ml at 1 hr b) Means, 2.6 and 36 hr after 4 mg. Initial measurement, 3.59 ng/ml at 1 hr Data also given for steady-state values after 1-3 mg 2X/day. 23-59 yr olds, no drug > 4 wk before study, 100 meq/day Na diet 3 days. All had chronic hypertension without cardiac or renal involvement. Reduced blood pressure. DRUGS; DRUG THERAPY; HYPERTENSION; FRANCE; BLOOD PLASMA; URINE; BLOOD PRESSURE; ERYTHROCYTES; COMPARATIVE EVALUATIONS	Weiss, Y.A. Lavene, D.L. Safar, M.E. Simon, A.C. Loria, Y. Georges, D.R. Milliez, P.L. 1979 Clinical Pharmacology and Therapeutics 25(3):283-293
4682 Urine	Ingestion	GC-EC	a) 9 b) 10	a) Not given b) Not given	a) 29.9 + or - 2.5 % of dose b) 34.3 + or - 5.4 % of dose	a) 2 mg dose b) 4 mg dose 72 hr cumulative excretions in unchanged form. 23-59 yr olds, no drug > 4 wk before study, 100 meq/day Na diet 3 days. All had chronic hypertension without cardiac or renal involvement. Reduced blood pressure. DRUGS; DRUG THERAPY; HYPERTENSION; FRANCE; BLOOD PLASMA; URINE; BLOOD PRESSURE; ERYTHROCYTES; COMPARATIVE EVALUATIONS	Weiss, Y.A. Lavene, D.L. Safar, M.E. Simon, A.C. Loria, Y. Georges, D.R. Milliez, P.L. 1979 Clinical Pharmacology and Therapeutics 25(3):283-293

Benzeneacetamide, 4-(2-hydroxy-3-((1-methylethyl)amino)propoxy)- (9 CI)
29122-68-7
C14-H22-N2-O3
MW 266.34, MP 146-148 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4683 Blood, plasma	Ingestion	HPLC	12	746.1-50.5 ng/ml	Not applicable	Means, 4 and 24 hr after 100 mg. Initial value, 243.5 ng/ml at 0.5 hr. Subjects at rest. Healthy 20-28 yr olds, no cardiac, renal, hepatic or absorptive abnormalities. No medication > 15 days, fasted overnight. Resting systolic pressure negatively correlated with drug plasma level, r=0.524, p<0.01. Heart rate, systolic pressure, plasma renin activity increases in exercise reduced. Correlated with plasma drug level, p<0.05. DRUGS; BLOOD PLASMA; BLOOD PRESSURE; ADULTS; HORMONES	Winer, N. Mason, W.D. Carter, C.H. Willoughby, T.L. Kochak, G.M. Cohen, I. Bell, R.M.S. 1979 Clinical Pharmacology and Therapeutics 26(3):315-325
4684 Blood, plasma	Ingestion			1579-15 nmoles/l	Not given	2 and 40 hr means after 100 mg/day Healthy 20-30 yr olds, within 10% of normal weight. Reduced resting and exercise heart rates. Reduced blood pressure. DRUGS; SWEDEN; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; ADULTS; BLOOD PRESSURE	Johansson, S.E. McCall, M. Wilhelmsson, C. Vedin, J.A. 1980 Clinical Pharmacology and Therapeutics 27(5):593-601

Acetamide, 2,2-dichloro-N-(beta-hydroxy-alpha-(hydroxymethyl)-*p*-nitrophenethyl)-, D-threo-(-)-, (8 CI)
Acetamide, 2,2-dichloro-N-(2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl)-,(R-(R*,R*))- (9 CI)
56-75-7
C11-H12-C12-N2-O5
MW 323.14, MP 150.5-151.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4685 Blood, plasma	Ingestion	GC	1	14-23 ug/ml	Not applicable	Initial measurement and 1-2 hr after 50 mg/kg, 4X daily as palmitate. 16 ug/ml at 6 hr. Measured after 7th dose. After hypophysectomy, 30 yr old with haemophilus influenzae type b meningitis ADULTS; INFECTION; BLOOD PLASMA; CEREBROSPINAL FLUID; ANTIBIOTICS; DRUG THERAPY	Pensimer, E.R. Pickering, L.K. Fricsson, C.D. Kramer, W.G. 1981 Lancet 1(8212):165
4686 Blood, serum	Injection	GC	a) 8 b) 5	a) 11.2-36.2 ug/ml b) 10.0-36.2 ug/ml	a) Not given b) Not given	a) Peaks at 15-50 mg/kg/day b) Peaks at 25-50 mg/kg/day Values not strictly comparable, predose levels sometimes >0 Low birth weight infants, 4 with bacterial infections. a) Ages 1-8 d, wt 0.9-2.5 kg, gestational age 25-35 wk, and b) ages 11 d-8 wk, wt 0.9-2.2 kg, gestational age 28-34 wk. PENNSYLVANIA; INFANTS; NEWBORN; BLOOD SERUM; SPINAL FLUID; ANTIBIOTICS; DRUG THERAPY; CHLORINE ORGANIC COMPOUNDS	Glazer, J.P. Danish, M.A. Plotkin, S.A. Sumner, J.Y. 1980 Pediatrics 66(4):573-578

(NEXT PAGE)

Acetamide, 2,2-dichloro-N-(beta-hydroxy-alpha-(hydroxymethyl)-p-nitrophenethyl)-, D-threo-(-)-, (8 CI)
Acetamide, 2,2-dichloro-N-(2-hydroxy-1-(hydroxymethyl)-2-(4-nitrophenyl)ethyl)-, [R-(R*,R*)]- (9 CI)
56-75-7
C11-H12-Cl2-N2-O5
MW 323.14, MP 150.5-151.5 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4687 Cerebrospinal fluid	Ingestion	GC	1	5.4-7.9 ug/ml	Not applicable	Initial measurement and 6 hr after 50 mg/kg, 4x daily as palmitate. Measured after 7th dose. 30 yr old with haemophilus influenzae type b meningitis after hypophysectomy ADULTS; INFECTION; BLOOD PLASMA; CEREBROSPINAL FLUID; ANTIBIOTICS; DRUG THERAPY	Rensimer, E.R. Pickering, L.K. Ericsson, C.D. Kramer, W.G. 1981 Lancet 1(8212):165
4688 Spinal fluid	Injection	GC	1	Not applicable	4.9 ug/ml	60 min after dose (25 mg/kg/day in 2 doses) Serum level, 10.9 ug/ml Low birth weight infant with Enterobacter cloacae septicemia, 11 d-8 wk old. PENNSYLVANIA; INFANTS; NEWBORN; BLOOD SERUM; SPINAL FLUID; ANTIBIOTICS; DRUG THERAPY; CHLORINE ORGANIC COMPOUNDS	Glazer, J.P. Danish, M.A. Plotkin, S.A. Sumner, J.Y. 1980 Pediatrics 66(4):573-578

Acetanilide, 4'-(2-hydroxy-3-(isopropylamino)propoxy)- (8 CI)
Acetamide, N-(4-(2-hydroxy-3-((1-methylethyl)amino)propoxy)phenyl)- (9 CI)
6673-35-4
C14-H22-N2-O3
MW 264.32, MP 134-136 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4689 Blood, plasma	Ingestion	GC	a) 7 b) 6	a) 1.65-0.3 ug/ml b) 2.3-1.5 ug/ml	a) Not given b) Not given	a) Controls, 2 and 24 hr after 200 mg. Initial measurement, 0.9 ug/ml at 1 hr b) Uremic patients 3 and 48 hr after 200 mg. Initial measurement, 1.8 ug/ml at 1 hr Estimated from graph Controls, healthy, 20-25 yr olds, wt 61-69 kg. 32-60 yr old patients. BELGIUM; HYPERTENSION; KIDNEY DISEASES; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; HEMODIALYSIS	Harvengt, C. Desager, J.P. Buschart, J.M. Tjandramaga, T.B. Verbeeck, R. Verberckmoes, R. 1975 Journal of Clinical Pharmacology 15:605-610

Acetanilide, 4'-hydroxy- (8 CI)
Acetamide, N-(4-hydroxyphenyl)- (9 CI)
103-90-2
C8-H9-N-O2
MW 151.16, MP 169-170.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4690 Blood	Ingestion	IP	30	0.00-30.40 mg/dl	7.23 + or - 6.33 mg/dl	Dextropropoxyphene poisoning fatalities. Alcohol and/or other drugs in most cases. Coroners cases, ages 16-67 yr, Northern Ireland Coma, death. Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
4691 Blood	Ingestion		18	29-281 mg/dl	139.22 + or - 64.57 mg/dl	Dextropropoxyphene poisoning fatalities. Other drugs found in most subjects. Coroners' cases, ages 16-67 yr, Northern Ireland Coma, death. Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
4692 Blood, plasma	Ingestion	HPLC	8	a) 13-3 ug/ml b) 10.5-4 ug/ml	a) Not applicable b) Not applicable	a) 90-210 min after 13.93 mg/kg at 2 PM b) 90-210 min after 13.93 mg/kg at 6 AM Monoexponental decay. Estimated from graph. Healthy 22-32 yr olds, fasted before and during experiment. No drugs 1 wk before study. DRUGS; METABOLISM; ADULTS; BLOOD PLASMA	Shively, C.A. Vesell, E.S. 1975 Clinical Pharmacology and Therapeutics 18(4):413-424
4693 Blood, plasma	Ingestion	HPLC GC	a) 7 b) 7	a) 0-9.8 mg/l b) 3.2-10 mg/l	a) Not applicable b) 6.7 mg/l	a) 24 hr values after a single 4 g dose. Peak at 2 hr and then decline. Considerable individual variation b) Levels at 5th day following twice daily dose of 3 g of benorylate. Healthy 21-67 yr olds, wt 48-100 kg FRANCE; ADULTS; BLOOD; BLOOD PLASMA; ANALGESICS; ANTI-INFLAMMATORY AGENTS; ANALGESICS; ANTIPYRETICS; DRUG THERAPY; IN VITRO ANALYSIS; DRUGS	Cailleux, P. Cailleux, A. Allain, P. Renier, J.-C. 1979 Therapie 34:81-87
4694 Blood, plasma	Ingestion		a) 6 b) 6 c) 1	a) 14-43 ug/ml b) 0.5-13 ug/ml c) 180-9 ug/ml	a) Not given b) Not given c) Not applicable	a) 0.5 hr after 30 mg/kg dose b) 4 hr after 30 mg/kg dose c) 4 and 16 hr after 250 mg/kg dose 0.5-6 yr olds Vomiting early symptom of overdose CHILDREN; LIVER DISEASES; BLOOD PLASMA; ANALGESICS; DRUGS; HEALTH HAZARDS	Peterson, R.G. Rumack, B.H. 1981 Archives of Internal Medicine 141:390-394

(NEXT PAGE)

Acetanilide, 4'-hydroxy- (8 CI,
Acetamide, N-(4-hydroxyphenyl)- (9 C
103-90-2
C8-H9-N-O2
MP 151.16, MP 169-170.5 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4695 Urine	Ingestion	HPLC	8	a) 7.8-27.3 mg b) 13.0-25.8 mg c) 26.5-171.0 mg 92.0-255.0 mg	a) 16.5 mg b) 17.6 mg c) 81.7 mg d) 170.8 mg	a) Free, 0-3.5 hr after AM dose b) Free, 0-8 hr after AM dose c) Glucuronidate, 0-3.5 hr after AM dose c) Glucuronidate, 0-8 hr after AM dose Cumulative excretion after 975-1,300 mg. Healthy 22-32 yr olds, fasted before and during experiment. No drugs 1 wk before study. DRUGS; METABOLISM; ADULTS; BLOOD PLASMA	Shively, C.A. Vesell, E.S. 1975 Clinical Pharmacology and Therapeutics 18(4):413-424
4696 Urine	Ingestion	IP	17	1.30-122.00 mg/dl	27.01 + or - 36.29 mg/dl	Dextropropoxyphene poisoning fatalities. Alcohol and/or other drugs in most cases. Coroners' cases, ages 16-67 yr, Northern Ireland Coma, death. Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
4697 Urine			13	137-425 mg/dl	221.54 + or - 83.49 mg/dl	Dextropropoxyphene poisoning fatalities. Other drugs found in most subjects. Coroners' cases, ages 16-67 yr, Northern Ireland Coma, death. Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
4698 Urine	Ingestion		12	a) 0.90-3.89% of dose b) 4.6-16.8% of dose c) 36.7-61.8% of dose	a) 2.43% of dose b) 12.8% of dose c) 47.6% of dose	a) Unmetabolized drug b) Acetaminophen glucuronide c) Acetaminophen sulfate 48 hr cumulative excretions after 12 mg/kg Healthy 2-3 day old, full-term infants. DRUGS; URINE; METABOLISM; NEWBORN; SEX	Levy, G. Khanna, N.N. Soda, D.M. Tsuzuki, O. Stern, L. 1975 Pediatrics 55(6):818-825
4699 Urine			1	a) Not applicable b) Not applicable c) Not applicable	a) 0.06 mg b) 0.58 mg c) 1.03 mg	a) Acetaminophen b) Acetaminophen glucuronide c) Acetaminophen sulfate Cumulative excretions 1st 14.75 hr of life. Mother ingested 0.3 g phenacetin 5.5 hr before delivery. Healthy newborn DRUGS; NEWBORN; URINE; METABOLISM; PREGNANCY; CASE HISTORIES	Levy, G. Garrettson, L.K. Soda, D.M. 1975 Pediatrics 55(6):895

Acetic acid, (2,3-dichloro-4-(2-thienylcarbonyl)phenoxy)-
40180-04-9
C13-H8-Cl2-O4-S
MW 331.17

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4700 Blood, serum	Ingestion	GC	6	a) 0.63-0.55 ug/ml b) 2.35-4.88 ug/ml c) 1.01-3.68 ug/ml d) Not given e) Not given f) Not given	a) Not given b) Not given c) Not given d) 0.34 + or - 0.17 (SE) ug/ml e) 4.55 + or - 1.20 (SE) ug/ml f) 2.83 + or - 0.59 (SE) ug/ml	a) Days 3 and 4 b) Alcohol metabolite, days 2 and 4 c) Diacid metabolite, days 2 and 4 d) Unchanged drug e) Alcohol metabolite f) Diacid metabolite a)-c), 8 AM, fasting sample before 250 mg. d)-f), after 5 hr hemodialysis on day 4 Anephric 21-50 yr olds, on hemodialysis >12 months, controlled diet No effect on rise in serum uric acid after dialysis DRUGS; DRUG THERAPY; HEMODIALYSIS; DIURETICS; METABOLITES; KIDNEY DISEASES; BLOOD SERUM; PENNSYLVANIA	Murray, T.G. Brown, S. Dubb, J.W. Hwang, B.Y. Stote, R.M. 1980 Clinical Pharmacology and Therapeutics 27(5):686-689

Acetic acid, (4-(allyloxy)-3-chlorophenyl)- (8 CI)
Benzeneacetic acid, 3-chloro-4-(2-propenyloxy)- (9 CI)
22131-79-9
C11-H11-Cl-O3
MW 226.66, MP 92-93 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4701 Blood, plasma	Ingestion	GC	51	a) 56.0-2.0 ug/ml b) 82.0-6.7 ug/ml c) 1.7-69.0 ug/ml d) 6.8-60.0 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 1 and 10 hr means after 500 mg as suspension, overnight fast. Initial measurement, 55.2 ug/ml at 0.5 hr. 32 subjects b) 2 and 10 hr means after 1000 mg capsule with meal. Initial measurement, 36.1 ug/ml at 0.5 hr. 19 subjects c) 0.5 and 3 hr means after 1000 mg capsule, 30 min after meal. Final measurement, 9.0 ug/ml at 10 hr. 19 subjects d) 0.5 and 4 hr means after 1000 mg capsule prior to meal. Final measurement, 11.3 ug/ml at 10 hr. 19 subjects Unchanged drug Healthy adults DRUGS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; BLOOD PLASMA; URINE	Sennello, L.T. Sanders, R.C. Friedman, H. 1978 Clinical Pharmacology and Therapeutics 23(4):414-420
4702 Urine	Ingestion	GC/MS	a) 10 b) 8 c) 6	a) Not given b) Not given c) Not given	a) 172 + or - 68 ug/24 hr b) 52 + or - 23 ug/24 hr c) 47 + or - 14 ug/24 hr	a) Controls, dose 3 g/day, 5 days b) Patients with rheumatoid arthritis, dose 1-2 g/day, at least 6 mo c) Patients with drug-associated rash, dose 2-4 g/day Measured as epoxide metabolite Normal 35-60 yr olds, and patients with rheumatoid arthritis, some with drug-associated rash DRUGS; RHEUMATOID ARTHRITIS; URINE; METABOLITES; UNITED KINGDOM	Slack, J.A. Ford-Hutchinson, A.W. 1980 Drug Metabolism and Disposition 8(2):84-86

(NEXT PAGE)

Acetic acid, (4-(allyloxy)-3-chlorophenyl)- (8 CI)
Benzeneacetic acid, 3-chloro-4-(2-propenyloxy)- (9 CI)
22131-79-9
C11-H11-Cl-03
MW 226.66, MP 92-93 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4703 Urine	Ingestion	GC	a) 32 b) 19	a) Not given b) 42.8-45.7 mg	a) 50.4 mg b) 44.2 mg	a) 500 mg as suspension, overnight fast b) 1000 mg in capsule at mealtime Cumulative 24 hr excretions, unchanged drug Healthy adults DRUGS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; BLOOD PLASMA; URINE	Sennello, L.T. Sonders, R.C. Friedman, N. 1978 Clinical Pharmacology and Therapeutics 23(4):414-420

Acetic acid, cyano-
372-09-8
C3-H3-N-02
MW 85.06, MP 66 C, BP 108 C at 15 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4704 Urine	Ingestion	Colorimetry	1	18-58% of dose	Not applicable	Days 2-14 on 250 mg/6 hr of beta-aminopropionitrile. Plateau levels not reached until day 7. Estimated from graph. 16 yr old black with massive keloids removed surgically. DRUGS; DRUG THERAPY; URINE; METABOLISM; METABOLITES; ENZYMES	Fleisher, J.H. Peacock, E.E. Chvapil, M. 1978 Clinical Pharmacology and Therapeutics 23(5):520-524

Adriamycin (8 CI)
5,12-Naphthacenedione, 10-((3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxy)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxy-, (8S-cis)- (9 CI)
23214-92-8
C27-H29-N-011
MW 543.54, MP 169-170.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4705 Blood, plasma		Fluorometry	17	a) 540-10.5 ng/ml b) 380-9.5 ng/ml c) 1050-7.5 ng/ml d) 550-7.0 ng/ml e) 600-3.6 ng/ml f) 100-7.0 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2 hepatoma patients, dose 45 mg/sq m b) 4 non-hepatoma patients, dose 40-45 mg/sq m c) 3 hepatoma patients, dose 30 mg/sq m d) 4 non-hepatoma patients, dose 30 mg/sq m e) 4 hepatoma patients, dose 15 mg/sq m f) 1 non-hepatoma patient, dose 10 mg/sq m 0 and 25 hr, estimated from graphs Data available for metabolite. 54-71 yr olds with hepatomas and other neoplasms DRUGS; CHEMOTHERAPY; CIRRHOSIS; NEOPLASMS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLITES; ADULTS	Chan, K.K. Chlebowski, R.T. Tong, H. Chen, H.-S.G. Gross, J.F. Bateman, J.R. 1980 Cancer Research 40:1263-1268

Alanine, 3-(p-(bis(2-chloroethyl)amino)phenyl-, L- (8 CI)
L-Phenylalanine, 4-(bis(2-chloroethyl)amino)- (9 CI)
148-82-3
C13-H18-Cl2-N2-O2
MW 305.20, MP approx 177 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
#706 Blood, plasma	Injection	HPLC Radiometry	9	3.0-0.058 ug/ml	Not given	Medians, 0-6 hr after 0.6 mg/kg IV. Biexponential decay. Estimated from graph. Cancer patients, ages 44-70 yr, wt 43-86 kg DRUGS; CHEMOTHERAPY; URINE; BLOOD PLASMA; NEOPLASMS; DISEASES; METABOLITES	Alberts, D.S. Chang, S.Y. Chen, H.-S.G. Moon, T.E. Evans, T.L. Furner, R.L. Himmelstein, K. Gross, J.F. 1979 Clincal Pharmacology and Therapeutics 26(1):73-80
#707 Blood, plasma	Ingestion	HPLC	11	a) 0.07-0.63 ug/ml b) 0.18-0.38 ug/ml	a) 0.28 + or - 0.15 ug/ml b) 0.31 + or - 0.11 ug/ml	a) 11 subjects, after 0.6 mg/kg, as tablets b) 3 subjects, after 0.6 mg/kg, as solution Peaks 29-70 yr old cancer patients, wt 44-84 kg DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS	Alberts, D.S. Chang, S.Y. Chen, H.-S.G. Evans, T.L. Moon, T.E. 1979 Clinical Pharmacology and Therapeutics 26(6):737-745
#708 Urine	Injection	HPLC	9	1.5-21.6% of dose	13.0 + or - 5.4% of dose	24 hr excretion after 0.6 mg/kg Cancer patients, ages 44-70 yr, wt 43-86 kg DRUGS; CHEMOTHERAPY; URINE; BLOOD PLASMA; NEOPLASMS; DISEASES; METABOLITES	Alberts, D.S. Chang, S.Y. Chen, H.-S.G. Moon, T.E. Evans, T.L. Furner, R.L. Himmelstein, K. Gross, J.F. 1979 Clincal Pharmacology and Therapeutics 26(1):73-80
#709 Urine	Ingestion	HPLC	11	a) 2.8-21.4% of dose b) 9-16% of dose	a) 10.9 + or - 4.9% of dose b) 13.2 + or - 3.7% of dose	a) 11 subjects, after 0.6 mg/kg as tablets b) 3 subjects, after 0.6 mg/kg as solution 24-hr excretions 29-70 yr old cancer patients, wt 44-84 kg DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS	Alberts, D.S. Chang, S.Y. Chen, H.-S.G. Evans, T.L. Moon, T.E. 1979 Clinical Pharmacology and Therapeutics 26(6):737-745

alpha-[4-(1-Oxo-2-isoindolinyl)phenyl]propionic acid (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4710 Blood, plasma	Ingestion	GC	1	a) 1.0-7.5 ug/ml b) 6.0-0.7 ug/ml	a) Not applicable b) Not applicable	a) d-enantiomer. 0.5 and 1.5 hr after 200 mg racemic mixture. Final measurement, 1.8 ug/ml at 10 hr b) l-enantiomer. 1 and 10 hr after 200 mg racemic mixture. Initial measurement, 1.0 ug/ml at 0.5 hr Estimated from graph DRUGS; ITALY; ANTI-INFLAMMATORY AGENTS; ANALGESICS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; BLOOD PLASMA	Tosolini, G.P. Moro, E. Forgione, A. Ranghieri, M. Mandelli, V. 1974 Journal of Pharmaceutical Sciences 63(7):1072-1076

Ammonium, (m-hydroxyphenyl)trimethyl-, dimethylcarbamate (ester) (8 CI)
Benzenaminium, 3-(((dimethylamino)carbonyl)oxy)-N,N,N-trimethyl- (9 CI)
59-99-4
C12-H19-N2-O2
MW 223.33

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4711 Blood, plasma	Ingestion	GC	1	4.7-33 ng/ml	Not given	Dose, 30 mg as bromide, 6X/day Myasthenic patient, U.K. DRUGS; BLOOD PLASMA; MEASUREMENT METHODS; UNITED KINGDOM	Davison, S.C. Hyman, W. Prentis, R.A. Dehghan, A. Chan, K. 1980 Methods and Findings in Experimental and Clinical Pharmacology 2(2):77-82

Ammonium, (o-bromobenzyl)ethyldimethyl-, p-toluenesulfonate (8 CI)
Benzenemethanaminium, 2-bromo-N-ethyl-N,N-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9 CI)
61-75-6
C11-H17-Br-N.C7-H7-O3-S
MW 414.4, MP approx 98 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4712 Blood, serum	Injection Ingestion	GC	10	a) 38-143 ng/ml b) 1134-2436 ng/ml	a) 76 ng/ml b) 1896 ng/ml	a) Peak after 5 mg/kg, oral b) Peak after 30 min IV, 5 mg/kg Healthy, 20-47 yr olds, Michigan Anxiety, flushing, excitement, increased blood pressure and heart rate, dizziness, nasal congestion, transient headache and nausea in some. MICHIGAN; ADULTS; BLOOD SERUM; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; COMPARATIVE EVALUATIONS	Anderson, J.L. Patterson, E. Wagner, J.G. Stewart, J.R. Behm, H.L. Lucchesi, B.R. 1980 Clinical Pharmacology and Therapeutics 28(4):468-478

(NEXT PAGE)

Ammonium, (c-bromobenzyl)ethyldimethyl-, p-toluenesulfonate (8 CI)
Benzenemethanaminium, 2-bromo-N-ethyl-N,N-dimethyl-, salt with 4-methylbenzenesulfonic acid (1:1) (9 CI)
61-75-6
C11-H17-Br-N.C7-H7-O3-S
MW 414.4, MP approx 98 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4713 Blood serum	Injection Ingestion	GC-EC	a) 6 b) 7	a) 2.5-0.08 ug/ml b) 72-461 ng/ml	a) Not applicable b) 186 ng/ml	a) Initial measurement and 24 hr after 5 mg/kg as tosylate, IV, range of means, estimated from graph b) Steady-state concentration, mean oral dose, 41 mg/kg/day as tosylate Cardiac patients, 44-77 yr old, oral therapy after 3-7 days of IV therapy. Variable, mostly postural, hypotension with oral therapy. ADULTS; CARDIOVASCULAR DISEASES; HEART DISEASES; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DRUG THERAPY; MEASUREMENT METHODS	Anderson, J.L. Patterson, E. Wagner, J.G. Johnson, T.A. Lucchesi, B.R. Pitt, B. 1981 Journal of Cardiovascular Pharmacology 3:485-499
4714 Urine	Injection Ingestion	GC	10	a) 0.3-0.9% of dose b) 0.1-0.2% of dose	a) Not given b) Not given	a) Peak after 30 min IV, 5 mg/kg b) Peak after 5 mg/kg, oral Healthy, 20-47 yr olds, Michigan Anxiety, flushing, excitement, increased blood pressure and heart rate, dizziness, nasal congestion, transient headache and nausea in some. MICHIGAN; ADULTS; BLOOD SERUM; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; COMPARATIVE EVALUATIONS	Anderson, J.L. Patterson, E. Wagner, J.G. Stewart, J.E. Behm, H.L. Lucchesi, B.R. 1980 Clinical Pharmacology and Therapeutics 28(4):468-478

Aniline, 4,4'-sulfonyldi- (8 CI)
Benzeneamine, 4,4'-sulfonylbis- (9 CI)
80-08-0
C12-H12-N2-O2-S
MW 248.30, MP 175-176 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4715 Blood, serum	Ingestion	Fluorometry	6	a) 2.5-0.1 mg/l b) 3.0-0.02 mg/l c) 2.0-0.07 mg/l d) 2.8-0.03 mg/l e) 15-0.5 mg/l f) 10-0.34 mg/l	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Dapsone dose 100 mg/day, 5 days (Phase 1) b) After 118 g activated charcoal 10-58 hr after last dapsone dose (Phase 2) c) Monoacetyldapsone, phase 1 d) Monoacetyldapsone, Phase 2 e) Initial and 96 hr measurement of dapsone in patient after 1 g drug + activated charcoal f) Initial and 96 hr measurement off monoacetyldapsone in patient after 1 g drug + activated charcoal a)-d) 5 subjects, initial and 96 hr measurement, starting 10 hr after last dose Healthy 21-46 yr olds, wt 48-74 kg. 21 yr old patient, wt 46 kg FINLAND; DRUGS; ANTI-INFLAMMATORY AGENTS; BLOOD SERUM; URINE; METABOLITES; ADULTS	Neuvonen, P.J. Elonen, E. Mattila, M.J. 1980 Clinical Pharmacology and Therapeutics 27(6):823-827

(NEXT PAGE)

Aniline, 4,4'-sulfonyldi- (8 CI)
Benzeneamine, 4,4'-sulfonylbis- (9 CI)
80-08-0
C12-H12-N2-O2-S
MW 248.30, MP 175-176 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4716 Urine	Ingestion	Fluorometry	6	a) Not given b) Not given c) Not given d) Not given e) Not applicable f) Not applicable	a) 16.6 + or - 1.1% of dose b) 9.9 + or - 0.5% of dose c) 6.3 + or - 0.9% of dose d) 4.2 + or - 1.2% of dose e) 285 mg f) 62 mg a)-d) S.E.	a) Dapsone dose 100 mg/day, 5 days (Phase 1) b) After 118 g activated charcoal 10-58 hr after last dapsone dose (Phase 2) c) Monoacetyldapsone, phase 1 d) Monoacetyldapsone, phase 2 e) Cumulative 5 day excretion of dapsone in patient after 1 g drug + activated charcoal f) Cumulative 5 day excretion of monoacetyldapsone in patient after 1 g drug + activated charcoal a)-d) 5 subjects, 96 hr excretions starting 10 hr after last dose Healthy 21-46 yr olds, wt 48-74 kg. 21 yr old patient, wt 46 kg FINLAND; DRUGS; ANTI-INFLAMMATORY AGENTS; BLOOD SERUM; URINE; METABOLITES; ADULTS	Neuvonen, P.J. Elonen, E. Mattila, M.J. 1980 Clinical Pharmacology and Therapeutics 27(6):823-827

Anthranilic acid, 4-chloro-N-furfuryl-5-sulfamoyl- (8 CI)
Benzoic acid, 5-(aminosulfonyl)-4-chloro-2-((2-furanylmethyl)amino)- (9 CI)
54-31-9
C12-H11-Cl-N2-O5-S
MW 330.77, MP 206 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4717 Blood, plasma	Injection	GC	6	a) 750-6048 ng/ml b) 750-1588 ng/ml	a) Not given b) Not given	a) Initial measurement and 2.5-3 hr after IV bolus of 10 mg, then continuous infusion of 8 mg/hr b) Initial measurement and several hr after 1 gm probenecid IV 2.5-3 hr after start of infusion Some values estimated from graph. Healthy 22-28 yr olds, weighing 74 + or - 8 kg, fasted before dose. Marked diuresis DRUGS; SWEDEN; URINE; BLOOD PLASMA; DIURETICS; DRUG INTERACTION; ADULTS	Odlind, B. Beermann, B. 1980 Clinical Pharmacology and Therapeutics 27(6):784-790
4718 Urine	Injection	GC-EC	16	a) 22.60-73.4% of dose b) 3.3-40.4% of dose c) 0.13-3.92% of dose	a) 56.0% of dose b) 10.78% of dose c) 1.88% of dose medians	a) Unchanged furosemide b) Conjugated furosemide c) Acid metabolite 24-hr cumulative excretions after 20-160 mg furosemide (mean dose = 67.24 mg). 20-88 yr olds with acute pulmonary edema, wt 46.8-100 kg, some on other drugs, some with acute myocardial infarction. DRUGS; METABOLISM; METABOLITES; CANADA; DIURETICS; MEASUREMENT METHODS; HEART DISEASES; URINE; COMPARATIVE EVALUATIONS; ADULTS; DRUG THERAPY	Perez, J. Sitar, D.S. Ogilvie, R.I. 1979 Drug Metabolism and Disposition 7(6):383-387

(NEXT PAGE)

Anthranilic acid, 4-chloro-N-furfuryl-5-sulfamoyl- (8 CI)
Benzoic acid, 5-(aminosulfonyl)-4-chloro-2-((2-furanylmethyl)amino)- (9 CI)
54-31-9
C12-H11-Cl-N2-O5-S
MW 330.77, MP 206 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4719 Urine	Injection	GC	6	a) 2.86-3.21 mg/30 min b) 1.75-1.25 mg/30 min	a) Not given b) Not given	a) Initial measurement and 2.5-3 hr after IV bolus of 10 mg, then continuous infusion of 8 mg/hr b) Initial measurement and several hr after 1 gm probenecid IV 2.5-3 hr after start of infusion Some values estimated from graph. Healthy 22-28 yr olds, weighing 74 + or - 8 kg, fasted before dose. Marked diuresis DRUGS; SWEDEN; URINE; BLOOD PLASMA; DIURETICS; DRUG INTERACTION; ADULTS	Odlind, B. Beermann, B. 1980 Clinical Pharmacology and Therapeutics 27(6):784-790

Antipyrine (8 CI)
3H-Pyrazol-3-one, 1,2-dihydro-1,5-dimethyl-2-phenyl- (9 CI)
60-80-0
C11-H12-N2-O
MW 188.22, MP 111-113 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4720 Blood, plasma	Ingestion	RIA	10	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2.21 ug/ml b) 2.18 ug/ml c) 1.54 ug/ml d) 1.44 ug/ml e) 0.45 ug/ml f) 0.35 ug/ml	a) Control diet - 3 hr b) Brussels spouts and cabbage diet - 3 hr c) Control diet - 9 hr d) Brussels sprouts and cabbage diet - 9 hr e) Control diet - 30 hr f) Brussels spouts and cabbage diet - 30 hr 1) Dose was 1.8 mg/kg 9-30 hr values significantly different 21-32 yr olds, wt 50-79 kg, nonsmokers, fasted before and after dose. DRUGS; DIETS; BLOOD PLASMA; METABOLITES; COMPARATIVE EVALUATIONS	Pantuck, E.J. Pantuck, C.B. Garland, W.A. Min, B.H. Wattenberg, L.W. Anderson, K.E. Kappas, A. Conney, A.H. 1979 Clinical Pharmacology and Therapeutics 25(1):88-95
4721 Blood, plasma	Ingestion	GC	11	11.5-26.0 ug/ml	Not given	Peaks, 3 hr afer 18 mg/kg Values highly correlated with saliva values. Monoexponential decline. Estimated from graphs. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272
4722 Saliva	Ingestion	GC	11	12.5-29 ug/ml	Not given	Peaks, 3 hr after 18 mg/kg. Monoexponential decline. Estimated from graphs. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272

(NEXT PAGE)

Antipyrine (8 CI)
3H-Pyrazol-3-one, 1,2-dihydro-1,5-dimethyl-2-phenyl- (9 CI)
60-80-0
C11-H12-N2-O
MW 188.22, MP 111-113 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4723 Urine	Ingestion	TLC GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 33% of dose b) 17% of dose c) 17% of dose	a) As 4-hydroxyantipyrine b) As 3-hydroxymethylantipyrine c) As Norantipyrine 0-50 hr cumulative excretion after 1 g 70 kg, white male phenotyped as "poor metabolizer" according to capacity to 4-hydroxylate debrisoquine and sparteine. DRUGS; METABOLISM; METABOLITES; URINE; COMPARATIVE EVALUATIONS; SEDATIVES; HYPNOTICS; ANTIPYRETICS; ANTIHYPERTENSIVE AGENTS; ANTIARRHYTHMIC AGENTS	Inaba, T. Ofton, S.V. Kalow, W. 1980 Clinical Pharmacology and Therapeutics 27(4):547-549

Antipyrine, 4-(dimethylamino)- (8 CI)
3H-Pyrazol-3-one, 4-(dimethylamino)-1,2-dihydro-1,5-dimethyl-2-phenyl- (9 CI)
58-15-1
C13-H17-N3-O
MW 231.29, MP 107-109 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4724 Blood, plasma	Ingestion	GC	12	4.5-6.2 ug/ml	Not given	3 hr after 9 mg/kg. Estimated from graph. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272
4725 Blood, plasma	Ingestion	GC	6	a) Not given b) Not given	a) 8.01 + or - 2.52 mg/l hr b) 7.96 + or - 4.13 mg/l hr	a) Dose, 2 mg/kg at 8 A.M. after 12-hr fast b) Dose, 2 mg/kg at 8 P.M. after usual meal at 5 P.M. Area under the curve for free + bound drug Healthy 22-31 yr olds, wt 59-85 kg PENNSYLVANIA; ADULTS; BLOOD PLASMA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS; DIETS	Shively, C.A. Simons, P.J. Passanant, G.T. Dvorchik, B.H. Vesell, E.S. 1981 Clinical Pharmacology and Therapeutics 29(1):65-73
4726 Saliva	Ingestion	GC	11	1.7-7.6 ug/ml	Not given	3 hr after 9 mg/kg. Monoexponential decline. Estimated from graph. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272

Barbituric acid, 5-(1-cyclohexen-1-yl)-1,5-dimethyl- (8 CI) (VAN)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-(1-cyclohexen-1-yl)-1,5-dimethyl- (9 CI)
56-29-1
C12-H16-N2-O3
MW 236.26, MP 145-147 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4727 Blood, plasma	Injection	GC	1	a) 4.3-12.8 mg/l b) 12.8-2.0 mg/l	a) Not applicable b) Not applicable	a) 5-60 min infusion b) 0-720 min post-infusion Dose, 556.2 mg (7.32 mg/kg) as sodium salt. Biexponential decay. 60 yr old hepatitis patient. DRUGS; METABOLISM; ADULTS; COMPARATIVE EVALUATIONS; URINE; BLOOD PLASMA; LIVER DISEASES	Breimer, D.D. Zilly, W. Richter, E. 1975 Clinical Pharmacology and Therapeutics 18(4):433-440
4728 Urine	Injection	GC	a) 6 b) 11	a) Not given b) Not given c) Not given d) Not given	a) 42.3 + or - 13.6 % of dose b) 12.6 + or - 6.1 % of dose c) 0.31 + or - 0.13 % of dose d) 0.33 + or - 0.24 % of dose	a) Controls, 3'-ketohexobarbital b) Patients, 3'-ketohexobarbital c) Controls, unchanged drug d) Patients, unchanged drug 24-hr cumulative excretions after 2.97-7.32 mg/kg as sodium salt, IV. 17-62 yr old patients with acute hepatitis, healthy controls. DRUGS; METABOLISM; ADULTS; COMPARATIVE EVALUATIONS; URINE; BLOOD PLASMA; LIVER DISEASES	Breimer, D.D. Zilly, W. Richter, E. 1975 Clinical Pharmacology and Therapeutics 18(4):433-440

Barbituric acid, 5-ethyl-5-(1-methylbutyl)- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(1-methylbutyl)- (9 CI)
76-74-4
C11-H18-N2-O3
MW 226.31

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4729 Blood			1	Not given	8 ug/ml	Autopsy sample 44 yr old pharmacist, suicide, overdose of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4730 Blood, plasma		GC	4	2-7 umoles/l	5.25 umoles/l	36 hr after last of ten, 0.1 g daily doses at bedtime. Nonsmoking 23-37 yr olds, with no evidence of disease or drug intake. DRUGS; METABOLISM; ENZYMES; HYPERTENSION; BLOOD PLASMA; DRUG INTERACTION; ADULTS; COMPARATIVE EVALUATIONS	Collste, P. Seideman, P. Borg, K-O. Haglund, K. von Bahr, C. 1979 Clinical Pharmacology and Therapeutics 25(4):423-427
4731 Liver			1	Not given	52 ug/g	Autopsy samples 44 yr old pharmacist, suicide, overdose of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255

Barbituric acid, 5-ethyl-5-isopentyl- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(3-methylbutyl)- (9 CI)
57-43-2
C11-H18-N2-O3
MW 226.27, MP 156-158 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4732 Blood, plasma		GC/MS	a) 5 b) 5 c) 5 d) 5	a) 0.65-5.0 ug/ml b) 0.35-5.2 ug/ml c) 0.59-1.5 ug/ml d) 0.26-1.2 ug/ml	a) 2.59 ug/ml b) 2.53 ug/ml c) 1.16 ug/ml d) 0.82 ug/ml	a) Mothers, 200 mg daily for 1-6 wk b) Neonates (cords) of a) c) Mothers, 60-180 mg phenobarbital daily + 1 dose amobarbital during labor d) Neonates (cords) of c). 17-42 yr olds, treated with barbiturates for hypertension in pregnancy, and their newborn. DRUGS; NEWBORN; PREGNANCY; HYPERTENSION; SEDATIVES	Draffan, G.H. Dollery, C.T. Davies, D.S. Krauer, B. Williams, F.M. Clare, R.A. Trudinger, B.J. Darling, M. Sertel, H. Hawkins, D.F. 1976 Clinical Pharmacology and Therapeutics 19(1):271-275
4733 Urine	Ingestion		1	a) Not applicable b) Not applicable	a) 59% of dose (70.8 mg) b) 12% of dose (14.4 mg)	a) As 3-hydroxyamobarbital b) As amobarbital-N-glucopyranoside 0-100 hr cumulative excretion after 120 mg 70 kg, white male phenotyped as "poor metabolizer" according to capacity to 4-hydroxylate debrisoquine and sparteine. DRUGS; METABOLISM; METABOLITES; URINE; COMPARATIVE EVALUATIONS; SEDATIVES; HYPNOTICS; ANTIPYRETICS; ANTIHYPERTENSIVE AGENTS; ANTIARRHYTHMIC AGENTS	Inaba, T. Ofton, S.V. Kalow, W. 1980 Clinical Pharmacology and Therapeutics 27(4):547-549
4734 Urine	Ingestion	GC/MS	167	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 46.1 + or - 4.7 umoles/l b) 59.3 + or - 2.1 umoles/l c) 39.1 + or - 3.1 umoles/l d) 29.2 + or - 1.5 umoles/l e) 59.5 + or - 2.6 umoles/l f) 58.9 + or - 3.8 umoles/l g) 27.3 + or - 1.6 umoles/l h) 33.0 + or - 3.0 umoles/l S.E.	a) 29 Orientals, 3'-hydroxyamobarbital (metabolite) b) 139 Caucasians, 3'-hydroxyamobarbital c) 29 Orientals, 1-(beta-D-glucopyranosyl) amobarbital (metabolite) d) 138 Caucasians, 1-(beta-D-glucopyranosyl) amobarbital e) 93 Caucasian males, 3'-hydroxyamobarbital f) 45 Caucasian males, 3'-hydroxyamobarbital g) 93 Caucasian males, 1-(beta-D-glucopyranosyl) amobarbital h) 45 Caucasian females, 1-(beta-D-glucopyranosyl) amobarbital About 36 hr after 60 mg amobarbital. Oriental and Caucasian medical students. DRUGS; RACIAL STUDIES; METABOLISM; COMPARATIVE EVALUATIONS; URINE; SEX; METABOLITES; CANADA	Kalow, W. Tang, B.K. Fadar, D. Endrenyi, L. Chan, F.-Y. 1979 Clinical Pharmacology and Therapeutics 26(6):766-776

Barbituric acid, 5-ethyl-5-phenyl- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-phenyl- (9 CI)
50-06-6
C12-H12-N2-O3
MW 232.23, MP 174-178 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4735 Blood			1	Not given	8 ug/ml	Autopsy sample 44 yr old pharmacist, suicide, overdoses of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4736 Blood, plasma		GC	36	10-37 ug/ml	Not given	Unspecified daily dosages. Negatively correlated with plasma renin concentration, r= -0.497, p < 0.005. 15-55 yr old epileptics, on phenobarbital > 3 months. DRUGS; ANTICONVULSANTS; BLOOD PLASMA; WISCONSIN	Booker, H.E. Goodfriend, T.L. Tewksbury, D.A. 1979 Clinical Pharmacology and Therapeutics 26(6):715-717
4737 Blood, plasma	Ingestion	GC	a) 70 b) 39	a) Not given b) Not given	a) 11.054 + or - 14.89 ug/ml b) 9.097 + or - 10.10 ug/ml	a) Males, 2-4 hr after 1.15 + or - 1.818 mg/kg b) Females, 2-4 hr after 1.16 + or - 1.703 mg/kg Patients on maintenance doses for seizures. ANTICONVULSANTS; DRUG THERAPY; BLOOD PLASMA; SEX; DRUG INTERACTION; DIPHENYLHYDANTOINS	Schaeffer, D.J. Janardan, K.G. Somani, S.M. Easton, D. Sherman, D. 1980 Toxicology and Applied Pharmacology 53:354-364
4738 Blood, plasma	Ingestion	GC/MS	6	a) 1.38-2.40 ug/ml b) 1.23-2.25 ug/ml	a) 1.90 + or - 0.36 ug/ml b) 1.68 + or - 0.38 ug/ml	a) Phenobarbital, 60 mg b) Phenobarbital, 60 mg, plus valproic acid (250 mg 2x/day starting 4 days before) a) and b) not different, p > 0.05. Normal 25-40 hr old Caucasians, free of any drug. DRUGS; DRUG INTERACTION; ADULTS; BLOOD PLASMA; SEDATIVES; HYPNOTICS; ANTICONVULSANTS; METABOLISM	Patel, I.H. Levy, R.H. Cutler, R.E. 1980 Clinical Pharmacology and Therapeutics 27(4):515-521
4739 Blood, serum		HPLC	12	a) 12.0-25.4 mg/l b) 13.3-24.7 mg/l c) 17.6-23.1 mg/l	a) Not applicable b) Not applicable c) Not applicable	a) Means, after 1.3-4.4 mg/kg/day, 2X/day regimen, 10 subjects b) Means, after 1.3-5.6 mg/kg/day, 1X/day regimen, 10 subjects c) Means, after 3.4-5.6 mg/kg/day, 3X/day regimen, 2 subjects 1-8.8 yr olds, infrequent seizures SALIVA; BLOOD SERUM; CHILDREN; DRUGS	Walson, P.D. Mimaki, T. Curless, R. Mayersohn, M. Perrier, D. 1980 Journal of Pediatrics 97(2):303-305

(NEXT PAGE)

Barbituric acid, 5-ethyl-5-phenyl- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-phenyl- (9 CI)
50-06-6
C12-H12-N2-03
MW 232.23, MP 174-178 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4740 Blood, serum		GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 150 ug/ml b) 99 ug/ml c) 52 ug/ml	a) 270 min perfusion, 2180 mg absorbed in column 1 b) 580 min perfusion, 1900 mg absorbed in column 2 c) 360 min perfusion, 1130 mg absorbed in column 3 During charccal hemoperfusion Data also for detoxification with alkaline forced diuresis Patient with severe phenobarbital intoxication. DRUGS; DRUG ABUSE; NETHERLANDS; MEASUREMENT METHODS; COMPARATIVE EVALUATIONS; BLOOD SERUM	de Wolff, F.A. Smit, N.D. 1980 Archives of Toxicology 43:233-235
4741 Liver			1	Not given	46 ug/g	Autopsy sample 44 yr old pharmacist, suicide, overdoses of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4742 Saliva		HPLC		a) 2.0-7.5 mg/l b) 2.3-10.8 mg/l c) 5.7-6.8 mg/l	a) Not applicable b) Not applicable c) Not applicable	a) Means, after 1.3-4.4 mg/kg/day, 2X/day regimen, 11 subjects b) Means, after 1.3-5.6 mg/kg/day, 1X/day regimen, 11 subjects c) Means, after 3.4-5.6 mg/kg/day, 3X/day regimen, 2 subjects 1-8.8 yr olds, infrequent seizures SALIVA; BLOOD SERUM; CHILDREN; DRUGS	Walson, P.D. Mimaki, T. Curless, R. Mayersohn, M. Perrier, D. 1980 Journal of Pediatrics 97(2):303-305

Benzamide, 4-(acetylamino)-N-(2-(diethylamino)ethyl)-
32795-44-1
C15-H23-N3-02
MW 277.41

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4743 Blood, plasma	Injection	HPLC	6	24-45 ug/ml	30.7 ug/ml	Peaks, 30 min after 15 mg/kg, IV. Triexponential decline. Estimated from graph. Dialysis increased total clearance 4-fold. Functionially anephric 33-56 yr olds. No side effects. DRUGS; BLOOD PLASMA; ADULTS; DISEASES; ILLINOIS; COMPARATIVE EVALUATIONS	Stec, G.P. Atkinson, A.J. Nevin, M.J. Thenot, J-P. Ruo, T.I. Gibson, T.P. Ivanovich, P. del Greco, F. 1979 Clinical Pharmacology and Therapeutics 26(5):618-628

(NEXT PAGE)

Benzamide, 4-(acetylamino)-N-(2-(diethylamino)ethyl)-
32795-44-1
C15-H23-N3-O2
MW 277.41

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4744 Blood, plasma	Injection Ingestion	MS	3	a) 4.07-0.8 ug/ml b) 168-0.44 ug/ml	a) Not applicable b) Not applicable	a) 45 min and 12 hr after 426-443 mg, oral. 1.34 ug/ml at 30 min b) 5 min and 12 hr after 25 mg at 50 mg/min, IV. Continuous exponential decline. Estimated from graph Dose as hydrochloride. 35-38 yr olds, fasted before and after dose. No effect on pulse rate, blood pressure or electrocardiogram. DRUGS; BLOOD PLASMA; ILLINOIS; MEASUREMENT METHODS; URINE; ADULTS	Strong, J.M. Dutcher, J.S. Lee, W-K. Atkinson, A.J., Jr. 1975 Clinical Pharmacology and Therapeutics 18(5):613-622
4745 Urine	Injection Ingestion	MS	3	74.0-96.0% of dose	82.7% of dose	24 hr urines after 426-443 mg, oral, and 5 min IV of 250 mg. Dose as hydrochloride. 35-38 yr olds, fasted before and after dose. No effect on pulse rate, blood pressure or electrocardiogram. DRUGS; BLOOD PLASMA; ILLINOIS; MEASUREMENT METHODS; URINE; ADULTS	Strong, J.M. Dutcher, J.S. Lee, W-K. Atkinson, A.J., Jr. 1975 Clinical Pharmacology and Therapeutics 18(5):613-622

Benzenepropanamine, N-methyl-gamma-(4-(trifluoromethyl)phenoxy)-, (+-)-
54910-89-3
C17-H18-F3-N-O
MW 309.33

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4746 Blood, plasma	Ingestion	GC-EC	4	a) Not given b) Not given	a) 147 ng/ml b) 87.5 ng/ml	a) Norfluoxetine metabolite, days 17-30 b) Fluoxetine, days 20-30 Dose, 30 mg/day for days 1-7 and 20 mg/day for days 23-30. Steady state levels. Normal, 21-50 yr olds on modified, catecholamine-free diet. Reduced platelet serotonin levels and uptake. No adverse side effects and no behavioral effects. DRUGS; INDIANA; BLOOD PLASMA; PLATELETS; ADULTS; DRUG INTERACTION	Lemberger, L. Rowe, H. Carmichael, R. Crabtree, R. Horng, J.S. Bymaster, F. Wong, D. 1978 Clinical Pharmacology and Therapeutics 23(4):421-429

Benzenesulfonamide, 2-chloro-5-(1-hydroxy-3-oxo-1-isoindolinyl)- (8 CI)
Benzenesulfonamide, 2-chloro-5-(2,3-dihydro-1-hydroxy-3-oxo-1H-isoindol-1-yl)- (9 CI)
77-36-1
C14-H11-Cl-N2-O4-S
MW 338.78, MP 224-226 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4747 Blood, plasma	Ingestion	GC	8	a) 0.0205-0.0365 mg/l b) 0.0575-0.1430 mg/l c) 0.0798-0.0978 mg/l	a) 0.0274 mg/l b) 0.0956 mg/l c) 0.0925 mg/l	a) 50 mg dose, 3 subjects b) 100 mg dose, 8 subjects c) 200 mg dose, 3 subjects in a) 0-100 hr average levels, (area-under-the-curve/t). Healthy volunteers, ages 20-32 yr, fasted overnight. DRUGS; DIURETICS; NETHERLANDS; ADULTS; URINE; BLOOD PLASMA	Fleuren, H.L.J. Verwey-van Wissen, C. Van Rossum, J.M. 1979 Clinical Pharmacology and Therapeutics 25(6):806-812
4748 Blood, whole	Ingestion	Colorimetry	1	0-6.3 mg/l	Not given	Initial measurement and 6 hr after two 100 mg tablets. Detectable at 1 hr. Final measurement, 1.5 mg/l at 5 days. Estimated from graph. Normal man. CANADA; DRUGS; MEASUREMENT METHODS; BLOOD; URINE; ADULTS	Tweeddale, M.G. Ogilvie, R.I. 1974 Journal of Pharmaceutical Sciences 63(7):1065-1068
4749 Urine	Ingestion	GC	8	a) 12.8-19.0 mg b) 29.2-37.1 mg c) 35.1-46.4 mg	a) 16.0 mg b) 33.64 mg c) 41.07 mg	a) 50 mg dose, 3 subjects b) 100 mg dose c) 200 mg dose, 3 subjects in a) 0-100 hr cumulative excretions. Healthy 20-32 yr olds, wt 65-88 kg, fasted overnight. DRUGS; DIURETICS; NETHERLANDS; ADULTS; URINE; BLOOD PLASMA	Fleuren, H.L.J. Verwey-van Wissen, C. Van Rossum, J.M. 1979 Clinical Pharmacology and Therapeutics 25(6):806-812
4750 Urine	Ingestion	Colorimetry	3	36-64 mg	Not given	Daily excretion after 100 mg/day for > 1 month. Hospitalized men. CANADA; DRUGS; MEASUREMENT METHODS; BLOOD; URINE; ADULTS	Tweeddale, M.G. Ogilvie, R.I. 1974 Journal of Pharmaceutical Sciences 63(7):1065-1068

Benzoic acid, p-(dipropylsulfamoyl)- (8 CI)
Benzoic acid, 4-((dipropylamino)sulfonyl)- (9 CI)
57-66-9
C13-H19-N-O4-S
MW 285.36, MP 194-196 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4751 Blood, serum	Ingestion		3	a) 21-116 ug/ml b) 25-154 ug/ml	a) 58.7 ug/ml b) 71.7 ug/ml	a) Before methotrexate b) After 15 min IV of 3.0 g/sq m methotrexate starting on day 4 Steady state geometric means 12 hr before - 24 hr after methotrexate. 1.7 g/sq m probenecid given in 4 divided doses. Cancer patients, ages 20, 24, and 47 yr. No toxic effects. DRUGS; DRUG INTERACTION; CHEMOTHERAPY; NEOPLASMS; BLOOD SERUM; URINE; METABOLISM; ADULTS; CHILDREN	Howell, S.B. Olshen, R.A. Rice, J.A. 1979 Clinical Pharmacology and Therapeutics 26(5):641-646

(NEXT PAGE)

Benzoic acid, p-(dipropylsulfamoyl)- (8 CI)
Benzoic acid, 4-((dipropylamino)sulfonyl)- (9 CI)
57-66-9
C13-H19-N-04-S
MW 285.36, MP 194-196 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4752 Urine	Ingestion		3	12-34% of daily dose	Not given	Daily excretion on 1.7 g/sq m in 4 doses/day. Unaffected during 24 hr after 3.0 g/sq m methotrexate, IV. Cancer patients, ages 20, 24, and 47 yr. No toxic effects. DRUGS; DRUG INTERACTION; CHEMOTHERAPY; NEOPLASMS; BLOOD SERUM; URINE; METABOLISM; ADULTS; CHILDREN	Howell, S.B. Olshen, R.A. Rice, J.A. 1979 Clinical Pharmacology and Therapeutics 26(5):641-646

Benzoic acid, 2-hydroxy-, 2-carboxyphenyl ester
552-94-3
C14-H10-05
MW 258.23, MP 230 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4753 Blood, plasma	Ingestion	HPLC	1	0-33.4 ug/ml	Not given	0 and 1 hr after 1000 mg. Nonexponential decline with clearance at about 6 hr. Estimated from graph. MINNESOTA; ADULTS; BLOOD PLASMA; ANALGESICS; ANTI-INFLAMMATORY AGENTS; MEASUREMENT METHODS; DRUGS	Harrison, L.I. Funk, M.L. Ober, P.E. 1980 Journal of Pharmaceutical Sciences 69(11):1268-1271

Benzyl alcohol, alpha-(aminomethyl)-3,4-dihydroxy-, (-)- (8 CI)
1,2-Benzenediol, 4-(2-amino-1-hydroxyethyl)-, (R)- (9 CI)
51-41-2
C8-H11-N-03
MW 169.18, MP 191 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4754 Blood, plasma		Radiometry Enzymatic	12	a) Not given b) Not given	a) 750 + or - 66 ng/ml b) 399 + or - 34 ng/ml c) 51 + or - 6 ng/ml SE	a) 4 hr after dose b) 8 hr after dose c) 24 hr after dose Single 100-mg dose Healthy 20-28 yr olds, no cardiac, renal, hepatic or absorptive abnormalities. No medication > 15 days, fasted overnight. Reduction in systolic blood pressure, heart rate, and plasma renin activity. Increases in plasma norepinephrine at rest and during exercise. Effects correlate with drug level and last at least 24 hr. DRUGS; BLOOD PLASMA; BLOOD PRESSURE; ADULTS; HORMONES	Winer, N. Mason, W.D. Carter, C.H. Willoughby, T.L. Fochak, G.M. Cohen, I. Bell, R.M.S. 1979 Clinical Pharmacology and Therapeutics 26(3):315-325

(NEXT PAGE)

Benzyl alcohol, alpha-(aminomethyl)-3,4-dihydroxy-, (-)- (8 CI)
1,2-Benzenediol, 4-(2-amino-1-hydroxyethyl)-, (R)- (9 CI)
51-41-2
C8-H11-N-O3
MW 169.18, MP 191 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4755 Blood, plasma		Radiometry Enzymatic		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 296 pg/ml b) 468 pg/ml c) 232 pg/ml d) 515 pg/ml e) 293 pg/ml f) 667 pg/ml	a) Controls, supine b) Controls, standing c) Enuretics, supine d) Enuretics, standing e) Enuretics, supine, on 75 mg/day imipramine at bedtime f) Enuretics, standing, on 75 mg/day imipramine at bedtime 18 enuretic boys, mean age 9.8 + or - 1.9 yr. 16 controls, mean age 9.7 + or - 2.4 yr. DRUGS; CHILDREN; BLOOD PRESSURE; BLOOD PLASMA; DRUG THERAPY	Lake, C.R. Mikkelsen, E.J. Rapoport, J.L. Zavadil, A.P. Kopin, I.J. 1979 Clinical Pharmacology and Therapeutics 26(5):647-653
4756 Blood, plasma	Injection	Enzymatic	5	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.19 + or - 0.07 ug/l b) 0.239 + or - 0.1 ug/l c) 0.212 + or - 0.05 ug/l d) 0.289 + or - 0.08 ug/l e) 0.535 + or - 0.09 ug/l f) 1.36 + or - 0.4 ug/l	a) Predose b) 0.01 ug/kg/min c) 0.02 ug/kg/min d) 0.03 ug/kg/min e) 0.05 ug/kg/min f) 0.075 ug/kg min 10 min infusion rates Healthy Caucasians, ages 32.4 + or - 1.9 yr, nonsmokers, no caffeinated drinks for 48 hr Increased blood pressure and reduced heart rate correlated with dose DRUGS; BLOOD PLASMA; BLOOD PRESSURE; UNITED KINGDOM; ADULTS	Fitzgerald, G.A. Hossmann, V. Hamilton, C.A. Reid, J.L. Davies, D.S. Dollery, C.T. 1979 Clinical Pharmacology and Therapeutics 26(6):669-675
4757 Blood, whole	Injection	Radiometry	a) 5 b) 12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2.8 nCi/g b) 1.65 nCi/g c) 0.27 nCi/g d) 0.20 nCi/g e) 0.05 nCi/g f) 0.05 nCi/g	a) Non-pregnant, peak, 1 min after dose b) Pregnant, peak, 1 min after dose c) Non-pregnant, 5 min after dose d) Pregnant, 5 min after dose e) Non-pregnant, 240 min after dose f) Pregnant, 240 min after dose Estimated from graph. Dose, 50 uCi (1.1 ug) H3-labelled drug, IV Patients hospitalized for sterilization or abortion. Mean wt, 63.2-65.2 kg. DRUGS; PREGNANCY; BLOOD; FINLAND; UTERUS; URINE; OVARIES; OVIDUCT; COMPARATIVE EVALUATIONS	Saarikoski, S. 1980 American Journal of Obstetrics and Gynecology 136(8):1041-1044
4758 Ovary	Injection	Radiometry	a) 4 b) 4	a) Not given b) Not given	a) 0.7 + or - 0.1 nCi/g b) 0.3 + or - 0.1 nCi/g	a) Non-pregnant b) Pregnant 5 min after 50 uCi (1.1 ug) H3-labelled drug, IV Patients hospitalized for sterilization or abortion. Mean wt, 63.2-65.2 kg. DRUGS; PREGNANCY; BLOOD; FINLAND; UTERUS; URINE; OVARIES; OVIDUCT; COMPARATIVE EVALUATIONS	Saarikoski, S. 1980 American Journal of Obstetrics and Gynecology 136(8):1041-1044

(NEXT PAGE)

Benzyl alcohol, alpha-(aminomethyl)-3,4-dihydroxy-, (-)- (8 CI)
1,2-Benzenediol, 4-(2-amino-1-hydroxyethyl)-, (R)- (9 CI)
51-41-2
C8-H11-N-03
MW 169.18, MP 191 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4759 Oviduct	Injection	Radiometry	a) 5 b) 2	a) 3.5-2.2 nCi/g b) 1.1-0.6 nCi/g	a) Not given b) Not given	a) Non-pregnant b) Pregnant Range of means, 5 and 30 min after 50 uCi (1.1 ug) H3-labelled drug, IV Patients hospitalized for sterilization or abortion. Mean wt, 63.2-65.2 kg. DRUGS; PREGNANCY; BLOOD; FINLAND; UTERUS; URINE; OVARIES; OVIDUCT; COMPARATIVE EVALUATIONS	Saarikoski, S. 1980 American Journal of Obstetrics and Gynecology 136(8):1041-1044
4760 Urine	Injection	Radiometry	10	a) Not given b) Not given	a) 39.3 + or - 1.3% of dose b) 43.1 + or - 4.0% of dose	a) Non-pregnant b) Pregnant 24-hr excretions, after 50 uCi (1.1 ug) H3-labelled drug, IV Patients hospitalized for sterilization or abortion. Mean wt, 63.2-65.2 kg. DRUGS; PREGNANCY; BLOOD; FINLAND; UTERUS; URINE; OVARIES; OVIDUCT; COMPARATIVE EVALUATIONS	Saarikoski, S. 1980 American Journal of Obstetrics and Gynecology 136(8):1041-1044
4761 Uterus	Injection	Radiometry	a) 5 b) 12	a) 1.4-1.2 nCi/g b) 0.8-0.5 nCi/g	a) Not given b) Not given	a) Non-pregnant b) Pregnant Range of means, 5 and 30 min after 50 uCi (1.1 ug) H3-labelled drug, IV Patients hospitalized for sterilization or abortion. Mean wt, 63.2-65.2 kg. DRUGS; PREGNANCY; BLOOD; FINLAND; UTERUS; URINE; OVARIES; OVIDUCT; COMPARATIVE EVALUATIONS	Saarikoski, S. 1980 American Journal of Obstetrics and Gynecology 136(8):1041-1044

beta-D-Glucopyranosiduronic acid, cyanophenylmethyl, (R)-
1332-94-1
C14-H15-N-07
MW 309.27, MP 214-216 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4762 Blood, plasma	Ingestion Injection	GC/MS	1	180-60 ug/ml	Not given	Peak at 1.25 hr and 7.75 hr, after 6.0 g IM. Cancer patient. DRUGS; NEOPLASMS; BLOOD PLASMA; URINE; CHEMOTHERAPY	Ames, M.M. Kovach, J.S. Flora, K.P. 1978 Research Communications in Chemical Pathology and Pharmacology 22(1):175-185
4763 Urine	Ingestion Injection	GC/MS	1	Not given	15 mg/ml	2.25 hr after 6.0 g IM. 71% of dose recovered in 24 hr. Cancer patient. DRUGS; NEOPLASMS; BLOOD PLASMA; URINE; CHEMOTHERAPY	Ames, M.M. Kovach, J.S. Flora, K.P. 1978 Research Communications in Chemical Pathology and Pharmacology 22(1):175-185

Butanamide, N-(3-acetyl-4-(2-hydroxy-3-((1-methylethyl)amino)propoxy)phenyl)-, (+-)-
37517-30-9
C18-H28-N2-O4
MW 336.43, MP 119-123 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4764 Blood, plasma	Injection	HPLC	5	1346-4642 ug/l	2700 + or - 1323 ug/l	Peaks, after 0.35 mg/kg, IV Healthy 29-46 yr olds, wt 65-82 kg, fasted before dose. DRUGS; ANTIHYPERTENSIVE AGENTS; ADULTS; FRANCE; BLOOD PLASMA; URINE; METABOLITES	Roux, A. Flouvat, B. Chau, N.P. Letac, B. Lucsko, M. 1980 British Journal of Clinical Pharmacology 9:215-217
4765 Urine	Injection	HPLC	5	a) Not given b) Not given c) Not given d) Not given	a) 30.3 + or - 4.4% of dose b) 30.8 + or - 4.5% of dose c) 14.9 + or - 3.3% of dose d) 17.9 + or - 4.0% of dose	a) Unchanged drug, 0-24 hr excretion b) Unchanged drug, 0-72 hr excretion c) N-acetyl metabolite, 0-24 hr excretion d) N-acetyl metabolite, 0-72 hr excretion Dose, 0.35 mg/kg, IV. Healthy 29-46 yr olds, wt 65-82 kg fasted before dose. DRUGS; ANTIHYPERTENSIVE AGENTS; ADULTS; FRANCE; BLOOD PLASMA; URINE; METABOLITES	Roux, A. Flouvat, B. Chau, N.P. Letac, B. Lucsko, M. 1980 British Journal of Clinical Pharmacology 9:215-217

Butirosin
12772-35-9
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4766 Blood, plasma	Injection	Microbiological	6	a) 32-5 ug/ml b) 20-2 ug/ml c) Not given d) Not given	a) Not given b) Not given c) 9.6 ug/ml d) 16.3 ug/ml	a) 1 and 8 hr after single IM dose, 12 mg/kg, peak at 1 hr b) 1 and 8 hr after single IM dose, 8 mg/kg, peak at 1 hr c) Mean peak, day 1, dose, 300-900 mg/day d) Mean peak, days 2-7, dose, 300-900 mg/day Patients, ages 59-82 yr, wt 92-190 lb. Transient dizziness Elevated liver enzymes ADULTS; INFECTION; BLOOD; BLOOD PLASMA; URINE; ANTIBIOTICS	Keeney, E.E. Coodley, E.L. 1975 Journal of Clinical Pharmacology 15(10):695-699
4767 Urine	Injection		6	48-123% of dose/24 hr	90% of dose/24 hr	Dose, 450-900 mg/day. Patients, ages 59-82 yr, wt 92-190 lb. Transient dizziness Elevated liver enzymes ADULTS; INFECTION; BLOOD; BLOOD PLASMA; URINE; ANTIBIOTICS	Keeney, E.E. Coodley, E.L. 1975 Journal of Clinical Pharmacology 15(10):695-699

Caffeine (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3,7-trimethyl- (9 CI)
58-08-2
C8-H10-N4-O2
NN 194.19, MP 238 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4768 Blood	Ingestion	TLC	1	Not applicable	18.1 mg/100 ml	Autopsy. Gastric contents contained 18 g of drug 19 yr old DRUGS; CAFFEINE; BLOOD; AUTOPSIES; DRUG ABUSE	McGee, M.B. 1980 Journal of Forensic Sciences 25(1):29-32
4769 Blood, plasma	Injection		4	6.4-12.6 mg/l	8.9 mg/l	Range of means, after 7-18 days on maintenance dose of 2.5 mg/kg/day. Plasma and CSF caffeine correlated, r=0.92, P<0.001. Apneic premature infants, gestational ages 25-32 wk, postnatal ages 3-96 days. CAFFEINE; DRUGS; CANADA; BLOOD PLASMA; CEREBROSPINAL FLUID; INFANTS	Turmen, T. Louridas, T.A. Aranda, J.V. 1979 Journal of Pediatrics 95(4):644-646
4770 Blood, plasma	Ingestion	HPLC	4	a) 0.00-0.18 ug/ml b) 5.90-10.95 ug/ml c) 5.99-8.95 ug/ml d) 6.97-7.60 ug/ml e) 6.40-7.10 ug/ml f) 3.92-7.00 ug/ml g) 2.80-5.97 ug/ml h) 2.05-4.40 ug/ml i) 0.07-1.19 ug/ml	a) 0.08 + or - 0.05 ug/ml b) 7.75 + or - 1.12 ug/ml c) 7.86 + or - 0.65 ug/ml d) 7.24 + or - 0.14 ug/ml e) 6.82 + or - 0.15 ug/ml f) 5.70 + or - 0.69 ug/ml g) 4.52 + or - 0.69 ug/ml h) 3.16 + or - 0.56 ug/ml i) 0.65 + or - 0.63 ug/ml (S.E.)	a) At time of dose b) After 0.5 hr c) After 1 hr d) After 1.5 hr e) After 2 hr f) After 3 hr g) After 5 hr h) After 7.5 hr i) After 24 hr Following 300 mg dose. Volunteers, Canada CANADA; ADULTS; BLOOD PLASMA; DIURETICS; DRUGS; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS; METABOLITES	Swed, S. Hossie, R.D. McGilveray, I.J. 1976 Research Communications in Chemical Pathology and Pharmacology 13(2):185-192
4771 Blood, serum		HPLC	2	a) Not given b) Not given	a) 9.16 + or - 2.44 mg/l b) 1.34 + or - 1.71 mg/l	a) Caffeine b) Theophylline Steady state after caffeine: 15 mg/kg loading dose, 5 mg/kg/12 hr maintenance Data also given for theophylline doses. Premature 5-9 day olds, 30 wk gestational age, birth wt 1,131-1,644 g. NEWBORN; CAFFEINE; THEOPHYLLINES; BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS; DRUG THERAPY	Somani, S.M. Khanna, N.N. Bada, H.S. 1980 Journal of Pediatrics 96(6):1091-1093
4772 Cerebrospinal fluid	Injection		4	6.5-13.3 mg/l	8.58 mg/l	Range of means, after 7-18 days on maintenance dose of 2.5 mg/kg/day. Plasma and CSF caffeine correlated, r=0.92, P<0.001. Apneic premature infants, gestational ages 25-32 wk, postnatal ages 3-96 days. CAFFEINE; DRUGS; CANADA; BLOOD PLASMA; CEREBROSPINAL FLUID; INFANTS	Turmen, T. Louridas, T.A. Aranda, J.V. 1979 Journal of Pediatrics 95(4):644-646

(NEXT PAGE)

Caffeine (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3,7-trimethyl- (9 CI)
58-08-2
C8-H10-N4-O2
MW 194.19, MP 238 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4773 Cerebrospinal/ventricular fluid		HPLC	2	a) Not given b) Not given	a) 8.82 + or - 2.42 mg/l b) 1.00 + or - 1.54 mg/l	a) Caffeine b) Theophylline Steady state after caffeine: 15 mg/kg loading dose, 5 mg/kg/12 hr maintenance Data also given for theophylline doses. Premature 5-9 day olds, 30 wk gestational age, birth wt 1,131-1,644 g. NEWBORN; CAFFEINE; THEOPHYLLINES; BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS; DRUG THERAPY	Somani, S.M. Khanna, N.N. Bada, H.S. 1980 Journal of Pediatrics 96(6):1091-1093
4774 Urine		HPLC	a) 9 b) 11 c) 3 d) 2 e) 2	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 17.5 mg/l (0.86) b) 21.4 mg/l (0.62) c) 15.4 mg/l (0.58) d) 15.2 mg/l (0.23) e) 16.2 mg/l (0.02)	a) 0-1 mo b) 1-2 mo c) 2-3 mo d) 3-4 mo e) 7-9 mo Values in parentheses are molar fraction of clearance. Plasma levels maintained between 5-20 mg/l. Newborns, aged 8 days-9 mo, treated with caffeine for apnea or near-miss sudden infant death. DRUGS; DRUG THERAPY; NEWBORN; CAFFEINE; URINE; METABOLITES; METABOLISM; MEASUREMENT METHODS; AGE	Aldridge, A. Aranda, J.V. Neims, A.H. 1979 Clinical Pharmacology and Therapeutics 25(4):447-453

Calcium
7440-70-2
Ca
AtW 40.08, MP 850 C, BP 1440 C, VP 10 mm Hg at 983 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4775 Urine	Ingestion	AAS	10	a) Not given b) Not given	a) 0.26 + or - 0.11 g/day b) 0.26 + or - 0.08 g/day	a) Prenatal supplement with mean of 0.245 g/day, total intake of 1.37 g/day. Data from 24 7-day experimental periods b) Unsupplemented diet, total intake of 1.39 g/day. Data from 23 7-day experimental periods University students and employees, a nurse and a teacher. Nulliparous, ages 19-29 yr. Ca retention the same on both diets. TENNESSEE; URINE; IRON; CALCIUM; MAGNESIUM; MINERALS; PHOSPHORUS; DIETS; MINERAL METABOLISM; PREGNANCY	Ashe, J.R. Schofield, F.A. Gram, H.R. 1979 American Journal of Clinical Nutrition 32:286-291

Camphor (8 CI)
Bicyclo(2.2.1)heptan-2-one, 1,7,7-trimethyl- (9 CI)
76-22-2
C10-H16-O
MW 152.23, MP 179.75 C (corr., open capillary, 2 mm diam), BP 204 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4776 Blood, serum	Ingestion	GC	a) 1 b) 1	a) Not given b) Not given	a) 1.95 mg/100 ml b) 0.0015 mg/100 ml	a) 3 yr old 7 hr after 14.79 ml Vicks Vaporub (0.7 gm camphor) b) 2 yr old, 20 min after 14.79-29.85 ml Campho-Phenique (0.5-1.0 gm camphor) Michigan children hospitalized after ingesting toxic amounts of camphor-containing medications. Mild rhinorhea, cough, low-grade fever, confusion and irritability. Gastric upset and projectile vomiting followed by convulsions. MICHIGAN; CASE HISTORIES; CHILDREN; BLOOD SERUM; DRUGS	Phelan, W.J., III 1976 Pediatrics 57(3):428-431

Carbamic acid, (2-(4-(2-hydroxy-3-((1-methylethyl)amino)propoxy)phenyl)ethyl)-, methyl ester, (+-)-
59110-35-9
C16-H26-N2-O4
MW 278.44

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4777 Blood, plasma	Ingestion	GC-EC	a) 4 b) 2 c) 4	a) 142-251 ng/ml b) 310-350 ng/ml c) 676-850 ng/ml	a) 196.5 + or - 51.4 ng/ml b) 330 ng/ml c) 793.75 + or- 91.43 ng/ml	a) Peaks, 0.5-1.5 hr after 50 mg b) Peaks, 1.5 hr after 100 mg c) Peaks, 0.5-2.0 hr after 200 mg Healthy 18-29 yr olds DRUGS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS	Carruthers, S.G. Pentikainen, P. Rosler, J.P. Azarnoff, D.L. 1979 Clinical Pharmacology and Therapeutics 26(6):682-685

Cefotaxime (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4778 Blood, serum	Injection	Microbiological	a) 5 b) 5 c) 5	a) 37.9-1.0 ug/ml b) 102.4-1.9 ug/ml c) 214.1-3.3 ug/ml	a) 7.65 ug/ml b) 17.5 ug/ml c) 33.5 ug/ml	a) 500 mg dose b) 1000 mg dose c) 2000 mg dose 5 min-4 hr range of means and time-average means after 5 min IV. Peak at 5 min Data also for multiple IV and IM doses 22-33 yr olds, wt 75-84 kg. ANTIBIOTICS; BLOOD SERUM; ADULTS; URINE; COMPARATIVE EVALUATIONS; DRUGS	Neu, H.C. Aswapokee, P. Fu, K.P. Ho, I. Matthijssen, C. 1980 Clinical Pharmacology and Therapeutics 27(5):677-685
4779 Blood, serum	Injection	Microbiological	12	9.4-1.9 ug/ml	Not given	1 and 3 hr after 1 g Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

(NEXT PAGE)

Cefotaxime (No postings in CHEMLINE).

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4780 Milk	Injection	Microbiological	12	0.32-0.13 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.15 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
4781 Urine	Injection	Microbiological	a) 5 b) 5 c) 5	a) Not given b) Not given c) Not given	a) 59% of dose (295 mg) b) 52% of dose (520 mg) c) 49% of dose (980 mg)	a) 500 mg dose b) 1000 mg dose c) 2000 mg dose 24 hr excretions after 5 min IV 22-33 yr olds, wt 75-84 kg. ANTIBIOTICS; BLOOD SERUM; ADULTS; URINE; COMPARATIVE EVALUATIONS; DRUGS	Neu, H.C. Aswapokee, P. Fu, K.P. Ho, I. Matthijssen, C. 1980 Clinical Pharmacology and Therapeutics 27(5):677-685

Colchicine (8 CI)
Acetamide, N-(5,6,7,9-tetrahydro-1,2,3,10-tetramethoxy-9-oxobenzo(a)heptalen-7-yl)-, (S)- (9 CI)
64-86-8
C22-H25-N-O6
MW 399.43, MP 142-150 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4782 Blood, serum	Ingestion	RIA	a) 8 b) 2 c) 3 d) 1	a) 1-2.5 ng/ml b) 4-14 ng/ml c) 1.5-5.5 ng/ml d) 9-13 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 30-180 min after 1 mg dose b) 15-210 min after 2 mg dose, responders c) 45-210 min after 2 mg dose, nonresponders d) 15-210 min after 3 mg dose, nonresponder Data also for IV doses Patients with familial Mediterranean fever DRUGS; ISRAEL; BLOOD SERUM; MEASUREMENT METHODS; DISEASES; GENETIC EFFECTS; DRUG THERAPY	Halkin, H. Dany, S. Greenwald, M. Shnaps, Y. Tirosh, M. 1980 Clinical Pharmacology and Therapeutics 28(1):82-87

Cotinine (8 CI)
2-Pyrrolidinone, 1-methyl-5-(3-pyridinyl-,(S)- (9 CI)
486-56-6
C10-H12-N2-O
MW 176.21, 210-211 C at 6 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4783 Blood, plasma	Inhalation	RIA	4	a) 95-434 ng/ml b) 81-401 ng/ml	a) 238.5 + or - 141.8 ng/ml b) 219.0 + or - 133.8 ng/ml	a) 9 days on 22.5 + or - 6.3% cigarettes/day, 0.81 mg nicotine each b) 9 days on 27.25 + or - 10.5 cigarettes/day, 0.60 mg nicotine each 20-30 yr old smokers in good health, maintaining normal smoking habits SMOKING; NICOTINE; BLOOD PLASMA; TOBACCOS; COMPARATIVE EVALUATIONS; ADULTS; HEMOGLOBINS; URINE	Hill, P. Marquardt, H. 1980 Clinical Pharmacology and Therapeutics 27(5):652-658

(NEXT PAGE)

Cotinine (8 CI)
2-Pyrrolidinone, 1-methyl-5-(3-pyridinyl-,(S)- (9 CI)
486-56-6
C10-H12-N2-O
MW 176.21, 210-211 C at 6 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4784 Urine	Inhalation	RIA	4	a) 1.9-4.3 mg/24 hr b) 1.5-5.4 mg/24 hr	a) 3.0 + or - 1.0 mg/24 hr b) 3.18 + or - 1.64 mg/24 hr	a) 9 days on 22.5 + or - 6.34 cigarettes/day, 0.81 mg nicotine each b) 9 days on 27.25 + or - 10.5 cigarettes/day, 0.60 mg nicotine each 20-30 yr old smokers in good health, maintaining normal smoking habits SMOKING; NICOTINE; BLOOD PLASMA; TOBACCOS; COMPARATIVE EVALUATIONS; ADULTS; HEMOGLOBINS; URINE	Hill, P. Marquardt, H. 1980 Clinical Pharmacology and Therapeutics 27(5):652-658
4785 Urine	Inhalation	RIA	a) 21 b) 30	a) Not given b) 0-6 mg/day	a) 0 b) Not given	a) Non-smokers b) Smokers Hospital patients without renal or kidney disease SMOKING; NICOTINE; METABOLITES; JAPAN; URINE; MEASUREMENT METHODS; TOBACCOS	Matsukura, S. Sakamoto, M. Seino, Y. Tamada, T. Matsuyama, H. Muranaka, H. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):555-561
4786 Urine	Inhalation	GC	58	Not given	106 + or - 13 (SE) ug/100 ml	Random samples. In subgroup with constant daily cigarette consumption, number smoked correlates strongly with cotinine:creatinine ratio Regular smokers attending infarction clinic, U.K. ADULTS; HEART DISEASES; URINE; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; NICOTINE; METABOLITES; SMOKING	Wilcox, R.G. Hughes, J. Roland, J. 1979 British Medical Journal 2(6197):1026-1028

Coumarin, 3-(alpha-acetonylbenzyl)-4-hydroxy- (8 CI)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)- (9 CI)
81-81-2
C19-H16-O4
MW 308.32, MW 161 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4787 Blood, plasma	Injection Ingestion	HPLC	4	a) 8.7-0.28 ug/ml b) 5.8-0.17 ug/ml c) 0.76-1.99 ug/ml d) 0.56-1.89 ug/ml	a) Not applicable b) Not applicable c) 1.35 ug/ml d) 1.11 ug/ml	a) 0.25-100 hr after 40 mg IV. Biexponential decline b) 0.25-100 hr after 40 mg IV plus 2 X 1g/day clofibrate, oral, starting 3 wk preceding warfarin dose. Biexponential decline c) Steady state levels on 5-10 mg warfarin daily d) Steady state levels on 5-10 mg warfarin daily plus 2 X 1g/day clofibrate starting > 3 wks before warfarin treatment c) and d) different $p < 0.05$ Healthy 22-35 yr olds, no medications for 2 preceding wk. DRUGS; CALIFORNIA; BLOOD PLASMA; DRUG THERAPY; ADULTS; COMPARATIVE EVALUATIONS; METABOLITES; CHLORINE ORGANIC COMPOUNDS	Bjornsson, T.D. Meffin, P.J. Swezey, S. Blaschke, T.F. 1979 Journal of Pharmacology and Experimental Therapeutics 210(3):316-321

(NEXT PAGE)

Coumarin, 3-(alpha-acetonylbenzyl)-4-hydroxy- (8 CI)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)- (9 CI)
81-81-2
C19-H16-O4
MW 308.32, MW 161 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4788 Blood, plasma	Ingestion		10	a) 3.6-7.2 ug/ml b) 0.67-1.6 ug/ml c) 1.3-2.7 ug/ml	a) 5.1 ug/ml b) 0.96 ug/ml c) 2.1 ug/ml	a) as R(+) enantiomer dose b) Dose as S(-) enantiomer c) Dose as racemic mixture Levels at which the synthesis rate of prothrombin complex activity reached 50% of pre-dose rate. After 1.5 mg/kg. Healthy 21-51 yr olds. DRUGS; ANTICOAGULANTS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS	Wingard, L.B. O'Reilly, R.A. Levy, G. 1978 Clinical Pharmacology and Therapeutics 23(2):212-217
4789 Blood, plasma	Ingestion	Fluorometry	6	a) 4.8-2.5 ug/ml b) 5.7-2.7 ug/ml c) 4.6-2.2 ug/ml d) 5.7-2.8 ug/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) Warfarin, control group I b) Warfarin + 80 mg/day furosemide c) Warfarin, control group II d) Warfarin + 2 mg/day bumetanide 8 and 48 hr means after 50 mg during control period and on 5th day of diuretic administration. Normal 18-26 yr olds, University of Vermont. DRUGS; DRUG THERAPY; VERMONT; ADULTS; BLOOD PLASMA; DIURETICS; COMPARATIVE EVALUATIONS; ANTICOAGULANTS	Nilsson, C.M. Horton, E.S. Robinson, D.S. 1978 Journal of Clinical Pharmacology 18(2-3):91-98
4790 Blood, plasma	Ingestion		7	a) 93-276 ug/ml hr b) 127-354 ug/ml hr c) 34-128 ug/ml hr d) 39-117 ug/ml hr	a) 217 + or - 24 ug/ml hr b) 249 + or - 29 ug/ml hr c) 70 + or - 11 ug/ml hr d) 69 + or - 10 ug/ml hr	a) R-warfarin, 1.5 mg/kg b) R-warfarin, 1.5 mg/kg +0.25 g disulfiram/day c) S-warfarin, 0.75 mg/kg d) S-warfarin, 0.75 mg/kg +0.25 gm disulfiram/day Disulfiram given 3 days before warfarin and during hypoprothrombinemia Area under the concentration-time curve data Healthy 21-30 yr olds Disulfiram augmented S-warfarin hypoprothrombinemia, but not that of R-warfarin ADULTS; BLOOD PLASMA; ANTICOAGULANTS; DRUG INTERACTION; COMPARATIVE EVALUATIONS	O'Reilly, R.A. 1981 Clinical Pharmacology and Therapeutics 29(3):332-226
4791 Blood, serum	Ingestion		5	a) 1.83-2.97 ug/ml b) 1.92-3.03 ug/ml c) 2.34-3.52 ug/ml	a) 2.61 + or - 0.35 ug/ml b) 2.48 + or - 0.45 ug/ml c) 2.80 + or - 0.47 ug/ml	a) Before naproxen, mean of days 7-11 b) During naproxen, mean of days 17-21 c) After naproxen, mean of days 24-26 Steady-state levels (free + protein-bound) prior to daily dose of 10 mg racemic warfarin. No significant effect of naproxen. Healthy 25-65 yr olds, wt 74.1-88.5 kg. DRUGS; ANTICOAGULANTS; ANTI-INFLAMMATORY AGENTS; BLOOD SERUM; ADULTS; COMPARATIVE EVALUATIONS	Jain, A. McMahon, F.G. Slattery, J.T. Levy, G. 1979 Clinical Pharmacology and Therapeutics 25(1):61-66

Coumarin, 3-(alpha-acetonylbenzyl)-4-hydroxy-, sodium salt (8 CI)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, sodium salt (9 CI)
129-06-6
C19-H16-O4.Na
MW 331.34

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4792 Blood, plasma	Ingestion	HPLC	9	a) 0.25-0.58 mg/l b) 0.26-0.67 mg/l	a) 0.40 mg/l b) 0.45 mg/l	a) Smokers, after 0.032 mg/kg, AM dose, 2 wk b) Subjects and dose as in a), after 1 mo abstention from smoking Steady state levels. Means significantly different. Healthy 19-60 yr olds, smoked at least 1 pack of cigarettes/day. Anticoagulant effects (lengthened prothrombin times). DRUGS; SMOKING; TOBACCOS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ANTICOAGULANTS; METABOLISM; ENZYMES; THIOCYANATES; ADULTS	Bachmann, K. Shapiro, R. Fulton, R. Carroll, F.T. Sullivan, T.J. 1979 Clinical Pharmacology and Therapeutics 25(3):309-315
4793 Blood, plasma	Ingestion	Colorimetry	10	a) 15-2 ug/ml b) 15-0.3 ug/ml c) 14-0.9 ug/ml	a) Not applicable b) Not applicable c) Not applicable	a) 0 and 168 hr after 1.5 mg/kg of S(-) enantiomorph b) 0 and 168 hr after 1.5 mg/kg of R(+) enantiomorph c) 0 and 168 hr after 1.5 mg/kg of R,S(+,-) racemate Normal 21-51 yr olds Prothrombin time was highest 48-72 hr following administration. S(-) form showed greatest effect in increasing prothrombin time and in decreasing prothrombin activity. ADULTS; BLOOD PLASMA; DRUGS	O'Reilly, R.A. 1974 Clinical Pharmacology and Therapeutics 16(2):348-354
4794 Blood, plasma	Ingestion	Colorimetry	1	8-0.9 ug/ml	Not given	24 and 144 hr after 1.5 mg/kg. Estimated from graph. Spironolactone, 200 mg/day, 7 days, had no significant effect on area-under-the-curve of warfarin. Data also for other subjects. Healthy subject, no other drug for 2 mo. Increased prothrombin times. Effect diminished by spironolactone-induced diuresis. DRUGS; DRUG INTERACTION; ANTICOAGULANTS; BLOOD PLASMA; DIURETICS; ADULTS; COMPARATIVE EVALUATIONS	O'Reilly, R.A. 1980 Clinical Pharmacology and Therapeutics 27(2):198-201

(NEXT PAGE)

Coumarin, 3-(alpha-acetonylbenzyl)-4-hydroxy-, sodium salt (8 CI)
2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, sodium salt (9 CI)
129-06-6
C19-H16-O4.Na
MW 331.34

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4795 Blood, plasma	Ingestion		8	a) 3.4-5.24 ug/ml b) 1.03-1.81 ug/ml c) 1.62-2.56 ug/ml d) 0.88-1.22 ug/ml e) 0.79-1.25 ug/ml	a) 4.67 ug/ml b) 1.275 ug/ml c) 2.158 ug/ml d) 1.108 ug/ml e) 0.978 ug/ml	a) R enantiomer, 4 patients, 8-17 mg/day b) S enantiomer, 4 patients, 4.5-10 mg/day c) Racemic warfarin, 4 patients, 5.5-12 mg/day d) R enantiomer, 4 volunteers, 5 mg/day e) S enantiomer, 4 volunteers, 5 mg/day Steady state levels 7 normal volunteers and 4 patients completing anticoagulant therapy for deep vein thrombosis. No other medications. Ages 28-70 yr. Doses for good anticoagulant control greater for R warfarin than for S warfarin ($P < 0.005$). DRUGS; ANTICOAGULANTS; BLOOD PLASMA; DISEASES; HEART DISEASES; COMPARATIVE EVALUATIONS; ADULTS	Breckenridge, A. Orme, M. Wesseling, H. Lewis, R.J. Gibbons, R. 1974 Clinical Pharmacology and Therapeutics 15(4):424-430

Cyclohexaneethylamine, N,alpha-dimethyl- (8 CI)
Cyclohexaneethanamine, N,alpha-dimethyl- (9 CI)
101-40-6
C10-H21-N
MW 155.28, BP 205 C at 760 mm Hg, 92-93 C at 20 mm Hg (dl form)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4796 Bile	Injection	GC	a) 1 b) 1	a) Not applicable b) Not applicable	a) 0.94 mg/dl b) 0.57 mg/dl	a) Overdose death b) Death by hanging 19-23 yr old blacks, histories of drug abuse. Hyperactivity Foreign-body granulomata and refractile crystalline material in the lungs. Massive desquamation of alveolar lining cells, focal intra-alveolar hemorrhage, and acute passive congestion. Increased number of mononuclear cells in portal areas of liver. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158

(NEXT PAGE)

Cycloheraneethylamine, N,alpha-dimethyl- (8 CI)
Cycloheraneethanamine, N,alpha-dimethyl- (9 CI)
101-40-6
C10-H21-N
MW 155.28, BP 205 C at 760 mm Hg, 92-93 C at 20 mm Hg (dl form)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4797 Blood	Injection	GC	a) 3 b) 2	a) 0.03-0.20 mg/dl b) 0.08-0.25 mg/dl	a) 0.13 mg/dl b) 0.16 mg/dl	a) Overdose deaths b) Deaths by other causes 17-27 yr old blacks, histories of drug abuse. Hyperactivity, unconsciousness, death. Ventricular hypertrophy, pulmonary parenchyma congested, consistency of rubber. Severe medical hypertrophy and intima hyperplasia of the small muscular arteries of the lungs. Alveolar septa thickened, secondary to diffuse fibrosis and acute passive congestion. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158
4798 Kidney	Injection	GC	a) 3 b) 1	a) 0.18-0.53 mg/100 g b) Not applicable	a) 0.37 mg/100 g b) 0.21 mg/100 g	a) Overdose deaths b) Death by hanging 17-27 yr old blacks, histories of drug abuse. Hyperactivity, unconsciousness, death Ventricular hypertrophy. Pulmonary parenchyma congested, consistency of rubber. Severe medical hypertrophy and intima hyperplasia of the small muscular arteries of the lungs. Alveolar septa thickened, secondary to diffuse fibrosis and acute passive congestion. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158
4799 Liver	Injection	GC	a) 3 b) 1	a) 0.13-0.74 mg/100 g b) Not applicable	a) 0.48 mg/100 g b) 0.44 mg/100 g	a) Overdose deaths b) Death by hanging 17-27 yr old blacks, histories of drug abuse. Hyperactivity, unconsciousness, death Ventricular hypertrophy. Pulmonary parenchyma congested, consistency of rubber. Severe medical hypertrophy and intima hyperplasia of the small muscular arteries of the lungs. Alveolar septa thickened, secondary to diffuse fibrosis and acute passive congestion. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158

(NEXT PAGE)

Cyclohexaneethylamine, N,alpha-dimethyl- (8 CI)
Cyclohexaneethanamine, N,alpha-dimethyl- (9 CI)
101-40-6
C10-H21-N
MW 155.28, BP 205 C at 760 mm Hg, 92-93 C at 20 mm Hg (dl form)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4800 Urine	Injection	GC	1	Not applicable	6.95 mg/dl	Overdose death 19 yr old black, history of drug abuse. Massive desquamation of alveolar lining cells, focal intra-alveolar hemorrhage, and acute passive congestion. Increased number of mononuclear cells in portal areas of liver. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158
4801 Vitreous humor	Injection	GC	a) 3 b) 1	a) 0.05-0.22 mg/dl b) Not applicable	a) 0.12 mg/dl b) 0.05 mg/dl	a) Overdose deaths b) Death by hanging 17-27 yr old blacks, histories of drug abuse. Hyperactivity, unconsciousness, death Ventricular hypertrophy, pulmonary parenchyma congested, consistency of rubber. Severe medical hypertrophy and intima hyperplasia of the small muscular arteries of the lungs. Alveolar septa thickened, secondary to diffuse fibrosis and acute passive congestion. DRUGS; BILE; BLOOD; KIDNEYS; LIVER; URINE; VITREOUS HUMOR; DRUG ABUSE; CASE HISTORIES; COMPARATIVE EVALUATIONS; TEXAS	DiMaio, V.J.M. Garriott, J.C. 1977 Journal of Forensic Sciences 22(1):152-158

Cyclotetrasiloxane, 2,2,4,6,6,8-hexamethyl-4,8-diphenyl-, cis-
33204-76-1
C18-H28-O4-Si4
MW 420.82

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4802 Blood, serum	Ingestion	MS	7	1.1-5.0 mg/l	3.5 mg/l	Peaks, 4-8 hr after 102 mg, single dose. Biexponential decline. Men with prostatic carcinoma and metastases (bone, liver). General improvement, relief of pain on 100 mg 3X/day. No side effects. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; SEX; ADULTS; SWEDEN; BLOOD SERUM	Pilbrant, A. Strindberg, B. 1975 Acta Pharmacologica et Toxicologica 36(Suppl III):139-147

D-Streptamine, O-3-amino-3-deoxy-alpha-D-glucopyranosyl-(1-6)-O-(6-amino-6-deoxy-alpha-D-glucopyranosyl-(1-4))-N(1)-(4-amino-2-hydroxy-1-oxobutyl)-2-deoxy-, (S)-
37517-28-5
C22-H43-N5-O13
MW 585.62, MP 203-204 C (sesquihydrate)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4803 Blood, serum	Injection	Radiometry Enzymatic	1	a) Not applicable b) Not applicable	a) 24.5 ug/ml b) 18.3 ug/ml	a) Peak, 1 hr after 30 min IV of 5 mg/kg b) Peak, 1 hr after 60 min IV of 5 mg/kg Total of 15 mg/kg/24 hr divided in 3 doses. 53 yr old leukemia patient with normal renal function. DRUGS; DRUG THERAPY; ANTIBIOTICS; CHILDREN; TEXAS; NEOPLASMS; BLOOD SERUM	Kramer, W.G. Cleary, T. Frankel, L.S. Kohl, S. Pickering, L.F. 1979 Clinical Pharmacology and Therapeutics 26(5):635-640

D-Streptamine, O-3-amino-3-deoxy-alpha-D-glucopyranosyl-(1-6)-O-(6-amino-6-deoxy-alpha-D-glucopyranosyl-(1-4))-2-deoxy-
59-01-8
C18-H36-N4-O11
MW 484.58

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4804 Blood, serum	Injection	Microbiological	16	15.1-20.4 ug/ml b) 0.7-2.6 ug/ml c) 15.0-22.4 ug/ml d) 0.9-1.8 ug/ml	a) 17.1 ug/ml b) 1.4 ug/ml c) 17.4 ug/ml d) 1.4 ug/ml	a) IM, peaks. Peak time 1 hr b) IM, troughs at 8 hr c) 20 min IV, peaks. Peak time 30 min d) 20 min IV, troughs, at 8 hr 10 mg/kg/8 hr for 24 hr. 1-15 yr olds, Texas ANTIBIOTICS; BLOOD SERUM; CHILDREN; TEXAS; COMPARATIVE EVALUATIONS; HEARING; INFECTION; SURGERY	Hieber, J.P. Fussiesz, H. Nelson, J.D. 1980 Journal of Pediatrics 96(6):1089-1091

Dibenz(b,e)oxepin-delta(11(6H),gamma)-propylamine, N,N-dimethyl-, hydrochloride (8 CI)
1-Propanamine, 3-dibenz(b,e)oxepin-11(6H)-ylidene-N,N-dimethyl-, hydrochloride (9 CI)
1229-29-4
C19-H21-N-O.Cl-H
MW 315.83, MP 184-186 C, 188-189 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4805 Blood, plasma	Ingestion	GC/MF	1	Not applicable	2123 ng/ml	Peak. Data for mixed doxepin-HCl and amitriptyline-HCl overdose also available. Overdose patient, age 23 yr. QRS of 100 msec or greater on routine ECG, and one or more of the following abnormal deep tendon reflexes, ventricular rate of 120 beats/min or greater, right bundle branch block, atrial and ventricular premature contractions, junctional and idioventricular arrhythmias, unconsciousness, respiratory support necessary, grand mal seizures, and death. DRUGS; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; DRUG ABUSE; MISSOURI	Briggs, J.T. Spiker, D.G. Petit, J.M. Ziegler, V.E. 1977 Journal of the American Medical Association 238(2):135-138

Digitoxin (8 CI)
Card-20(22)-enolide, 3-((O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy)-14-hydroxy-, (3beta,5beta)- (9 CI)
71-63-6
C41-H64-O13
MW 764.92, MP 256-257 C (anhydrous)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4806 Blood, plasma	Ingestion	RIA	21	9.5-154 nmol/l	Not applicable	After maintenance dose or massive overdose Cardiac patients and subjects with digitoxin poisoning. FRANCE; ADULTS; CARDIOVASCULAR DISEASES; BLOOD; BLOOD PLASMA; DRUG THERAPY; COMPARATIVE EVALUATIONS; IN VITRO ANALYSIS	Scherrmann, J.M. Bourdon, R. 1980 Clinical Chemistry 26:670-671

Digoxin (8 CI)
Card-20(22)-enolide, 3-((O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy)-12,14-dihydroxy-, (3beta,5beta,12beta)- (9 CI)
20830-75-5
C41-H64-O14
MW 780.92, MP about 265 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4807 Amniotic fluid	Injection	RIA	5	Not detectable - 1.5 ng/ml	Not applicable	At delivery, after 0.2 mg IV. Italians given digitalis during pregnancy. DRUGS; ITALY; PREGNANCY; BLOOD SERUM; AMNIOTIC FLUID; UMBILICAL CORD; HEART DISEASES; DRUG THERAPY	Padeletti, L. Porciani, M.C. Scimone, G. 1979 International Journal of Clinical Pharmacology and Biopharmacy 17(2):82-83
4808 Bile	Injection	CC Radiometry	a) 1 b) 1	a) Not applicable b) Not applicable	a) 1.1% of dose b) 10.7% of dose	a) % of injected radioactivity in 5th ml after 38 hr. Dose, 150 uCi 3H-digoxin-12alpha. >90% was digoxin. b) % of injected radioactivity in 220 ml after 30 hr. Dose, 190 uCi 3H-digoxin-12alpha. >90% was digoxin. Patients with acute renal failure, on maintenance doses. DRUGS; DRUG THERAPY; METABOLITES; URINE; BILE; CANADA; COMPARATIVE EVALUATIONS; DISEASES; METABOLISM	Gault, M.H. Sugden, D. Maloney, C. Ahmed, M. Tweeddale, M. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):499-513
4809 Blood, fetal	Injection	RIA	a) 8 b) 12	a) 0.85 - 3.90 ng/ml b) 0.20-1.10 ng/ml	a) 1.55 + or - 0.35 (SE) ng/ml b) 0.55 + or - 0.08 (SE) ng/ml	a) < 1 hr after dose. Values lower than maternal serum, P < 0.001 b) 75-600 min after dose Cord blood at delivery, after 0.2 mg IV to mothers. Italians given digitalis during pregnancy. DRUGS; ITALY; PREGNANCY; BLOOD SERUM; AMNIOTIC FLUID; UMBILICAL CORD; HEART DISEASES; DRUG THERAPY	Padeletti, L. Porciani, M.C. Scimone, G. 1979 International Journal of Clinical Pharmacology and Biopharmacy 17(2):82-83

(NEXT PAGE)

Digoxin (8 CI)
Card-20(22)-enolide, 3-[(O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy]-12,14-dihydroxy-, (3beta,5beta,12beta)- (9 CI)
20830-75-5
C41-H64-O14
MW 780.92, MP about 265 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4810 Blood, plasma	Injection Ingestion	RIA	13	a) 3.3-7.5 nmoles/l b) 6.3-13.9 nmoles/l c) 0.7-5.1 nmoles/l d) 7.2-18.8 nmoles/l	a) 4.4 nmoles/l b) 10.5 nmoles/l c) 2.6 nmoles/l d) 11.9 nmoles/l	a) Peaks, 45-75 min after 50 mg (oral), younger patients b) Peaks, 15 min after 50 mg IV, younger patients c) Peaks, 1-4 hr after 25 mg (oral), elderly patents d) Peaks, 15 min after 25 mg IV, elderly patients 6 females, ages 34-61 yr, and a group of 5 females and 2 males, ages 72-91 yr. All with cardiomegaly and on other medications. DRUGS; AGE; METABOLISM; BLOOD PLASMA; IRELAND; COMPARATIVE EVALUATIONS; HEART DISEASES	Cusack, B. Kelly, J. O'Malley, K. Noel, J. Lavan, J. Horgan, J. 1979 Clinical Pharmacology and Therapeutics 25(6):772-776
4811 Blood, plasma	Ingestion	RIA Immunoassay	a) 21 b) 11	a) 0.38-1.20 nmol/l b) 5.24-22.66 nmol/l	a) Not applicable b) Not applicable	a) Values by RIA. Percent of cross-reactivity to digitoxin 0.83-4.29. Mean cross-reactivity 2.32% b) Values by enzyme-linked immunoassay (ELISA). Percent of cross-reactivity to digitoxin 12.86-88.13. Mean cross-reactivity 40.05% Cardiac patients FRANCE; ADULTS; CARDIOVASCULAR DISEASES; BLOOD; BLOOD PLASMA; DRUG THERAPY; COMPARATIVE EVALUATIONS; IN VITRO ANALYSIS	Scherrmann, J.M. Bourdon, R. 1980 Clinical Chemistry 26:670-671
4812 Blood, plasma	Injection	RIA	6	a) 34-0.3 ng/ml b) 16-0.42 ng/ml	a) Not given b) Not given	a) Initial measurement and 76 hr after 15 ug/kg IV bolus b) Initial measurement and 80 hr after 10 ug/kg IV bolus and after 8 days on 200 mg quinidine, 2x/day Estimated from graph Healthy 21-28 yr olds. Positive inotropic effect of digoxin, diminished by quinidine. DRUGS; DENMARK; BLOOD PLASMA; ADULTS; BLOOD PRESSURE; DRUG INTERACTION	Steiness, E. Waldorff, S. Hansen, P.B. Kjaergard, H. Buch, J. Egeblad, H. 1980 Clinical Pharmacology and Therapeutics 27(6):791-795
4813 Blood, serum	Injection	RIA	5	3.19-10.67 ng/ml	8.24 ng/ml	Calculated 0 hr (Peak) values adjusted to bolus IV dose after 5 min IV of 4.8-4.9 ug/kg. Biexponential decline. 26-76 yr old patients, severe renal impairment, congestive heart failure. DRUGS; DRUG THERAPY; BLOOD SERUM; ADULTS; DISEASES	Koup, J.R. Jusko, W.J. Elwood, C.M. Kohli, R.K. 1975 Clinical Pharmacology and Therapeutics 18(1):9-21

(NEXT PAGE)

digoxin (8 CI)
Card-20(22)-enolide, 3-[(O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy]-12,14-dihydroxy-, (3beta,5beta,12beta)- (9 CI)
20830-75-5
C41-H64-O14
MW 780.92, MP about 265 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4814 Blood, serum	Ingestion	RIA	11	a) 0.4-1.4 ng/ml b) 0.4-1.1 ng/ml c) 0.4-1.3 ng/ml	a) 0.736 + or - 0.34 ng/ml b) 0.736 + or - 0.19 ng/ml c) 0.74 + or - 0.29 ng/ml	a) Before bran supplement b) After 9 days on bran supplement c) 10 days after bran discontinuation 22 g bran/day in 2 servings. No significant effect on digoxin. Ambulatory residents of rehabilitation center taking digoxin > 1 month. Ages 79-81 yr, weights 49-80 kg. DRUGS; DIETS; BLOOD SERUM; ADULTS; COMPARATIVE EVALUATIONS; MASSACHUSETTS; HEART DISEASES	Woods, M.N. Ingelfinger, J.A. 1979 Clinical Pharmacology and Therapeutics 26(1):21-23
4815 Blood, serum		RIA	a) 19 b) 55 c) 8	a) 0.0-0.7 ng/ml b) 0.8-2.3 ng/ml c) 2.4-4.9 ng/ml	a) Not given b) Not given c) Not given	a) Below therapeutic range b) Within therapeutic range c) Above therapeutic range 22-94 yr olds on digoxin or digitoxin. DRUGS; DRUG THERAPY; KANSAS; BLOOD SERUM; HEART DISEASES	Hladik, W.B., III Dujovne, C.A. 1979 European Journal of Clinical Pharmacology 15:411-415
4816 Blood, serum	Ingestion		1	a) Not applicable b) Not applicable c) Not applicable	a) 11.6 ng/ml b) 6.0 ng/ml c) 1.4 ng/ml	a) After overdose b) After charcoal hemoperfusion c) 3 days later 82 yr old Dizziness, vomiting, atrial fibrillation DRUGS; BLOOD SERUM; HEMODIALYSIS	Rowett, D.A. 1980 Journal of the American Medical Association 244(14):1558
4817 Blood, serum	Injection	RIA	a) 8 b) 12	a) 1.10-4.30 ng/ml b) 0.20-0.95 ng/ml	a) 1.87 + or - 0.36 (SE) ng/ml b) 0.54 + or - 0.07 (SE) ng/ml	a) Within 1 hr of dose b) 75-600 min after dose At delivery, after 0.2 mg, IV. Italians given digitalis during pregnancy. DRUGS; ITALY; PREGNANCY; BLOOD SERUM; AMNIOTIC FLUID; UMBILICAL CORD; HEART DISEASES; DRUG THERAPY	Padeletti, L. Porciani, M.C. Scimone, G. 1979 International Journal of Clinical Pharmacology and Biopharmacy 17(2):82-83
4818 Urine	Ingestion	CC Radiometry	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 57.86% of dose b) 15.44% of dose c) 54.50% of dose d) 14.70% of dose e) 3.36% of dose f) 0.74% of dose	a) Total radioactivity, 6 controls b) Total radioactivity, 6 patients c) Digoxin, 6 controls d) Digoxin, 6 patients e) Total metabolites, 6 controls f) Total metabolites, 6 patients 5 day cumulative excretion after 150 uCi (6 ug) 3H-digoxin-12 alpha during fasted state. 6 healthy 24-51 yr olds. 6 38-70 yr old patients with minimal renal function, on hemodialysis 3x/wk. DRUGS; DRUG THERAPY; METABOLITES; URINE; BILE; CANADA; COMPARATIVE EVALUATIONS; DISEASES; METABOLISM	Gault, M.H. Sugden, D. Maloney, C. Ahmed, M. Tweeddale, M. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):499-513

Epipodophyllotoxin, 4'-demethyl-, 9-(4,6-O-2-thenylidene-beta-D-glucopyranoside) (8 CI)
Furo(3',4':6,7)naphtho(2,3-d)-1,3-diorol-6(5aH)-one, 5,8,8a,9-tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-9-((4,6-O-2-thienylmethylene)-beta-D-glucopyranosyl)oxy-, (5R-(5alpha,5abeta,8aalpha,9beta(R*)))- (9 CI)
29767-20-2
C32-H32-O13-S
MW 656.70

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4819 Blood, plasma	Injection	Radiometry	6	20.96-39.14 ug/ml	26.39 ug/ml	Peaks, 0 hr after 30 min IV of 67 mg/sq m, tritium-labelled drug. Trierponential decline Patients with advanced cancer Leukopenia. Antineoplastic response in 2 patients DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; LEUKEMIA; BLOOD PLASMA; URINE; CEREBROSPINAL FLUID; FECES; ADULTS; DISEASES	Creaven, P.J. Allen, L.M. 1975b Clinical Pharmacology and Therapeutics 18(2):227-233
4820 Urine	Injection	Radiometry	5	Not given	44.49 + or - 8.2% of dose	Cumulative 72 hr excretion after 30 min IV of 67 mg/sq m tritium labelled drug. 78.7% of urinary radioactivity as metabolite Patients with advanced cancer Leukopenia Antineoplastic response in 2 patients. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; LEUKEMIA; BLOOD PLASMA; URINE; CEREBROSPINAL FLUID; FECES; ADULTS; DISEASES	Creaven, P.J. Allen, L.M. 1975b Clinical Pharmacology and Therapeutics 18(2):227-233

Estradiol (8 CI)
Estra-1,3,5(10)-triene-3,17-diol, (17beta)- (9 CI)
50-28-2
C18-H24-O2
MW 272.42, MP 173-179 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4821 Blood, plasma	Vaginal	RIA	a) 3 b) 3	a) 30-3000 pg/ml b) 45-2500 pg/ml	a) Not applicable b) Not applicable	a) Initial measurement and 3 hr after 50 mg suppository. 23 hr values ranged from 50 100 pg/ml b) Initial measurement and 3 hr after 100 mg suppository. 23 hr values ranged from 85 400 pg/ml. Estimated from graph. Healthy lactating volunteers. STEROIDS; HORMONES; MILK; LACTATION; MEASUREMENT METHODS; HEALTH HAZARDS	Nilsson, S. Nygren K-G. Johansson, E.D.B. 1978 American Journal of Obstetrics and Gynecology 132(6):653-657
4822 Milk	Vaginal	RIA	a) 3 b) 3	a) 27-1000 pg/ml b) 40-250 pg/ml	a) Not applicable b) Not applicable	a) 50 mg suppository. Peaks at 3-11 hr b) 100 mg suppository. Peaks at 3-6 hr Range of observed values up to 23 hr after dose. Healthy lactating volunteers. STEROIDS; HORMONES; MILK; LACTATION; MEASUREMENT METHODS; HEALTH HAZARDS	Nilsson, S. Nygren K-G. Johansson, E.D.B. 1978 American Journal of Obstetrics and Gynecology 132(6):653-657

Ethane, 2-bromo-2-chloro-1,1,1-trifluoro-
151-67-7
C2-H-Br-Cl-F3
MW 197.39, BP 50.2 C, 20 C at 240 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4823 Blood	Inhalation	GC-EC	a) 10 b) 10	a) 12.55-33.40 ug/ml b) 16.55-36.95 ug/ml	a) Not given b) Not given	a) Anesthetized with 4 l/min nitrous oxide, 2 l/min oxygen and 0.4% halothane vapor b) Anesthetized with 2 l/min nitrous oxide, 4 l/min oxygen, and 0.4% halothane vapor Range of means Healthy caesarean section patients SCOTLAND; ADULTS; BLOOD; ANESTHETICS; IN VIVO ANALYSIS	Tunstall, M.E. Hawksworth, G.M. 1981 Anaesthesia 36:177-182
4824 Breath	Inhalation	GC/MS	16	a) 0.01-0.15 ppm b) 0.05-0.56 ppm c) 0.02-0.42 ppm d) 0.07-0.55 ppm e) 0.2-0.5 ppm f) 4.0-5.0 ppm	a) 0.06 + or - 0.02 (SE) ppm b) 0.25 +or - 0.09 (SE) ppm c) 0.14 + or - 0.05 (SE) ppm d) 0.35 + or - 0.15 (SE) ppm e) 0.4 ppm f) 4.5 ppm	a) Metabolite, CF2CHCl. Anesthesia administered in non-rebreathing (Bain) circuit b) Metabolite, CF3CH2Cl. Anesthesia administered as above c) Metabolite, CF2CHCl. Anesthesia administered in semi-closed soda-lime absorption circuit d) Metabolite, CF3CH2Cl. Anesthesia administered as above e) Metabolite-decomposition product, CF2CBrCl. Anesthesia administered in semi-closed, soda-lime absorption circuit f) Metabolite-decomposition product, CF2CBrCl. Anesthesia administered in closed circuit a)-d) Sampled <5 min after end of 1-3 hr, 0.5-1.5% halothane. e),f) Sampled within 60 min of induction of 0.5-1.0% halothane 1-71 yr olds ADULTS; CHILDREN; INFANTS; ANESTHETICS; COMPARATIVE EVALUATIONS	Sharp, J.H. Trudell, J.R. Cohen, E.N. 1979 Anesthesiology 50:2-9

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
MW 46.07, MP -117.3 C, BP 78.32 C, VP 80 mm Hg at 19 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4825 Blood	Ingestion	Breath analyzer	10	a) Not given b) Not given	a) 1.0 g/l b) 0.95 g/l	a) 1 hr after 1 g/kg ethanol in orange juice + 1 glucose capsule b) 1 hr after 200 mg cannabidiol + 1 g/kg ethanol in orange juice Estimated from graph. Healthy 21-33 yr olds, wt 52-85 kg. Drowsiness, dizziness, relaxation, feelings of dreaming, abnormal hearing. BRAZIL; ADULTS; BLOOD; DRUG INTERACTIONS; DRUGS; ALCOHOLS	Consroe, P. Carlini, E.A. Zwicker, A.P. Lacerda, L.A. 1979 Psychopharmacology 66:45-50

(NEXT PAGE)

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
FW 46.07, MP -117.3 C, BP 78.32 C, VP 40 mm Hg at 19 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4826 Blood	Ingestion		64	20-430 mg/100 ml	171.1 mg/ml	Alcohol and propoxyphene found. Coroners' cases from 3 California counties. LIVER; DRUGS; BLOOD; ALCOHOLS; CASE HISTORIES; SUICIDE; DRUG ABUSE	Cravey, R.H. Shaw, R.F. Nakamura, G.R. 1974 Journal of Forensic Sciences 19(1):72-80
4827 Blood	Ingestion	GC	5	a) Not given b) Not given c) Not given d) Not given	a) 0.44 + or - 0.05 mg/ml b) 0.30 + or - 0.02 mg/ml c) 0.88 + or - 0.08 mg/ml d) 0.67 + or - 0.08 mg/ml (S.E.)	Mean peak, 0.4 hr after 0.25 g/kg ethanol, pretreatment with 0.7 mg/kg Ca carbimide b) Mean peak, 0.75 hr after 0.25 g/kg ethanol, pretreatment with placebo c) Mean peak, 0.5 hr after 0.5 g/kg ethanol, pretreatment with 0.7 mg/kg Ca carbimide d) Mean peak, 0.5 hr after 0.5 g/kg ethanol, pretreatment with placebo Peak times estimated from graph. Alcoholics, ages 23-44 yr, drug-free, normal cardiovascular, hepatic, and renal function. Ethanol-Ca carbimide interaction caused increased blood acetaldehyde, tachycardia, decreased diastolic blood pressure, and decreased ethanol metabolism (at 0.5 g/kg ethanol dose). DRUGS; DRUG INTERACTION; ADULTS; ALCOHOLIC BEVERAGES; BLOOD; METABOLISM; METABOLITES; BLOOD PRESSURE	Erien, J.F. Peachey, J.E. Loomis, C.W. Fogers, E.J. 1979 Clinical Pharmacology and Therapeutics 25(4):454-463
4828 Blood	Ingestion	Breath analyzer	11	a) 0.38-0.06 mg/ml b) 0.3-0.63 mg/ml c) 0.42-0.88 mg/ml	a) Not given b) Not given c) Not given	a) 60 and 180 min after 0.41 g/kg. Initial measurement, 0.2 mg/ml at 20 min b) 20 and 60 min after 0.63 g/kg. Final measurement, 0.38 mg/ml at 180 min c) 20 and 60 min after 0.85 g/kg. Final measurement, 0.68 mg/ml at 180 min Estimated from graph Dose administered as vodka, tonic, lime, and sugar. Healthy, psychology students in Sweden, ages 20-32 yr, wt 60-70 kg. Mean consumption of pure alcohol, 45 cl/mo. More feelings of euphoria, lessening of tension at highest dose. More negative feelings at lower doses. Frequent consumers derived greater affective benefits than rare drinkers. SWEDEN; BLOOD; PSYCHOTROPIC DRUGS; EXPERIMENTAL PSYCHOLOGY; ALCOHOLS	Persson, L. Sjoberg, L. Svensson, E. 1980 Psychopharmacology 68:295-299

(NEXT PAGE)

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
MW 46.07, MP -117.3 C, BP 78.32 C, VP 40 mm Hg at 19 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4829 Blood	Ingestion		1	a) Not applicable b) Not applicable	a) 4.98 g/l b) 0	a) Before dialysis b) 16 hr after dialysis Alcohol-intoxicated 6 yr old, wt 20.2 kg. Comatose at 3 hr, hypothermia, weak pulse and undetectable blood pressure, respiratory arrest. ALCOHOLS; AUSTRIA; CHILDREN; CASE HISTORIES; LAVAGE	Grubbauer, H.M. Schwarz, E. 1980 Archives of Toxicology 43:317-320
4830 Blood	Ingestion		1	Not given	840 ug/ml	Autopsy sample 44 yr old pharmacist, suicide, overdose of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4831 Blood	Ingestion		a) 7 b) 4	a) 0.622-1.098 mg/ml b) 0.672-0.889 mg/ml	a) 0.833 + or - 0.162 mg/ml b) 0.793 + or - 0.108 mg/ml	a) Dose, 0.5 g/kg, 12 hr after 0.7 mg/kg Ca carbimide. Peak time, 0.58 + or - 0.14 hr b) Dose, 0.5 g/kg, 4 hr after 0.7 mg/kg Ca carbimide. Peak time 0.47 + or - 0.07 hr Alcoholics, mean age 32 + or - 12.37 yr, mean body wt 68.74 + or - 22.43 kg, Canada. CANADA; DISEASES; BLOOD; DRUG INTERACTION; DRUG THERAPY; COMPARATIVE EVALUATIONS; ALCOHOLIC BEVERAGES; METABOLISM; METABOLITES	Peachey, J.E. Naglana, S. Robinson, G.M. Hemy, M. Brien, J.F. 1981 Clinical Pharmacology and Therapeutics 29(1):40-46
4832 Blood	Ingestion	GC	a) 64 b) 47 c) 18	a) 120-540 mg/dl b) 120-540 mg/dl c) 140-360 mg/dl	a) 268 + or - 10 mg/dl b) 272 + or - 13 mg/dl c) 260 + or - 13 mg/dl	a) Total sample b) Men c) Women Clinically sober patients admitted at a hospital emergency room ADULTS; SEX; BLOOD; DRUG ABUSE; ALCOHOLS	Urso, T. Gavaler, J.S. Van Thiel, D.H. 1981 Life Sciences 28:1053-1056
4833 Blood, plasma	Injection	HPLC	5	Not given	110 + or - 11 mg/100 ml	Peak, 60-75 min after dose of 0.8 g/kg Healthy 22-39 yr olds, Tennessee TENNESSEE; ADULTS; BLOOD PLASMA; DRUG INTERACTION; COMPARATIVE EVALUATIONS; ALCOHOLIC BEVERAGES	Desmond, P.V. Patwardhan, R.V. Schenker, S. Hoyumpa, A.M. 1980 European Journal of Clinical Pharmacology 18:275-278

(NEXT PAGE)

Ethyl alcohol (8 CI)
Ethanol (9 CI)
64-17-5
C2-H6-O
MW 46.07, MP -117.3 C, BP 78.32 C, VP 40 mm Hg at 19 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4834 Blood, whole	Ingestion	GC	4	a) 0.2914-0.551 mg/ml b) 4.05-12.50 ug/ml	a) 0.419 mg/ml b) 8.40 ug/ml	a) Ethanol, mean peaks. Peak times, 0.413-0.627 hr b) Acetaldehyde, mean peaks. Peak times, 0.33-0.59 hr Means of 3 experiments. Ethanol dose, 0.25 g/kg as 15% solution 12 hr after 0.7 mg/kg Ca carbimide. Drug-free alcoholics, ages 44-52 yr, wt 66.5-96.0 kg, with normal cardiovascular, hepatic, and renal function. Tachycardia caused by ethanol and Ca-carbimide interaction. DRUGS; ALCOHOLS; ADULTS; CANADA; BLOOD; DRUG INTERACTION; DRUG ABUSE	Brien, J.F. Peachey, J.E. Loomis, C.W. 1980 Clinical Pharmacology and Therapeutics 27(3):426-433

Ethylamine, 2-(diphenylmethoxy)-N,N-dimethyl- (8 CI)
Ethanamine, 2-(diphenylmethoxy)-N,N-dimethyl- (9 CI)
58-73-1
C17-H21-N-O
MW 255.35, BP 150-165 C at 2.0 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4835 Blood, plasma	Injection Ingestion	GC GC/MS	6	a) 99-196 ng/ml b) 37-83 ng/ml	a) 144 ng/ml b) 55 ng/ml SE	a) Peaks, after 50 mg IV. Continuous decline from 1st sample at 1 hr. Mean of 37 ng/ml at 8 hr b) Peaks, 2-3 hr after 50 mg, oral. Mean of 22 ng/ml at 8 hr. Healthy 22-33 yr olds, light meal before AM dose. Sedation and antihistamine effects positively correlated with plasma level. Antihistamine effect but no sedation at 25-50 ng/ml. DRUGS; SEDATIVES; ADULTS; BLOOD PLASMA; NEUROLOGIC MANIFESTATIONS	Carruthers, S.G. Shoeman, D.W. Hignite, C.E. Azarnoff, D.L. 1978 Clinical Pharmacology and Therapeutics 23(4):375-382

Folic acid (8 CI)
L-Glutamic acid, N-(4-(((2-amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl)amino)benzoyl)- (9 CI)
59-30-3
C19-H19-N7-O6
MW 441.40

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4836 Blood	Ingestion		40	Not given	138.9 + or - 11.5 IU/ml	Prior to folic acid treatment. After 3 X 10 mg per day for 30 days, levels increased about 5 fold. Normo- and oligospermic patients. No change in sperm count, % motile sperm, or DNA content per cell after folic acid treatment. ISRAEL; DRUGS; DRUG THERAPY; VITAMINS; BLOOD; SEMEN; DISEASES	Landau, B. Singer, R. Klein, T. Segenreich, E. 1978 Experientia 34(10):1301-1302

(NEXT PAGE)

Folic acid (8 CI)
L-Glutamic acid, N-(4-(((2-amino-1,4-dihydro-4-oxo-6-pteridinyl)methyl)amino)benzoyl)- (9 CI)
59-30-3
C19-H19-N7-O6
MW 441.40

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4837 Blood, serum	Ingestion	Microbiological	6	a) 106-288 ng/ml b) 78-196 ng/ml c) 300-480 ng/ml d) 170-330 ng/ml	a) 187 ng/ml b) 122 ng/ml c) 418 ng/ml d) 263 ng/ml	a) Predialysis, 1 mg/day dose b) Postdialysis, 1 mg/day dose c) Predialysis, 5 mg/day dose d) Postdialysis, 5 mg/day dose Dialysis started 1 hr after dose. Decline during dialysis was 26-53% (mean 36%). Stable anephric patients maintained by hemodialysis 6 hr, 3X/wk. DRUGS; DRUG THERAPY; BLOOD SERUM; DISEASES; COMPARATIVE EVALUATIONS; VITAMINS	Skoutakis, V.A. Acchiardo, S.P. Meyer, M.C. Hatch, F.E. 1975 Clinical Pharmacology and Therapeutics 18(2):200-204
4838 Semen	Ingestion		40	Not given	44.5 + or - 7.1 IU/ml	Prior to folic acid treatment. After 3 X 10 mg/day for 30 days, levels rose about 3 fold. Normo- and oligospermic patients. No change in sperm count, % motile sperm, or DNA content per cell after folic acid treatment. ISRAEL; DRUGS; DRUG THERAPY; VITAMINS; BLOOD; SEMEN; DISEASES	Landau, B. Singer, R. Flein, T. Segenreich, E. 1978 Experientia 34(10):1301-1302

Gentamicin
1403-66-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED
MP 102-108 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4839 Blood, serum	Injection Ingestion	Microbiological	5	a) 6.75-0.9 ug/ml b) 1.04-0.5 ug/ml	a) Not applicable b) Not applicable	a) 1 and 6 hr levels after 2 mg/kg IM. Initial measurement, 4.5 ug/ml at 0.5 hr b) 0.5 and 6 hr levels after 2 mg/kg, endotracheally 51-63 yr olds, hospitalized for cranial trauma, tracheotomized. Belgium. BELGIUM; ADULTS; BLOOD; BLOOD SERUM; ANTIBIOTICS; RESPIRATORY SECRETIONS	Odio, W. Van Laer, E. Flastersky, J. 1975 Journal of Clinical Pharmacology 15:518-524
4840 Blood, serum	Injection	Microbiological	7	a) 1.10-7.40 ug/ml b) 0.66-2.80 ug/ml	a) 3.73 ug/ml b) 1.41 ug/ml	a) Pre-exchange b) Post-exchange Exchange transfusions 3-12 hr after last 2.5 mg/kg, IV dose. Gentamicin removed, 170.3 ug/.77 hr exchange (means). Hospitalized 2-11 day olds, birth wt [illegible]0-3500 gm, Ohio. ANTIBIOTICS; NEWBORN; BLOOD SERUM; OHIO; DRUGS	Kliegman, R.M. Bertino, J.S., Jr. Fanaroff, A.A. Gavan, T.L. Speck, W.T. 1980 Journal of Pediatrics 96(5):927-930

(NEXT PAGE)

Gentamicin
1403-66-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED
HP 102-108 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4881 Blood, serum	Peritoneal	RIA	7	3.9-1.4 ug/ml	Not given	6 and 48 hr after 100 mg dose added to 6 hr, 2 liter peritoneal dialysate (1.5% dextrose). Initial measurement, 1.7 ug/ml at 1 hr Range of means Chronic renal failure patients undergoing continuous ambulatory peritoneal dialysis, 27-67 yr old, wt 57.3-89.3 kg. KIDNEY DISEASES; BLOOD SERUM; ANTIBIOTICS; DRUG THERAPY; *MEASUREMENT METHODS*	Pancorbo, S. Comty, C. 1981 Antimicrobial Agents and Chemotherapy 19(6):605-607
4882 Respiratory secretion	Injection Ingestion Inhalation		8	a) 4.6-82.0 ug/ml b) 13.6-22.0 ug/ml c) 480-12 ug/ml d) 0.30-1.83 ug/ml	a) 22.0 ug/ml b) 17.8 ug/ml c) Not applicable d) Not applicable	a) Tracheal aspirate, 1 hr after 80 mg, aerosol b) Sputum induced by tracheal aspiration, 1 hr after 80 mg, aerosol c) Bronchial secretions, 0.5 and 6 hr means after 2 mg/kg, endotracheally d) Bronchial secretions, 0.5 and 1 hr means after 2 mg/kg, IM. Final measurement, 0.5 ug/ml at 6 hr. c) and d) estimated from graph. 4 tracheotomized 51-63 yr olds, in neurosurgical unit and 4 adults whose bronchial secretions were tested for neoplastic cells. Belgium. BELGIUM; ADULTS; BLOOD; BLOOD SERUM; ANTIBIOTICS; *RESPIRATORY SECRETIONS*	Odio, W. Van Laer, E. Klastersky, J. 1975 Journal of Clinical Pharmacology 15:518-524
4883 Urine	Injection Ingestion	Microbiological		a) 12.6-95.8 ug/ml b) Not given	a) 35.7 ug/ml b) 19.3 ug/ml	a) 0-6 hr levels after 2 mg/kg IM b) 0-6 hr levels after 2 mg/kg, endotracheally 51-63 yr olds, hospitalized for cranial trauma, tracheotomized. Belgium. BELGIUM; ADULTS; BLOOD; BLOOD SERUM; ANTIBIOTICS; *RESPIRATORY SECRETIONS*	Odio, W. Van Laer, E. Klastersky, J. 1975 Journal of Clinical Pharmacology 15:518-524

Glucitol, 1,4:3,6-dianhydro-, dinitrate, D- (8 CI)
D-Glucitol, 1,4:3,6-dianhydro-, dinitrate (9 CI)
87-33-2
C6-H8-N2-08
MW 236.14, MP 70 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4844 Blood, serum	Sublingual	GC	10	a) Not given b) Not given c) Not given	a) 17.9 + or - 3.1 ng/ml b) 9.0 + or - 0.8 ng/ml c) 38.4 + or - 3.4 ng/ml SE	a) After 5 mg. Peak time 10.0 + or - 1.8 min b) 2-isosorbide dinitrate (metabolite) after 5 mg isosorbide dinitrate. Peak time 52.1 + or - 9.8 min c) 5-isosorbide dinitrate (metabolite) after 5 mg isosorbide dinitrate. Peak time 87.6 + or - 14.6 min Peaks Healthy volunteers, Federal Republic of Germany Headache, nausea, light-headedness, decrease in blood pressure, increase in heart rate. Severe hypotension and reversible bradycardia in 3 subjects. GERMANY; ADULTS; BLOOD SERUM; DRUGS; METABOLISM; METABOLITES	Sporl-Radun, S. Betzien, G. Kaufmann, B. Liede, V. Abshagen, U. 1980 European Journal of Clinical Pharmacology 18:237-244
4845 Urine	Ingestion	Radiometry	2	8-97% of dose	Not applicable	8-120 hr cumulative excretion after 5 mg 14C-labelled drug. Excretion 92% complete by 48 hr. 80% excreted as polar material. Unchanged drug detected only in 0-3 hr urines, as <1% of dose. Most polar material was conjugated isosorbide. Volunteers with normal renal and hepatic function. DRUGS; METABOLISM; METABOLITES; URINE; ADULTS	Down, M.H. Chasseaud, L.F. Grundy, R.K. 1978 Journal of Pharmaceutical Sciences 63(7):1147-1149

Glutamic acid, N-(p-(((2,4-diamino-6-pteridinyl)methyl)amino)benzoyl)-, L- (8 CI)
L-Glutamic acid, N-(4-(((2,4-diamino-6-pteridinyl)methyl)amino)benzoyl)- (9 CI)
54-62-6
C19-H20-N8-05
MW 440.43

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4845 Blood, serum	Injection		12	a) 10(E-4)-1.5X10(E-7) moles/l b) Not given c) Not given d) Not given e) Not given	a) Not applicable b) 3.6 + or - 2.0X10(E-6) moles/l c) 1.6 + or - 1.0X10(E-6) moles/l d) 3.2 + or - 1.8X10(E-6) moles/l e) 1.6 + or - 1.2X10(E-6) moles/l	a) Range 0 and 24 hr after unspecified dose. Biexponential elimination b) Nephrotoxic c) Nonnephrotoxic d) Systemically toxic e) Nontoxic b)-e) toxicity after 250-350 mg/sq m followed by leucovorin rescue 29-69 yr olds with advanced metastases. Nausea and/or vomiting, mucositis, leukocytopenia, platelet count suppression, nephrotoxicity, myelosuppression, elevated serum creatinine. DRUGS; DRUG THERAPY; NEOPLASMS; BLOOD SERUM; ADULTS; AMMONIUM COMPOUNDS; CHEMOTHERAPY	Glode, L.M. Pitman, S.W. Passinger, W.D. Posowsky, A. Papathanasopoulos, N. Frei, F., III 1979 Cancer Research 39:3707-3714

Glutamic acid, N-(p-(((2,4-diamino-6-pteridinyl)methyl)methylamino)benzoyl)-, L-(+)- (8 CI)
L-Glutamic acid, N-(4-(((2,4-diamino-6-pteridinyl)methyl)methylamino)benzoyl)- (9 CI)
59-05-2
C20-H22-N8-O5
MW 454.46, MP 185 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4847 Blood, plasma	Injection	HPLC Enzymatic	3	a) 0.6X10(E-3) - 0.5X10(E-6) moles/l b) 0.8X10(E-3) - 1X10(E-6) moles/l c) 1X10(E-4) - 0.8X10(E-5) moles/l	a) Not given b) Not given c) Not given	a) 6 and 48 hr after 6 hr IV, HPLC method b) 6 and 48 hr after 6 hr IV, enzyme inhibition method c) Metabolite, 7-Hydroxymethotrexate. 12 and 48 hr after 6 hr IV, HPLC method Dose, 200 mg/kg Estimated from graph 6-22 yr old osteosarcoma patients COMPARATIVE EVALUATIONS; CHEMOTHERAPY; UNITED STATES; BONE DISEASES; NEOPLASMS; BLOOD PLASMA	Howell, S.K. Wang, Y.-M. Hosoya, R. Sutow, W.W. 1980 Clinical Chemistry 26:736-737
4848 Blood, serum	Injection	RIA	3	a) 8X10(E-4)-9X10(E-8) moles/l b) 5X10(E-4)-3X10(E-8) moles/l	a) Not given b) Not given	a) With probenecid, 1.7 g/sq m orally, in 4 doses/day b) Without probenecid Values are 1-120 hr levels after 15 min IV of 3.0 g/sq m. Continuous bierponential decline. Data also for constant infusion. Cancer patients, ages 20, 24, and 47 yr. No toxic effects. DRUGS; DRUG INTERACTION; CHEMOTHERAPY; NEOPLASMS; BLOOD SERUM; CEREBROSPINAL FLUID; METABOLISM; ADULTS; CHILDREN	Howell, S.B. Olshen, R.A. Rice, J.A. 1979 Clinical Pharmacology and Therapeutics 26(5):641-646
4849 Cerebrosp inal fluid	Injection	RIA	3	a) 1.5X10(E-5)-3X10(E-7) moles/l b) 4X10(E-6)-7X10(E-8) moles/l	a) Not given b) Not given	a) With probenecid, 1.7 g/sq m orally in 4 doses/day b) Without probenecid 24-72 hr geometric means after 3.0 g/sq m IV over 15 min. Large standard deviations. Data also for continuous infusion. Cancer patients, ages 20, 24, and 47 yr. No toxic effects. DRUGS; DRUG INTERACTION; CHEMOTHERAPY; NEOPLASMS; BLOOD SERUM; CEREBROSPINAL FLUID; METABOLISM; ADULTS; CHILDREN	Howell, S.B. Olshen, R.A. Rice, J.A. 1979 Clinical Pharmacology and Therapeutics 26(5):641-646
4850 Urine	Injection	HPLC	4	a) 6,986-16,633 mg b) 230-984 mg	a) 10,962 + or - 4070 mg b) 486.5 + or - 337.8 mg	a) Methotrexate + 7-hydroxy-methotrexate + 2,4-diamino-N(10)-methylpteroic acid b) 2,4-Diamino-N(10)-methylpteroic acid 0-48 hr cumulative excretions after start of >50 mg/kg, 6-hr IV. Total doses 11.5-22.1 g. Cancer patients DRUGS; CHEMOTHERAPY; URINE; METABOLITES; MEASUREMENT METHODS; NEOPLASMS; DISEASES	Donehower, R.C. Hande, K.R. Drake, J.C. Chabner, B.A. 1979 Clinical Pharmacology and Therapeutics 26(1):63-72

Gold
7440-57-5
Au
Atw 196.9665, MP 1064.76 C, BP 2700 C, VP 1 mm Hg at 1869 C, 10 mm Hg at 2160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4851 Blood, plasma	Injection	AAS	10	97-32 ug/100 ml	Not applicable	Range of means 4 and 968 hr after 10 mg Na-aurothiomalate, IM. Biexponential decline. Patients with rheumatoid arthritis, mean age 57.5 + or - 11.3 yr. GOLD; METALS; RHEUMATOID ARTHRITIS; BLOOD SERUM; URINE; FECES; MINERAL METABOLISM; ADULTS	Harth, M. 1974 Clinical Pharmacology and Therapeutics 15(4):354-360
4852 Blood, serum	Injection	AAS	1	10.5-4.8 umole/l	Not applicable	2 days before-1 day after chelation therapy with dimercaprol. 840 mg cumulative Na-auriothiomalate dose-last injection 11 days before dimercaprol. Prednisone 60 mg/day, started 7 days after last Au dose. Estimated from graph. Rheumatoid patient Life-threatening thrombocytopenia. Recovery after prednisone and dimercaprol therapy. GOLD; MEASUREMENT METHODS; RHEUMATOID ARTHRITIS; METAL POISONING; DISEASES; METALS; NEW ZEALAND; BLOOD SERUM; URINE	Dunckley, J.V. Grennan, D.M. Palmer, D.G. 1979 Journal of Analytical Toxicology 3:242-245
4853 Urine	Injection	AAS	1	19.75-7.7 umoles/l	Not given	840 mg cumulative dose of Na-auriothiomalate-last injection 11 days before dimercaprol. Estimated from graph. 1 and 6 days after chelation therapy with dimercaprol. Rheumatoid patient Life-threatening thrombocytopenia. Recovery after prednisone and dimercaprol therapy. GOLD; MEASUREMENT METHODS; RHEUMATOID ARTHRITIS; METAL POISONING; DISEASES; METALS; NEW ZEALAND; BLOOD SERUM; URINE	Dunckley, J.V. Grennan, D.M. Palmer, D.G. 1979 Journal of Analytical Toxicology 3:242-245
4854 Urine	Injection	AAS	10	a) Not given b) Not given	a) 270 + or - 145 ug b) 145 + or - 99 ug	a) 1st 24 hr b) 2nd 24 hr After 10 mg Na-aurothiomalate, IM. Patients with rheumatoid arthritis, mean age 57.5 + or - 11.3 yr. GOLD; METALS; RHEUMATOID ARTHRITIS; BLOOD SERUM; URINE; FECES; MINERAL METABOLISM; ADULTS	Harth, M. 1974 Clinical Pharmacology and Therapeutics 15(4):354-360

Guanidine, N-cyano-N'-methyl-N''-(2-(((5-methyl-1H-imidazol-4-yl)methyl)thio)ethyl)-
51481-61-9
C10-H16-N6-S
MW 252.38

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4855 Blood, plasma	Ingestion	HPLC	6	a) 0.02-0.5 ug/ml b) 0.3-1.5 ug/ml	a) Not given b) Not given	a) 60 min after 200 mg dose b) 300 min after 200 mg dose Estimated from graph Healthy 24-30 yr olds, wt 65-78 kg 50% inhibition of gastric acid secretion with mean plasma level of 0.78 ug/ml. ADULTS; BLOOD PLASMA; AUTONOMIC DRUGS; DRUGS	Gugler, R. Fuchs, G. Diekmann, H. Somogyi, A. 1981 Clinical Pharmacology and Therapeutics 29(6):744-748

Hydantoin, 1-((5-nitrofurfurylidene)amino)- (8 CI)
2,4-Imidazolidinedione, 1-(((5-nitro-2-furanyl)methylene)amino)- (9 CI)
67-20-9
C8-H6-N4-O5
MW 238.16, MP 270-272 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4856 Blood, plasma	Injection Ingestion	HPLC	6	a) 51.9-75.5 ug/ml min b) 56.8-76.1 ug/ml min c) 59.5-75.5 ug/ml min	a) 63.2 + or - 10.3 ug/ml min b) 68.0 + or - 6.6 ug/ml min c) 66.6 + or - 6.5 ug/ml min	a) Oral, fasting, 50 mg dose b) Oral, with food, 50 mg dose c) IV, 47.0-56.0 min infusion, 43.9-50.3 mg Area under concentration/time curve data Healthy 25-35 yr olds, wt 62-80 kg. ADULTS; BLOOD PLASMA; DRUGS; URINE; METABOLITES	Hoener, B.-A. Patterson, S.E. 1981 Clinical Pharmacology and Therapeutics 29(6):808-816
4857 Urine	Ingestion	Colorimetry	6	a) 10.59-34.58% of dose b) 3.67-14.13% of dose	a) 22.24 + or - 8.43% of dose b) 9.52 + or - 3.69% of dose	a) 100 mg dose. Peak at 3.0 + or - 1.64 hr b) 100 mg with 5 g Mg trisilicate antacid. Peak at 3.17 + or - 1.37 hr 12-hr excretions. 34-50 yr olds, wt 62-95 kg, no urinary tract diseases. Fasted before and after dose. DRUGS; EGYPT; URINE; ADULTS; COMPARATIVE EVALUATIONS	Naggar, V.F. Khalil, S.A. 1979 Clinical Pharmacology and Therapeutics 25(6):857-863
4858 Urine	Ingestion	HPLC	a) 6 b) 6	a) 26-320 ug/ml b) 18-84 ug/ml	a) 132 + or - 116 ug/ml b) 50 + or - 23 ug/ml	a) Oral, fasting, 50 mg dose. Maximum levels at mean of 105 min b) Oral, with food, 50 mg dose. Maximum levels at mean of 170 min Healthy 25-35 yr olds, wt 62-80 kg. ADULTS; BLOOD PLASMA; DRUGS; URINE; METABOLITES	Hoener, B.-A. Patterson, S.E. 1981 Clinical Pharmacology and Therapeutics 29(6):808-816

Hydantoin, 5,5-diphenyl- (8 CI)
2,4-Imidazolidinedione, 5,5-diphenyl- (9 CI)
57-41-0
C15-H12-N2-O2
MW 252.26, MP 295-298 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4859 Blood, plasma	Ingestion	MS	7	a) 1.13-1.81 ug/ml b) 0.043-0.112 ug/ml c) 0.56-7.31 ug/ml d) 1.06-3.03 ug/ml e) 0.011-0.053 ug/ml f) 0.22-0.72 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Phenytoin, uremics b) Free 4-OH metabolite, uremics c) Conjugated 4-OH metabolite, uremics d) Phenytoin, controls e) Free 4-OH metabolite, controls f) Conjugated 4-OH metabolites, controls (0-7 days) 0-11 days, 6 hr after 0.1 g/day, AM dose. 28-67 yr olds with chronic renal failure, healthy 28-37 yr olds. DRUGS; DISEASES; ANTICONVULSANTS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; KIDNEY DISEASES; METABOLISM; METABOLITES; SWEDEN; ADULTS	Borga, O. Hoppel, C. Odar-Cederlof, I. Garle, M. 1979 Clinical Pharmacology and Therapeutics 26(3):306-314
4860 Blood, plasma	Ingestion	HPLC Radiometry	2	a) 2.16-2.46 ug/ml b) 0.0429-0.0554 ug/ml c) 0.564-0.602 ug/ml	a) 2.31 ug/ml b) 0.0492 ug/ml c) 0.583 ug/ml	a) Peaks, at 1 hr, diphenylhydantion b) Peaks, at 0.5 and 6 hr, p-hydroxyphenyl metabolite c) Peaks, at 12 hr, p-hydroxyphenyl metabolite as glucuronide conjugate Dose, 88.8 mg 14-C-labelled diphenylhydantoin acid. Healthy 24 and 32 yr olds, fasted before and after dose. ADULTS; BLOOD PLASMA; ANTICONVULSANTS; DRUGS; METABOLISM; METABOLITES	Albert, K.S. Hallmark, M.P. Sakman, E. Weidler, D.J. Wagner, J.G. 1974 Research Communications in Chemical Pathology and Pharmacology 9(3):463-469
4861 Blood, plasma	Ingestion	GC	a) 70 b) 39	a) Not given b) Not given	a) 14.134 + or - 10.987 ug/ml b) 12.90 + or - 9.152 ug/ml	a) Males, 2-4 hr after 5.68 + or - 6.24 mg/kg b) Females, 2-4 hr after 4.37 + or - 2.90 mg/kg Patients on maintenance doses for seizures. ANTICONVULSANTS; DRUG THERAPY; BLOOD PLASMA; SEX; DRUG INTERACTION; DIPHENYLHYDANTOINS	Schaeffer, D.J. Janardan, K.G. Somani, S.M. Easton, D. Sherman, D. 1980 Toxicology and Applied Pharmacology 53:354-364
4862 Blood, plasma		Colorimetry	14	a) 0-32.5 ug/ml b) 0-29.0 ug/ml	a) 15.4 mg/ml b) Not given	a) Determined by microspectrophotometric method. Mean difference between duplicate determinations, 1.0 ug/ml b) By a macro-method at a public hospital laboratory, 12 specimens Mean difference between methods, 1.3 ug/ml. DRUGS; ANTICONVULSANTS; MEASUREMENT METHODS; BLOOD PLASMA	Wallace, J.E. Hamilton, H.E. 1974 Journal of Pharmaceutical Sciences 63(11):1795-1798
4863 Blood, plasma	Injection	Colorimetry	12	a) 7-0.4 ug/ml b) 4-0.38 ug/ml	a) Not applicable b) Not applicable	a) 10 min and 72 hr after 250 mg IV of 25 mg/min. Biexponential decline b) 15 and 120 hr after 500 mg IM in 4 sites. Initial measurement, 1.6 ug/ml. Estimated from graph. Healthy 20-31 yr olds wt, 57.9-79.5 kg. DRUGS; ANTICONVULSANTS; BLOOD PLASMA; ADULTS; URINE; COMPARATIVE EVALUATIONS; METABOLISM	Kostenbauder, H.B. Rapp, P.P. McGovern, J.P. Foster, T.S. Perrier, D.G. Blacker, H.M. Hulon, W.C. Kinkel, A.W. 1975 Clinical Pharmacology and Therapeutics 18(4):449-456

Hydantoin, 5,5-diphenyl- (8 CI)
2,4-Imidazolidinedione, 5,5-diphenyl- (9 CI)
57-41-0
C15-H12-N2-O2
MW 252.26, MP 295-298 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4864 Blood, plasma	Injection Ingestion	Colorimetry	1	108.5-0 ug/ml	Not applicable	24 hr and 11 days after last dose of 500 mg/day, (10X prescribed dose). Initial measurement, 85.2 ug/ml at 3 hr. Dose given in feeding gastrostomy before surgery. Folic acid given, starting 3 days after last dose. 5.5 yr old wt 19 kg, on anticonvulsant therapy, hospitalized for gastrointestinal surgery. Disoriented, with straight forward and 45 degree nystagmus and lateral gaze nystagmus for 7 days or less after last dose. DRUGS; CHILDREN; GEORGIA; ANTICONVULSANTS; BLOOD PLASMA; URINE; GASTROINTESTINAL SYSTEM; DRUG THERAPY	Pruitt, A.W. Zwiren, G.T. Patterson, J.H. Dayton, P.G. Cook, C.E. Wall, M.E. 1975 Clinical Pharmacology and Therapeutics 18(1):112-120
4865 Blood, plasma	Ingestion	GC	6	a) 9.0-3.9 ug/ml b) 7.6-3.3 ug/ml	a) Not given b) Not given	a) Range of means, 12 and 48 hr after 900 mg. Initial measurement, 6.7 ug/ml at 2 hr b) Range of means, 12 and 48 hr after 900 mg plus aspirin therapy of 975 mg/6 hr begun 22 hr before phenytoin. Initial measurement, 3.7 ug/ml at 2 hr Free phenytoin 12.8% in a) and 16.3% in b). Some data estimated from graphs. Healthy 22-32 yr olds, fasted 8 hr before-3 hr after phenytoin . DRUGS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS	Fraser, D.G. Ludden, T.M. Evens, R.P. Sutherland, E.W. 1980 Clinical Pharmacology and Therapeutics 27(2):165-169
4866 Blood, plasma	Injection	GC	1	a) 11.9-10.4 ug/ml b) 11.1-10.3 ug/ml	a) Not applicable b) Not applicable	a) Entering hemodialyzer b) Leaving hemodialyzer Values are from 90-330 min of hemodialysis starting 12 hr after a fourth daily dose of 900 mg IV. 43.6 mg total drug in dialysate after 9 hr. 31-38% of plasma drug protein-bound. 24 yr old white male with history of renal failure, essentially anuric, hospitalized for renal transplant. DRUGS; DRUG THERAPY; BLOOD PLASMA; ADULTS; DISEASES; ANTICONVULSANTS	Adler, D.S. Martin, E. Gambertoglio, J.G. Tozer, T.N. Spire, J-P. 1975 Clinical Pharmacology and Therapeutics 18(1):65-69
4867 Blood, plasma	Injection	GC Radiometry	1	9.5-3.75 umoles/l	Not applicable	6-20 hr after 10 min IV, 100.21 mg, labelled dose. IV infusion of 100 mg, para-hydroxyphenyl metabolite over 16 hr. Healthy subject, nonmedicated >4 wk. DRUGS; METABOLISM; METABOLITES; ENZYMES; ADULTS; UNITED KINGDOM; BLOOD PLASMA; ANTICONVULSANTS; DRUG INTERACTION	Perucca, E. Makki, K. Richens, A. 1978 Clinical Pharmacology and Therapeutics 24(1):46-51

(NEXT PAGE)

Hydantoin, 5,5-diphenyl- (8 CI)
2,4-Imidazolidinedione, 5,5-diphenyl- (9 CI)
57-41-0
C15-H12-N2-02
MW 252.26, MP 295-298 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4868 Blood, serum	Ingestion	GC/MS	19	a) 0.8-25.2 mg/l b) 0.33-22 mg/l	a) Not given b) Not given	a) Range of peaks b) Range of means 0, 4, 8, and 12 hr after doses ranging from 4.0-17.9 mg/kg/day. Approximately 2 mo-20 yr olds hospitalized for seizures. DRUGS; DRUG THERAPY; CHILDREN; INFANTS; ANTICONVULSANTS; BLOOD SERUM	Dodson, W.E. 1980 Clinical Pharmacology and Therapeutics 27(5):704-707
4869 Blood, serum	Ingestion	RIA	7	a) 9-22 umoles/l b) 0.58-3.0 umoles/l	a) Not given b) Not given	a) 24 hr after 300 mg b) 72 hr after 300 mg 1550 mg aspirin at 72 hr lowered phenytoin by 27.4% over 2 hr values. Estimated from graph. Healthy 23-36 yr olds, wt 50-80 kg. DRUGS; DRUG INTERACTION; BLOOD SERUM; ADULTS; SALIVA; ANTICONVULSANTS; ANALGESICS; ANTIPYRETICS; NEW ZEALAND; METABOLISM	Paxton, J.W. 1980 Clinical Pharmacology and Therapeutics 27(2):170-178
4870 Saliva	Ingestion	RIA	7	a) 0.68-1.6 umoles/l b) 0.055-0.18 umoles/l	a) Not given b) Not given	a) 24 hr after 300 mg b) 72 hr after 300 mg Estimated from graph Healthy 23-36 yr olds, wt 50-80 kg. DRUGS; DRUG INTERACTION; BLOOD SERUM; ADULTS; SALIVA; ANTICONVULSANTS; ANALGESICS; ANTIPYRETICS; NEW ZEALAND; METABOLISM	Paxton, J.W. 1980 Clinical Pharmacology and Therapeutics 27(2):170-178
4871 Urine	Ingestion	MS	4	a) 0.44-1.2% of dose b) 0.78-2.0% of dose c) 52-94% of dose	a) 0.92% of dose b) 1.4% of dose c) 77% of dose	a) Phenytoin b) Free 4-OH metabolite, c) Conjugated 4-OH metabolite Steady state urinary recovery from 12-hr daytime collections. Means of 4 days after 0.1 mg/day, AM dose. Healthy 28-37 yr olds. DRUGS; DISEASES; ANTICONVULSANTS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; KIDNEY DISEASES; METABOLISM; METABOLITES; SWEDEN; ADULTS	Borga, O. Hoppel, C. Odar-Cederlof, I. Garle, M. 1979 Clinical Pharmacology and Therapeutics 26(3):306-314
4872 Urine	Injection	GC	12	a) 156.1-224.3 mg b) 183.1-425.3 mg	a) 187.6 mg b) 341.8 mg	a) 250 mg IV at 25 mg/min b) 500 mg IM in 4 sites 120-hr cumulative excretions of 5-p-hydroxyphenyl-5-phenylhydantoin. Healthy 20-31 yr olds wt, 57.9-79.5 kg. DRUGS; ANTICONVULSANTS; BLOOD PLASMA; ADULTS; URINE; COMPARATIVE EVALUATIONS; METABOLISM	Kostenbauder, H.B. Rapp, R.P. McGovern, J.P. Foster, T.S. Perrier, D.G. Blacker, H.M. Hulon, W.C. Kinkel, A.W. 1975 Clinical Pharmacology and Therapeutics 18(4):449-456

(NEXT PAGE)

Hydantoin, 5,5-diphenyl- (8 CI)
2,4-Imidazolidinedione, 5,5-diphenyl- (9 CI)
57-41-0
C15-H12-N2-O2
MW 252.26, MP 295-298 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4873 Urine	Injection Ingestion	GC	1	261.6-38.4 mg/day	Not applicable	Day 1 and 6 after last dose of 500 mg/day, (10% precribed dose). Values include m- and p- hydroxy phenyl metabolites. 5.5 yr old, wt 19 kg, on anticonvulsant therapy, hospitalized for gastrointestinal surgery. Disoriented, with straight forward and 45 degree nystagmus and lateral gaze nystagmus for 7 days or less after last dose. DRUGS; CHILDREN; GEORGIA; ANTICONVULSANTS; BLOOD PLASMA; URINE; GASTROINTESTINAL SYSTEM; DRUG THERAPY	Pruitt, A.W. Zwiren, G.T. Patterson, J.H. Dayton, P.G. Cook, C.E. Wall, M.E. 1975 Clinical Pharmacology and Therapeutics 18(1):112-120

Hydrazine
302-01-2
H4-N2
MW 32.05, MP 2.0 C, BP 113.5 C at 760 mm Hg, 56 C at 71 mm Hg, 170 C at 5 atm

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4874 Urine		GC		a) Not given b) Not given c) Not given d) Not given	a) 0.48% of dose b) 0.075% of dose c) 1.0% of dose d) 0.21% of dose	a) Slow acetylators, 100 mg dose, 7 subjects b) Fast actylators, 100 mg dose, 13 subjects c) Slow acetylators, 200 mg dose, 9 subjects d) Fast acetylators, 200 mg dose, 11 subjects 24 hr urines. Slow and fast acetylators differed at both doses, $p<0.02$ and 0.001, respectively Hypertensive patients DRUGS; URINE; UNITED KINGDOM; MEASUREMENT METHODS; ENZYMES; METABOLISM; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS	Timbrell, J.A. Harland, S.J. 1979 Clinical Pharmacology and Therapeutics 26(1):81-88

Imidazole-2-thiol, 1-methyl- (8 CI)
2H-Imidazole-2-thione, 1,3-dihydro-1-methyl- (9 CI)
60-56-0
C4-H6-N2-S
MW 114.17, MP 146-148 C, BP 280 C (some decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4875 Blood, plasma	Ingestion	HPLC	15	a) 0.7-0.17 ug/ml b) 1.8-0.5 ug/ml c) 0.1-0.65 ug/ml	a) Not given b) Not given c) Not given	a) 2 and 8 hr means after 60 mg carbimazole, 10 patients b) 2 and 8 hr means after 60 mg methimazole, 5 patients c) 3-methyl-2-thiohydantoin, 2 and 12 hr after 60 mg methimazole, 1 patient Previously untreated 18-57 yr old hyperthyroid patients, wt 44.5-65.8 kg, United Kingdom. DRUGS; DRUG THERAPY; DISEASES; UNITED KINGDOM; BLOOD PLASMA; METABOLITES; MEASUREMENT METHODS	Skellern, G.G. Knight, B.I. Low, L.C.K. Alexander, W.D. McLarty, D.G. Kalk, W.J. 1980 British Journal of Clinical Pharmacology 9:137-143
4876 Blood, plasma	Ingestion	HPLC	4	0.03-0.3 ug/ml	Not given	1.1 and 5 hr after 10 mg carbimazole. Pregnant 25-35 yr olds, wt 55.3-69.2 kg DRUGS; DRUG THERAPY; UNITED KINGDOM; BLOOD PLASMA; METABOLITES; MEASUREMENT METHODS; PREGNANCY; DISEASES	Skellern, G.G. Knight, B.I. Otter, M. Low, L.C.K. Alexander, W.D. 1980 British Journal of Clinical Pharmacology 9:145-147

Indole-3-acetic acid, 1-(p-chlorobenzoyl)-5-methoxy-2-methyl- (8 CI)
1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- (9 CI)
53-86-1
C19-H16-Cl-N-O4
MW 357.81, MP different forms 155 C, 162 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4877 Blood, plasma	Ingestion	GC-EC	a) 1 b) 1	a) 68-7.2 ng/ml b) 390-120 ng/ml	a) Not applicable b) Not applicable	a) Change 1-68 hr after 0.3 mg/kg b) Change 7.5-50 hr after 0.2 mg/kg. Possible dosing error (2.0 mg/kg) Premature infants with patent ductus arteriosus, 27-28 wk gestational age. Failure to achieve permanent ductal closure. Increased serum bilirubin, decreased urinary output, reduced platelet aggregation, GI bleeding, hydrocephalus. DRUGS; DRUG THERAPY; INFANTS; PENNSYLVANIA; CARDIOVASCULAR DISEASES; BLOOD PLASMA	Friedman, Z. Whitman, V. Maisels, M.J. Berman, W., Jr. Marks, K.H. Vesell, E.S. 1978 Journal of Clinical Pharmacology 18(5-6):272-279
4878 Blood, plasma	Ingestion	MS	5	0.31-0.63 ug/ml	0.478 ug/ml	Steady state levels after 25 mg 3X/day for 6-9 days. Healthy 22-29 yr old medical students, on no other drugs for >14 days. DRUGS; SWEDEN; RHEUMATOID ARTHRITIS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS	Alvan, G. Orme, M. Bertilsson, L. Ekstrand, R. Palmer, L. 1975 Clinical Pharmacology and Therapeutics 18(3):364-373

(NEXT PAGE)

Indole-3-acetic acid, 1-(p-chlorobenzoyl)-5-methoxy-2-methyl- (8 CI)
1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- (9 CI)
53-86-1
C19-H16-Cl-N-O4
MW 357.81, MP different forms 155 C, 162 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4879 Blood, plasma	Ingestion	GC-EC	a) 2 b) 4 c) 3	a) 0.027-0.052 ug/ml b) 0.032-0.058 ug/ml c) 0.055-0.310 ug/ml	a) 0.0395 ug/ml b) 0.0485 ug/ml c) 0.183 ug/ml	a) After 0.10 mg/kg b) After 0.25 mg/kg c) After 0.30 mg/kg Peaks, at 3-4 hr after administration. Premature infants with patent ductus arteriosus, mean gestational age, 32 wk, mean birth wt 1499 g 6 of 9 showed closure of the ductus after 24-48 hr. 2 had transient decrease in urinary output after 2nd dose. DRUGS; DRUG THERAPY; NEWBORN; ILLINOIS; DISEASES; BLOOD PLASMA; CARDIOVASCULAR DISEASES	Evans, M.A. Bhat, R. Vidyasagar, D. Vadapalli, M. Fisher, E. Hastreiter, A. 1979 Clinical Pharmacology and Therapeutics 26(6):746-751
4880 Blood, plasma	Injection	GC-EC	a) 8 b) 9	a) Not given b) Not given	a) 1.35 + or - 0.23 ug/ml b) 1.02 + or - 0.39 ug/ml	a) After single dose of 0.3 mg/kg IV b) After 2 or 3 doses, 0.3 mg/kg IV, 24 hr apart Peaks Inverse linear relationship between area under the curve and postnatal age ($r = -0.65$, $P < 0.01$). Premature infants with persistent ductus arteriosus, in IL. Fall in urine output during first 24 hr. ILLINOIS; INFANTS; NEWBORN; CARDIOVASCULAR DISEASES; BLOOD PLASMA; ANALGESICS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; DRUG THERAPY; COMPARATIVE EVALUATIONS	Thalji, A.A. Carr, I. Yeh, T.F. Raval, D. Luken, J.A. Pildes, R.S. 1980 Journal of Pediatrics 97(6):995-1000
4881 Blood, serum	Injection	GC-EC	37	a) 0.78-0.55 ug/ml b) 1.4-0.85 ug/ml	a) Not given b) Not given	a) 2 and 12 hr after initial dose of 0.2 mg/kg IV as trihydrate, 37 and 30 infants respectively b) 2 and 12 hr after second dose of 0.2 mg/kg IV, 19 and 16 infants respectively 13 infants who received a third dose 24 hr after the first have a mean of 1.3 ug/ml at 36 hr Range of means estimated from graph. Premature, low-birth-weight infants with patent ductus arteriosus AGE; INFANTS; NEWBORN; CARDIOVASCULAR DISEASES; BLOOD SERUM; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS	Yaffe, S.J. Friedman, W.F. Rogers, D. Lang, P. Pagni, M. Saccar, C. 1980 Journal of Pediatrics 97(6):1001-1006

Iron
7439-89-6
Fe
AtW 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4882 Urine	Ingestion	AAS	10	a) Not given b) Not given	a) < 2 ppm b) < 2 ppm	a) Mean daily intake (supplemented) of 66 mg, fecal loss of 41 mg, data from 24 7-day experimental periods b) Mean daily intake (unsupplemented) of 18 mg, fecal loss of 16 mg, data from 19 7-day experimental periods University students and employees, a nurse and a teacher. Nulliparous, ages 19-29 yr. TENNESSEE; URINE; IRON; CALCIUM; MAGNESIUM; MINERALS; PHOSPHORUS; DIETS; MINERAL METABOLISM; PREGNANCY	Ashe, J.R. Schofield, F.A. Gram, M.R. 1979 American Journal of Clinical Nutrition 32:286-291

Isonicotinic acid hydrazide (8 CI)
4-Pyridinecarboxylic acid, hydrazide (9 CI)
54-85-3
C6-H7-N3-O
FW 137.15, MP 171.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4883 Blood, whole	Injection	Fluorometry	a) 1 b) 1	a) 28-0.9 ug/ml b) 22-3.0 ug/ml	a) Not applicable b) Not applicable	a) Rapid acetylator, 10 and 250 min after 5.2 min IV of 670 mg b) Slow acetylator, 10 and 425 min after 5.4 min IV of 681 mg Biexponential elimination. Estimated from graph. Healthy caucasians, 29 and 50 yr old. DRUGS; METABOLITES; MEASUREMENT METHODS; URINE; BLOOD; ADULTS; METABOLISM; COMPARATIVE EVALUATIONS	Boxenbaum, H.G. Riegelman, S. 1974 Journal of Pharmaceutical Sciences 63(8):1191-1197
4884 Urine	Ingestion	Radiometry	7	a) 2.2-3.6% of dose b) 9.0-12.8% of dose c) 2.0-5.1% of dose d) 16.1-32.6% of dose e) 46.0-52.6% of dose f) 32.6-38.3% of dose g) 37.2-51.0% of dose h) 25.5-38.7% of dose	a) 2.8% of dose b) 10.9% of dose c) 3.6% of dose d) 26.5% of dose e) 49.2% of dose f) 32.1% of dose g) 44.4% of dose h) 30.5% of dose	a) Isoniazid, 3 fast acetylators b) Isoniazid, 4 slow acetylators c) Isoniazid hydrazones, 3 fast acetylators d) Isoniazid hydrazones, 4 slow acetylators e) Acetylisoniazid, 3 fast acetylators f) Acetylisoniazid, 4 slow acetylators g) Isonicotinic acid metabolites of acetylisoniazid, 3 fast acetylators h) Isonicotinic acid metabolites of acetylisoniazid, 4 slow acetylators Values for 24-hr urines after 5 mg/kg. Healthy 26-39 yr olds, on normal diets and taking no medications. No hepatic or renal disease. Fasting 12 hr before and after dose. DRUGS; DRUG THERAPY; METABOLISM; MARYLAND; URINE; COMPARATIVE EVALUATIONS; ADULTS	Mitchell, J.R. Thorgeirsson, U.P. Black, M. Timbrell, J.A. Snodgrass, W.R. Potter, W.Z. Jollow, D.J. Keiser, H.R. 1975 Clinical Pharmacology and Therapeutics 18(1):70-79

(NEXT PAGE)

Isonicotinic acid hydrazide (8 CI)
4-Pyridinecarboxylic acid, hydrazide (9 CI)
54-85-3
C6-H7-N3-O
MW 137.15, MP 171.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4885 Urine	Injection	Colorimetry	a) 1 b) 1	a) 0.8-0.025 mg/min b) 1.0-0.15 mg/min	a) Not applicable b) Not applicable	a) Rapid acetylator, 10 and 570 min after 5.2 min IV of 670 mg b) Slow acetylator, 10 and 570 min after 5.4 min IV of 681 mg Values for isoniazid plus its hydrazones. Estimated from graph. Healthy caucasians, 29 and 50 yr old. DRUGS; METABOLITES; MEASUREMENT METHODS; URINE; BLOOD; ADULTS; METABOLISM; COMPARATIVE EVALUATIONS	Boxenbaum, H.G. Riegelman, S. 1974 Journal of Pharmaceutical Sciences 63(8):1191-1197

Isonipecotic acid, 1-methyl-4-phenyl-, ethyl ester (8 CI)
4-Piperidinecarboxylic acid, 1-methyl-4-phenyl-, ethyl ester (9 CI)
57-42-1
C15-H21-N-O2
MW 247.35, MP 186-189 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4886 Blood	Injection	GC	a) 24 b) 13	a) 11-162 ng/ml b) 40-99 ng/ml	a) 95 + or - 43 ng/ml b) 64 + or - 22 ng/ml	a) Umbilical cord, venous, at birth b) Umbilical cord, arterial, at birth Mothers received 50 mg during labor levels decreased as drug-birth intervals increased 14 black, 16 Caucasian neonates, mean gestational age 39.4 wk, mean birth wt 3310 g. DRUGS; PREGNANCY; BLOOD; URINE; METABOLITES; OHIO; UMBILICAL CORD; NEWBORN	Kuhnert, B.R. Kuhnert, P.M. Tu, A-S.L. Lin, D.C.K. 1979 American Journal of Obstetrics and Gynecology 133(8):909-914
4887 Blood, plasma	Injection	GC	a) 1 b) 1	a) 4-0.3 ug/ml b) 30-0.4 ng/ml	a) Not applicable b) Not applicable	a) 15 min and 9 hr after 5 mg/kg dose. Initial measurement 3 ug/ml at 5 min. Arterial vessel clamped between 1st and 2nd hr b) Initial measurement and 9 hr after 5 mg/kg dose. Arterial vessel clamped between 1st and 4th hr Surgical patients with peripheral vascular disease CARDIOVASCULAR DISEASES; BLOOD PLASMA; ANALGESICS; DRUG THERAPY; DRUGS	Foska, A.J., III Kramer, W.G. Fomagnoli, A. Weats, A.S. Sabawala, P.B. 1981 Anesthesia and Analgesia 60(1):8-11
4888 Blood, serum	Injection	GC	a) 8 b) 8 c) 8	a) Not applicable b) Not applicable c) Not applicable	a) 124 + or - 11 ng/ml b) 134 + or - 24 ng/ml c) 130 + or - 22 ng/ml	a) Men, peak at 1 hr following 50 mg IM of the hydrochloride b) Women, peak at 1 hr following 50 mg IM of the hydrochloride c) Women on regimen of estrogen-progestin oral contraceptive, peak at 1 hr following 50 mg IM of the hydrochloride Healthy 21-28 yr olds ADULTS; BLOOD; BLOOD SERUM; ANALGESICS; DRUG INTERACTION; ORAL CONTRACEPTIVES; DRUG THERAPY; NARCOTICS; URINE	Stambaugh, J.E. Wainer, I.W. 1975a Journal of Clinical Pharmacology 15:46-51

(NEXT PAGE)

Isonipecotic acid, 1-methyl-4-phenyl-, ethyl ester (8 CI)
4-Piperidinecarboxylic acid, 1-methyl-4-phenyl-, ethyl ester (9 CI)
57-42-1
C15-H21-N-02
MW 247.35, MP 186-189 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4889 Urine	Injection	GC	a) 8 b) 8 c) 8	a) Not applicable b) Not applicable c) Not applicable	a) 3.17 mg b) 3.66 mg c) 3.67 mg	a) 6.3% of dose, men b) 7.3% of dose, women c) 7.4% of dose, women taking estrogen-progestin oral contraceptives 48 hr cumulative excretion after 50 mg IM of the hydrochloride. Healthy 21-28 yr olds ADULTS; URINE; ANALGESICS; DRUG INTERACTION; ORAL CONTRACEPTIVES; DRUG THERAPY; BLOOD; BLOOD SERUM; NARCOTICS	Stambaugh, J.E. Wainer, I.W. 1975a Journal of Clinical Pharmacology 15:46-51
4890 Urine	Injection	GC	24	Not applicable	3.27 mg	48 hr cumulative excretion, following 50 mg, IM as hydrochloride Healthy 21-30 yr olds URINE; ANALGESICS; COMPARATIVE EVALUATIONS; NARCOTICS; DRUGS	Stambaugh, J.E. Wainer, I.W. 1975b Journal of Clinical Pharmacology 15:269-271
4891 Urine	Injection	GC	8	0.5-14.25 ug/mg creatinine	Not given	Mothers received 50 mg during labor. Levels (estimated from graph) during first 3 days of life. Levels varied with day of collection and drug-birth interval. Clearance not complete at days. 16 black, 16 Caucasian neonates, mean gestational age 39.4 wk, mean birth wt 3310 g. DRUGS; PREGNANCY; BLOOD; URINE; METABOLITES; OHIO; UMBILICAL CORD; NEWBORN	Kuhnert, B.R. Kuhnert, P.M. Tu, A-S.L. Lin, D.C.K. 1979 American Journal of Obstetrics and Gynecology 133(8):909-914

Isonipecotic acid, 4-phenyl-, ethyl ester (8 CI)
4-Piperidinecarboxylic acid, 4-phenyl-, ethyl ester (9 CI)
77-17-8
C14-H19-N-02
MW 233.34

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4892 Blood	Injection	GC/MS	a) 13 b) 10	a) 5-38 ng/ml b) 2-42 ng/ml	a) 17 + or - 14 ng/ml b) 15 + or - 13 ng/ml	a) Umbilical cord, venous, at birth b) Umbilical cord, arterial, at birth Mothers received 50 mg meperidine during labor Levels unrelated to drug-birth interval. 16 black, 16 Caucasian neonates, mean gestational age 39.4 wk, mean birth wt 3310 g. DRUGS; PREGNANCY; BLOOD; URINE; METABOLITES; OHIO; UMBILICAL CORD; NEWBORN	Kuhnert, B.R. Kuhnert, P.M. Tu, A-S.L. Lin, D.C.K. 1979 American Journal of Obstetrics and Gynecology 133(8):909-914

(NEXT PAGE)

Isonipecotic acid, 4-phenyl-, ethyl ester (8 CI)
4-Piperidinecarboxylic acid, 4-phenyl-, ethyl ester (9 CI)
77-17-8
C14-H19-N-O2
MW 233.34

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4893 Urine	Injection	GC	a) 8 b) 8 c) 8	a) Not applicable b) Not applicable c) Not applicable	a) 3.36 mg b) 4.01 mg c) 2.53 mg	a) 6.7% of dose, men b) 8.0% of dose, women c) 5.1% of dose, women taking estrogen-progestin oral contraceptives 48 hr cumulative excretion after 50 mg IM of meperidine hydrochloride. Healthy 21-28 yr olds ADULTS; URINE; ANALGESICS; DRUG INTERACTION; ORAL CONTRACEPTIVES; DRUG THERAPY; BLOOD; BLOOD SERUM; NARCOTICS	Stambaugh, J.E. Wainer, I.W. 1975a Journal of Clinical Pharmacology 15:46-51
4894 Urine	Injection	GC	24	Not given	3.69 mg	48 hr cumulative excretion following 50 mg, IM as hydrochloride Healthy 21-30 yr olds URINE; ANALGESICS; COMPARATIVE EVALUATIONS; NARCOTICS; DRUGS	Stambaugh, J.E. Wainer, I.W. 1975b Journal of Clinical Pharmacology 15:269-271
4895 Urine	Injection	GC/MS	8	0.6-3.75 ug/mg creatinine	Not given	Fothers received 50 mg dose meperidine during labor. Levels (estimated from graph) during first 3 days of life. Levels varied with day of collection and drug-birth interval. Clearance not complete at 3 days. 14 black, 16 Caucasian neonates, mean gestational age 39.4 wk, mean birth wt 3310 g. DRUGS; PREGNANCY; BLOOD; URINE; METABOLITES; OHIO; UMBILICAL CORD; NEWBORN	Kuhnert, B.R. Kuhnert, P.M. Tu, A-S.L. Lin, D.C.K. 1979 American Journal of Obstetrics and Gynecology 133(8):909-914

Isoquinoline, 7,8-dichloro-1,2,3,4-tetrahydro-, hydrochloride
57987-77-6
C9-H9-Cl2-N.Cl-H
MW 238.55

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4896 Blood, plasma	Ingestion	GC	10	6.3-0.6 ug/ml	Not given	1 and 12 hr after 150 mg. Initial measurement, 5.8 ug/ml at 0.5 hr Estimated from graph Healthy 21-33 yr olds, wt 59-95 kg. Mild gastrointestinal effects after 1 hr. Fatigue or sleepiness after 2 hr. DRUGS; ENZYMES; BLOOD PLASMA; ADULTS; URINE	Dubb, J.W. Stote, R.M. Alexander, F. Intoccia, A.P. Geezy, M. Pendleton, R.G. 1979 Clinical Pharmacology and Therapeutics 25(6):837-843

(NEXT PAGE)

Isoquinoline, 7,8-dichloro-1,2,3,4-tetrahydro-, hydrochloride
57987-77-6
C9-H9-Cl2-N.Cl-H
MW 238.55

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4897 Urine	Ingestion	GC	10	Not given	13.7% of dose (20.6 mg)	48 hr cumulative excretion after 150 mg Healthy 21-33 yr olds, wt 59-95 kg Mild gastrointestinal effects after 1 hr. Fatique or sleepiness after 2 hr. DRUGS; ENZYMES; BLOOD PLASMA; ADULTS; URINE	Dubb, J.W. Stote, R.M. Alexander, F. Intoccia, A.P. Geezy, M. Pendleton, R.G. 1979 Clinical Pharmacology and Therapeutics 25(6):837-843

L-Ascorbic acid
50-81-7
C6-H8-O6
MW 176.12, MP 190-192 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4898 Blood, cells	Ingestion		6	a) 58.89-79.83 ug/10(E+8) cells b) 67.19-77.97 ug/10(E+8) cells c) 60.88-60.16 ug/10(E+8) cells d) 45.07-43.85 ug/10(E+8) cells e) 46.61-41.13 ug/10(E+8) cells f) 45.95-37.84 ug/10(E+8) cells	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.5 and 2 hr after 500 mg. Predose value, 47.92 ug/10(E+8) cells b) 0.5 and 2 hr after 500 mg plus 300 mg acetylsalicylic acid (ASA). Predose value, 63.74 ug/10(E+8) cells c) 0.5 and 2 hr after 500 mg plus 600 mg ASA. Predose value, 63.08 ug/10(E+8) cells d) 1 and 2 hr after 1000 mg plus 600 mg ASA. Predose value, 43.48 ug/10(E+8) cells e) 0.5 and 2 hr after 1500 mg plus 600 mg ASA. Predose value, 43.41 ug/10(E+8) cells f) 0.5 and 2 hr after 2000 mg plus 600 mg ASA. Predose value, 42.75 ug/10(E+8) cells Leukocytes Healthy students, nonsmokers, University of Dublin, Ireland. IRELAND; ADULTS; BLOOD; BLOOD PLASMA; LEUKOCYTES; ANALGESICS; DRUG INTERACTION; VITAMINS; VITAMIN C	Loh, H.S. Wilson, C.W.M. 1975 Journal of Clinical Pharmacology 15:36-45
4899 Blood, plasma	Ingestion		6	a) 1.57-2.16 mg/100 ml b) 1.64-2.83 mg/100 ml c) 1.44-2.63 mg/100ml d) 1.13-2.17 mg/100 ml e) 1.36-2.60 mg/100 ml f) 1.30-2.66 mg/100 ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.5 and 2 hr after 500 mg. Predose value, 1.12 mg/100 ml b) 0.5 and 2 hr after 500 mg plus 300 mg acetylsalicylic acid (ASA). Predose value, 1.25 mg/100 ml c) 0.5 and 2 hr after 500 mg plus 600 mg ASA. Predose value, 1.04 mg/100 ml d) 0.5 and 2 hr after 1000 mg plus 600 mg ASA. Predose value, 0.63 mg/100 ml e) 0.5 and 2 hr after 1500 mg plus 600 mg ASA. Predose value, 0.66 mg/100 ml f) 0.5 and 2 hr after 2000 mg plus 600 mg ASA. Predose value, 0.65 mg/100 ml Healthy students, nonsmokers, University of Dublin, Ireland. IRELAND; ADULTS; BLOOD; BLOOD PLASMA; LEUKOCYTES; ANALGESICS; DRUG INTERACTION; VITAMINS; VITAMIN C	Loh, H.S. Wilson, C.W.M. 1975 Journal of Clinical Pharmacology 15:36-45

L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)-
62571-86-2
C9-H15-N-03-S
MW 217.31

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4900 Blood	Ingestion	TLC Radiometry	10	a) Not given b) Not given	a) 800 + or - 76 ng/ml b) 1580 + or - 90 ng/ml	a) Mean peak at 0.93 + or - 0.08 hr, unchanged drug b) Mean peak at 1.05 + or - 0.08 hr, total radioactivity (as captopril equivalents) After 100 mg, labelled dose Healthy, 18-35 yr old caucasians, wt 68.2-85.0 kg, fasted before and after dose. ANTIHYPERTENSIVE AGENTS; BLOOD; URINE; FECES; METABOLITES; RADIOISOTOPES; ADULTS	Kripalani, K.J. McKinstry, D.N. Singhvi, S.M. Willard, D.A. Vukovich, R.A. Migdalof, B.H. 1980 Clinical Pharmacology and Therapeutics 27(5):636-641
4901 Urine	Ingestion	TLC Radiometry	10	a) Not given b) Not given c) Not given d) Not given	a) 38.4 + or - 1.99% of dose b) 1.48 + or - 0.15% of dose c) 26.2 + or - 1.11% of dose d) 66.0% of dose (S.E.)	a) Captopril b) Captopril disulfide c) Unidentified polar metabolites d) Total radioactivity 0-24 hr after 100 mg, labelled dose. Healthy, 18-35 yr old caucasians, wt 68.2-85.0 kg, fasted before and after dose. ANTIHYPERTENSIVE AGENTS; BLOOD; URINE; FECES; METABOLITES; RADIOISOTOPES; ADULTS	Kripalani, K.J. McKinstry, D.N. Singhvi, S.M. Willard, D.A. Vukovich, R.A. Migdalof, B.H. 1980 Clinical Pharmacology and Therapeutics 27(5):636-641

Lactic acid, 3-(1-naphthyloxy)- (8 CI)
Propanoic acid, 2-hydroxy-3-(1-naphthalenyloxy)- (9 CI)
10476-54-7
C13-H12-04
MW 232.25

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4902 Blood, plasma	Ingestion Injection	GC/MS	a) 3 b) 5 c) 5	a) 14.5-4.9 ng/ml b) 125-8.5 ng/ml c) 340-28 ng/ml	a) Not given b) Not given c) Not given	a) 2 and 12 hr after 0.05 mg/kg, IV. Initial measurement, 8.5 ng/ml b) 2.5 and 16 hr after 20 mg, oral. Initial measurement, 11.6 ng/ml c) 2 and 16 hr after 80 mg, oral. Initial measurement, 66 ng/ml Range of means estimated from graphs. Dose, propranolol. Data also available for long-term doses and for propranolol. Healthy 22-30 yr olds, wt 62-83 kg. DRUGS; METABOLITES; ANTIHYPERTENSIVE AGENTS; BLOOD PLASMA; URINE	Walle, T. Conradi, E.C. Walle, U.K. Fagan, T.C. Gaffney, T.E. 1979a Clinical Pharmacology and Therapeutics 26(5):548-554

Leurocristine (8 CI)
Vincaleukoblastine, 22-oxo- (9 CI)
57-22-7
C46-H56-N8-O10
MW 824.94, MP 218-220 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4903 Bile	Injection	Radiometry/HPLC	1	21.7-1.8% of dose	Not applicable	Tritiated vincristine plus metabolites, 2 and 72 hr after 2 min IV of 158.5 uCi (0.49 mg). Estimated from graph. Total 3 day excretion, 28.4% of dose. More than 50% as metabolites or decomposition products 50 yr old with pancreatic carcinoma and a choledochol T-tube. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; BILE; FECES; URINE; BLOOD PLASMA; METABOLISM; METABOLITES	Jackson, D.V. Castle, M.C. Bender, R.A. 1978 Clinical Pharmacology and Therapeutics 24(1):101-107
4904 Blood, plasma	Injection	Radiometry/HPLC	1	28-0.5 nmoles/l	Not applicable	Vincristine equivalents, 10 min and 72 hr after 2 min IV of 158.5 uCi (0.49 mg) tritiated dose. Decline approximately bierponential with peak at first observation. Estimated from graph. 50 yr old with pancreatic carcinoma and a choledochol T-tube. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; BILE; FECES; URINE; BLOOD PLASMA; METABOLISM; METABOLITES	Jackson, D.V. Castle, M.C. Bender, R.A. 1978 Clinical Pharmacology and Therapeutics 24(1):101-107
4905 Urine	Injection	Radiometry/HPLC	1	21.6-1.5% of dose	Not applicable	Day 1-3, tritiated vincristine plus metabolites, after 2 min IV of 158.5 uCi (0.49 mg). Total 3 day excretion, 26.2% of dose. 50 yr old with pancreatic carcinoma and a choledochol T-tube. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; BILE; FECES; URINE; BLOOD PLASMA; METABOLISM; METABOLITES	Jackson, D.V. Castle, M.C. Bender, R.A. 1978 Clinical Pharmacology and Therapeutics 24(1):101-107

Lithium
7439-93-2
Li
AtW 6.941, MP 180.54 C, BP 1336 C, VP 1 mm Hg at 723 C, 10 mm Hg at 890 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4906 Urine			1	3.6-24.5 mmoles/l	Not given	During 1st 216 hr after start of Li therapy, single 1 g dose Camcolit/day. 44 yr old manic depressive. LITHIUM; DRUG THERAPY; URINE; UNITED KINGDOM; PSYCHOTROPIC DRUGS; HEALTH HAZARDS; KIDNEY DISEASES; NERVOUS SYSTEM DISEASES	Birch, N.J. Mullin, R.P. 1980 British Medical Journal 280(6223):1148-1149

m-Benzenedisulfonamide, 4-chloro-N(1)-methyl-N(1)-(tetrahydro-2-methyl furfuryl)- (8 CI)
1,3-Benzenedisulfonamide, 4-chloro-N(1)-methyl-N(1)-((tetrahydro-2-methyl-2-furanyl)methyl)- (9 CI)
7195-27-9
C13-H19-Cl-N2-O5-S2
MW 382.90, MP (dl- form) 149-150 C, (d- form) 146 C, (l- form) 146 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4907 Blood, cells	Ingestion	GC	8	a) 1.82-3.53 mg/l b) 1.49-2.51 mg/l c) 0.83-1.05 ug/ml d) 0.11-0.54 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) Peaks, 1.0-5.5 hr after 50 mg, 6 subjects b) Peaks, 2 hr after 25 mg, 2 subjects c) Peaks, 5-oxo-mefruside after 50 mg mefruside, 3 subjects d) Peaks, open acid metabolite, 5-8 hr after 50 mg mefruside, 3 subjects Healthy 21-24 yr olds, wt 61-84.5 kg, no other medication at least 1 month and fasted before dose. DRUGS; DIURETICS; ITALY; BLOOD PLASMA; ERYTHROCYTES; URINE; METABOLITES; ADULTS	Fleuren, H.L.J. Verwey-Van Wissen, C.P.W. Van Rossum, J.M. 1980 European Journal of Clinical Pharmacology 17:59-69
4908 Blood, plasma	Ingestion	GC	8	a) 68-128 ng/ml b) 76-84 ng/ml c) < 5 ng/ml	a) Not given b) 80 ng/ml c) Not applicable	a) Peaks, 1.5-5.5 hr after 50 mg b) Peaks, 2-2.5 hr after 25 mg c) 5-oxo-mefruside and its open acid analogue. Dose route and time of sample not specified. Healthy 21-24 yr olds, wt 61-84.5 kg, no other medication at least 1 month and fasted before dose. DRUGS; DIURETICS; ITALY; BLOOD PLASMA; ERYTHROCYTES; URINE; METABOLITES; ADULTS	Fleuren, H.L.J. Verwey-van Wissen, C.P.W. Van Rossum, J.M. 1980 European Journal of Clinical Pharmacology 17:59-69
4909 Urine	Ingestion	GC	8	a) 0.3-1.1% of dose b) 12.0-14.5% of dose c) 34.6-54.2% of dose	a) 0.49% of dose b) 13.1% of dose c) 46.2% of dose	a) Excretion of unchanged drug extrapolated to infinite time after 50 or 25 mg, 8 subjects b) Excretion of 5-oxo-mefruside metabolite at infinite time after 50 mg, 8 subjects c) Excretion of open acid metabolite at infinite time after 50 mg, 8 subjects Healthy 21-24 yr olds, wt 61-84.5 kg, no other medication at least 1 month and fasted before dose. DRUGS; DIURETICS; ITALY; BLOOD PLASMA; ERYTHROCYTES; URINE; METABOLITES; ADULTS	Fleuren, H.L.J. Verwey-van Wissen, C.P.W. Van Rossum, J.M. 1980 European Journal of Clinical Pharmacology 17:59-69

Methanesulfonanilide, 4'-(1-hydroxy-2-(isopropylamino)ethyl)- (8 CI)
Methanesulfonamide, N-(4-(1-hydroxy-2-((1-methylethyl)amino)ethyl)phenyl)- (9 CI)
3930-20-9
C12-H20-N2-O3-S
MW 272.36

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4910 Blood	Ingestion	GC-EC	1	Not given	40.0 ug/ml	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226
4911 Blood, plasma	Ingestion	Fluorometry		4670-450 nmoles/l	Not given	2 and 40 hr means after 320 mg/day Healthy 20-30 yr olds, within 10% of normal weight. Reduced resting and exercise heart rates. Reduced blood pressure. DRUGS; SWEDEN; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; ADULTS; BLOOD PRESSURE	Johansson, S.R. McCall, M. Wilhelmsson, C. Vedin, J.A. 1980 Clinical Pharmacology and Therapeutics 27(5):593-601
4912 Blood, plasma	Injection	Fluorometry	7	53-5% of dose	Not given	Means, 0 and 185 min after 1 mg/kg, IV. Dose preceded by stimulation of beta-receptors with isoproterenol. Healthy 22-35 yr olds. Beta-adrenergic blocking effects on heart rate, diastolic pressure, and plasma lactate, glucose, pyruvate, and free fatty acids. DRUGS; GERMANY; BLOOD PLASMA; BLOOD PRESSURE; ANTIHYPERTENSIVE AGENTS	Schnelle, K. Klein, G. Schimz, A. 1979 Journal of Clinical Pharmacology 19:516-522
4913 Blood, serum	Ingestion	Fluorometry	12	a) 1.4-1.7 mg/l b) Not given	a) 1.68 + or - 0.07 mg/l b) 1.45 + or - 0.09 mg/l	a) Peaks, 2-3 hr after 160 mg. Biexponential decline b) Mean peak, at 3.4 + or - 0.2 hr, after 160 mg with 25 mg hydrochlorothiazide. Healthy 25-57 yr olds, wt 53-86 kg. DRUGS; ANTIHYPERTENSIVE AGENTS; DIURETICS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS; ADULTS	Sundquist, H. Anttila, M. Simon, A. Peich, J.W. 1979 Journal of Clinical Pharmacology 19:557-564
4914 Brain	Ingestion	GC-EC	1	Not given	0.59 ug/g	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226

(NEXT PAGE)

Methanesulfonanilide, 4'-(1-hydroxy-2-(isopropylamino)ethyl)- (8 CI)
Methanesulfonamide, N-(4-(1-hydroxy-2-((1-methylethyl)amino)ethyl)phenyl)- (9 CI)
3930-20-9
C12-H20-N2-03-S
MW 272.36

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4915 Heart	Ingestion	GC-EC	1	Not given	42.7 ug/g	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226
4916 Kidney	Ingestion	GC-EC	1	Not given	116.0 ug/g	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226
4917 Liver	Ingestion	GC-EC	1	Not given	88.0 ug/g	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226
4918 Lung	Ingestion	GC-EC	1	Not given	59.7 ug/g	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226

(NEXT PAGE)

Methanesulfonanilide, 4'-(1-hydroxy-2-(isopropylamino)ethyl)- (8 CI)
Methanesulfonamide, N-(4-(1-hydroxy-2-((1-methylethyl)amino)ethyl)phenyl)- (9 CI)
3930-20-9
C12-H20-N2-O3-S
MW 272.36

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4919 Urine	Ingestion	GC-EC	1	Not given	415.7 ug/ml	Autopsy, after 3.2 g 47 yr old subject Miotic, agitated. Convulsions, bradycardia, abnormal ECG, reduced blood pressure, cardiac arrest, fibrillation, death. ANTIHYPERTENSIVE AGENTS; SUICIDE; ITALY; DRUG ABUSE; AUTOPSIES; MEASUREMENT METHODS; BRAIN; HEART; LUNGS; LIVER; KIDNEYS; BLOOD; URINE; CASE HISTORIES	Montagna, M. Groppi, A. 1980 Archives of Toxicology 43:221-226
4920 Urine	Ingestion	Fluorometry	12	Not given	70% of dose	72 hr cumulative excretion after 160 mg. Slightly higher values with 25 mg hydrochlorothiazide. Healthy 25-57 yr olds, wt 53-86 kg. DRUGS; ANTIHYPERTENSIVE AGENTS; DIURETICS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS; ADULTS	Sundquist, H. Anttila, M. Simon, A. Reich, J.W. 1979 Journal of Clinical Pharmacology 19:557-564

Morphinan-3-ol, 17-methyl-
77-07-6
C17-H23-N-O
MW 257.38, MP 198-199 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4921 Bile	Ingestion	TLC	1	Not given	24.0 ug/ml	41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104
4922 Blood	Ingestion	TLC	1	Not given	2.7 ug/ml	Diazepam also detected. 41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobronchial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104

(NEXT PAGE)

Morphinan-3-ol, 17-methyl-
77-07-6
C17-H23-N-O
MW 257.38, MP 198-199 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4923 Brain	Ingestion	TLC	1	Not given	1.8 ug/g	41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104
4924 Kidney	Ingestion	TLC	1	Not given	3.4 ug/g	41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104
4925 Liver	Ingestion	TLC	1	Not given	5.4 ug/g	Diazepam also detected. 41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid into tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104
4926 Lung	Ingestion	TLC	1	Not given	17.0 ug/g	41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, R.G. 1977 Journal of Analytical Toxicology 1:103-104

(NEXT PAGE)

Morphinan-3-ol, 17-methyl-
77-07-6
C17-H23-N-O
MW 257.38, MP 198-199 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4927 Urine	Ingestion	TLC	1	Not given	2.3 ug/ml	41 yr old, ht 160 cm, wt 61.23 kg. California. Moderate amount of frothy hemorrhagic fluid in tracheobroncial tree, moderate pulmonary edema and minimal emphysema, vascular engorgement of liver, spleen, kidneys, medulla, and spinal cord. DRUGS; BLOOD; LIVER; BRAIN; LUNGS; KIDNEYS; URINE; BILE; CASE HISTORIES; DRUG ABUSE; CALIFORNIA; SUICIDE	Turner, J.E. Richards, P.G. 1977 Journal of Analytical Toxicology 1:103-104

Morphinan-3,14-diol,17-(cyclobutylmethyl)- (9 CI)
42408-82-2
C21-H29-N-O2
MW 327.51

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4928 Blood, plasma	Injection Ingestion	HPLC	6	a) 0.15-1.4 ng/ml b) 0.75-2.1 ng/ml c) 0.14-0.49 ng/ml d) 0.19-1.0 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) After 1 mg as tartrate, IV b) After 2 mg as tartrate, IM c) Hydroxybutorphanol (metabolite) after 1 mg as tartrate, IV d) Hydroxybutorphanol (metabolite) after 2 mg as tartrate, IM Labelled doses Estimated from graph Healthy 22-28 yr olds, wt 56-86 kg, Canada CANADA; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Gaver, R.C. Vasiljev, M. Wong, H. Monkovic, I. Swigor, J.E. Van Harken, D.R. Smyth, R.D. 1980 Drug Metabolism and Disposition 8(4):230-235
4929 Urine	Injection	HPLC	a) 4 b) 6	a) 32-68% b) 28-67%	a) Not given b) Not given	a) 10 and 96 hr after 1 mg as tartrate, IV b) 10 and 120 hr after 2 mg as tartrate, IM Labelled doses Mean cumulative percentage of radioactivity Healthy 22-28 yr olds, wt 56-86 kg, Canada CANADA; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Gaver, R.C. Vasiljev, M. Wong, H. Monkovic, I. Swigor, J.E. Van Harken, D.R. Smyth, R.D. 1980 Drug Metabolism and Disposition 8(4):230-235

Morphinan-3,6alpha-diol, 7,8-didehydro-4,5alpha-epoxy-17-methyl- (8 CI)
Morphinan-3,6-diol, 7,8-didehydro-4,5-epoxy-17-methyl- (5alpha,6alpha)- (9 CI)
57-27-2
C17-H19-N-03
MW 285.33, MP 197 C (metastable phase), 258 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4930 Blood, plasma	Injection	RIA	8	a) 320-700 ng/ml b) 51-62 ng/ml	a) 555 ng/ml b) 56 ng/ml	a) Peaks, immediately after 10 mg IV to 4 subjects, estimated from graphs b) Peaks 15 mn after 10 mg IM to 5 subjects Administered as sulfate. Healthy 26-32 yr olds, wt 62-100 kg. Unpleasant, dysphoric sensation persisting 4-6 hr after infusion. 1 subject nauseated and vomiting. Effects less severe after intramuscular injection. DRUGS; METABOLISM; BLOOD PLASMA; MASSACHUSETTS; COMPARATIVE EVALUATIONS	Stanski, D.R. Greenblatt, D.J. Lowenstein, E. 1978 Clinical Pharmacology and Therapeutics 24(1):52-59
4931 Blood, plasma	Injection	GC-EC	30	a) 1,900-3 ng/ml b) 60.3-72.2 ng/ml	a) Not given b) 64.5 ng/ml	a) 2.5 and 8 hr after 0.15 mg/kg single dose before surgery to 2 groups, ages 1-6 yr and 7-15 yr. No effect of age b) Minimum concentration necessary for suppressing clinical signs of pain during surgery, ages as in a) and ages 0-1 yr Data available for multiple doses. Swedish children, ages 1-15 yr Analgesic effect disappeared at 46.3-82.7 ng/ml. DRUGS; DRUG THERAPY; ANALGESICS; SURGERY; CHILDREN; SWEDEN; BLOOD PLASMA; AGE	Dahlstrom, B. Bolme, P. Feychting, H. Noack, G. Paalzow, L. 1979 Clinical Pharmacology and Therapeutics 26(3):354-365

Nicotine (8 CI)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- (9 CI)
54-11-5
C10-H14-N2
MW 162.23, MP <-80 C, BP 247 C (partial decomp) at 745 mm Hg, 123-125 C at 17 mm Hg, VP 1 mm Hg at 61.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4932 Blood	Inhalation	Radiometry	a) 6 b) 1	a) 0-66.4 ug/l b) 1.5-14.4 ug/l	a) 21.18 ug/l b) Not applicable	a) Peaks, at 14-22 min after smoking small cigar b) Mean, 14C-cotinine level 10-60 min after smoking began. Exceeded nicotine levels at 30 and 40 min Data on urine and feces levels also presented. 29-60 yr old habitual smokers. Abstained from smoking from midnight prior to study. 0-13 beats/min increase in heart rate. Carboxyhemoglobin increased from 2.9% to 4.42%. NICOTINE; ALKALOIDS; SMOKING; ADULTS; UNITED KINGDOM; BLOOD; METABOLISM; METABOLITES	Armitage, A. Dollery, C. Houseman, T. Fohner, E. Lewis, P.J. Turner, D. 1978 Clinical Pharmacology and Therapeutics 23(2):143-151

(NEXT PAGE)

Nicotine (8 CI)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- (9 CI)
54-11-5
C10-H14-N2
MW 162.23, MP <-80 C, BP 247 C (partial decomp) at 745 mm Hg, 123-125 C at 17 mm Hg, VP 1 mm Hg at 61.8 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4933 Blood, plasma	Inhalation	GC	330	25-444 nmoles/l	203 nmoles/l	2 min after smoking cigarette Heavy smokers, United Kingdom. SMOKING; NICOTINE; UNITED KINGDOM; BLOOD PLASMA; TOBACCOS; HEMOGLOBINS; COMPARATIVE EVALUATIONS; SEX; HEALTH HAZARDS	Russell, M.A.H. Jarvis, M. Iyer, R. Feyerabend, C. 1980 British Medical Journal 280(6219):972-975
4934 Blood, plasma	Inhalation	RIA	11	a) Not applicable b) Not applicable	a) 6.5 + or - 1.8 ng/ml b) 9.9 + or - 2.2 ng/ml	a) Before smoking b) After smoking 3 cigarettes for 30 min Habitual smokers, ages 20-39 yr, who had not smoked since previous evening. SMOKING; NICOTINE; TOBACCOS; JAPAN; URINE; ADULTS; BLOOD PLASMA	Matsukura, S. Sakamoto, N. Takahashi, K. Matsuyama, H. Muranaka, H. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):549-554
4935 Blood, plasma	Inhalation	GC	10	a) 98.6-286.7 nmol/l b) 52.4-326.8 nmol/l c) 24.7-77.1 nmol/l	a) 185.6 + or - 66.0 nmol/l b) 180.0 + or - 90.0 nmol/l c) 52.4 + or - 17.3 nmol/l	a) Smoking usual brand, 10.7 cigarettes/5 hr, mean of 2 days b) Smoking high nicotine brand, 6.7 cigarettes/5 hr c) Smoking low nicotine brand, 12.5 cigarettes/5 hr Determinations after 5 hr smoking Smokers, England UNITED KINGDOM; ADULTS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; NICOTINE; SMOKING; TOBACCOS	Russell, M.A.H. Wilson, C. Patel, U.A. Feyerabend, C. Cole, P.V. 1975 British Medical Journal 2(5968):414-416
4936 Blood, plasma	Inhalation	RIA	4	a) 10-30 ng/ml b) 6-22 ng/ml	a) 14.25 + or - 6.13 ng/ml b) 13.0 + or - 7.07 ng/ml	a) 9 days on 22.5 + or - 6.34 cigarettes/day, 0.81 mg nicotine each b) 9 days on 27.25 + or - 10.5 cigarettes/day, 0.60 mg nicotine each 20-30 yr old smokers in good health, maintaining normal smoking habits SMOKING; NICOTINE; BLOOD PLASMA; TOBACCOS; COMPARATIVE EVALUATIONS; ADULTS; HEMOGLOBINS; URINE	Fill, P. Marquardt, H. 1980 Clinical Pharmacology and Therapeutics 27(5):652-658
4937 Blood, plasma	Inhalation	GC	150	3-63 ng/ml	19.5 ng/ml	Sampled 2 min after smoking (0.1-1.4 mg nicotine per cigarette) Adult volunteer smokers NEW YORK; ADULTS; BLOOD PLASMA; IN VIVO ANALYSIS; NICOTINE; SMOKING	Kogan, M.J. Verebey, K. Jaffee, J.H. Mule, S.J. 1981 Journal of Forensic Sciences 26(1):6-11
4938 Urine	Inhalation	RIA	11	a) Not given b) Not given	a) 252 + or - 147 ng/15 min b) 2587 + or - 1224 ng/15 min	a) Before smoking b) After smoking 3 cigarettes in 30 min Data also for effect of urinary pH. Habitual smokers, ages 20-39 yr, who had not smoked since previous evening. SMOKING; NICOTINE; TOBACCOS; JAPAN; URINE; ADULTS; BLOOD PLASMA	Matsukura, S. Sakamoto, N. Takahashi, K. Matsuyama, H. Muranaka, H. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):549-554

(NEXT PAGE)

Nicotine (8 CI)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- (9 CI)
54-11-5
C10-H14-N2
MW 162.23, MP <-80 C, BP 247 C (partial decomp) at 745 mm Hg, 123-125 C at 17 mm Hg, VP 1 mm Hg at 61.8 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4939 Urine	Inhalation	RIA	4	a) 1.0-2.8 mg/24 hr b) 0.6-2.9 mg/24 hr	a) 1.7 + or - 0.84 mg/24 hr b) 1.78 + or - 1.02 mg/24 hr	a) 9 days on 22.5 + or - 6.34 cigarettes/day, 0.81 mg nicotine each b) 9 days on 27.25 + or - 10.5 cigarettes/day, 0.60 mg nicotine each 20-30 yr old smokers in good health, maintaining normal smoking habits SMOKING; NICOTINE; BLOOD PLASMA; TOBACCOS; COMPARATIVE EVALUATIONS; ADULTS; HEMOGLOBINS; URINE	Hill, P. Marquardt, H. 1980 Clinical Pharmacology and Therapeutics 27(5):652-658
4940 Urine	Inhalation	GC	58	Not given	133 + or - 19 (SE) ug/100 ml	Random samples. No correlation with declared number of cigarettes smoked Regular smokers attending infarction clinic, U.K. ADULTS; HEART DISEASES; URINE; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; NICOTINE; METABOLITES; SMOKING	Wilcox, R.G. Hughes, J. Roland, J. 1979 British Medical Journal 2(6197):1026-1028

Nitric acid, gallium salt
13498-90-1
Ga.3H-N-O3
MW 138.76, MP 110 C (decomp), BP decomp to Ga2O3 at 200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4941 Blood, plasma	Injection	Colorimetry	a) 2 b) 2	a) 68-9.0 ug/ml b) 30-2.3 ug/ml	a) Not given b) Not given	a) Dose of 600 mg/sq m, IV b) Dose of 300 sq m, IV Initial measurement and 24 hr after dose Estimated from graph 25-77 yr old cancer patients, wt 57.3-80.9 kg DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; METALS; GALLIUM; NITRATES; DISEASES	Hall, S.W. Yeung, K. Benjamin, R.S. Stewart, D. Valdivieso, M. Bedikian, A.Y. Loo, T.L. 1979 Clinical Pharmacology and Therapeutics 25(1):82-87
4942 Urine	Injection	Colorimetry	8	15.0-71.9% of dose	Not given	24 hr cumulative excretion after 300-600 mg/sq m 25-77 yr old cancer patients, wt 57.3-80.9 kg DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; METALS; GALLIUM; NITRATES; DISEASES	Hall, S.W. Yeung, K. Benjamin, R.S. Stewart, D. Valdivieso, M. Bedikian, A.Y. Loo, T.L. 1979 Clinical Pharmacology and Therapeutics 25(1):82-87

Nitrogen
7727-37-9
N
AtW 14.0067, MP -210.01 C, BP -195.79 C, VP 34 atm at -146.9 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4943 Urine	Ingestion	Chem	10	Not given	7.6 + or - 1.6 g/day	Expressed as mean of 58.3 g protein/day. Data from 47 7-day experimental periods. University students and employees, a nurse and a teacher. Nulliparous, ages 19-29 yr. All subjects in positive nitrogen balance. TENNESSEE; URINE; IRON; CALCIUM; MAGNESIUM; MINERALS; PHOSPHORUS; DIETS; MINERAL METABOLISM; PREGNANCY	Ashe, J.R. Schofield, F.A. Gram, M.R. 1979 American Journal of Clinical Nutrition 32:286-291

Nitroglycerin (8 CI)
1,2,3-Propanetriol, trinitrate (9 CI)
55-63-0
C3-H5-N3-09
MW 227.09, MP 2.8 C (labile), 13.5 C (stable)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4944 Blood	Ingestion	GC-EC	a) 10 b) 10	a) 0-0.3 ng/ml b) 0.1-10.0 ng/ml	a) Not applicable b) Not applicable	a) 0.5-4 hr after 7.5 mg sustained-release dose. None detected at 5 hr b) 0.5-4 hr after 10 mg sustained release dose. None detected at 5 hr Cardiac patients ISRAEL; DISEASES; HEART DISEASES; BLOOD; DRUG THERAPY; DRUGS	Givant, Y. Sulman, F.G. 1978 Experientia 34(5):643-644

Oxytocin
50-56-6
C43-H66-N12-O12-S2
MW 1007.23

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4945 Blood, plasma	Ingestion	RIA	13	a) 1.5-106.9 pg/ml b) 27.5-181.3 pg/l c) 0.2-9.9 pg/ml d) 24.5-31.5 pg/ml	a) Not given b) Not given c) Not given d) Not given	a) Before pitocin, 9 pregnant women b) 20-30 min after 200-400 units pitocin, 7 pregnant women c) 10-120 min after 200 units pitocin, 4 men d) 20-100 min after 400 units pitocin, 4 men c) and d) range of means Women between 35 and 40 wk gestation. Healthy 20-59 yr old men, wt 55-70 kg DRUGS; PREGNANCY; BLOOD PLASMA; COMPARATIVE EVALUATIONS	Dawood, M.Y. Ylikorkala, O. Fuchs, F. 1980 American Journal of Obstetrics and Gynecology 138(1):20-24

p-Acetophenetidide (8 CI)
Acetamide, N-(4-ethoxyphenyl)- (9 CI)
62-44-2
C10-H13-N-02
MW 179.21, MP 134-135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4946 Blood, plasma	Ingestion	GC/MS	10	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2,396 ng/ml b) 1,576 ng/ml c) 1,843 ng/ml d) 32 ng/ml e) 11 ng/ml f) 25 ng/ml	a) Control diet, first time - 1 hr b) Brussels sprouts and cabbage diet - 1 hr c) Control diet, after test diet - 1 hr d) Control diet, first time - 7 hr e) Brussels sprouts and cabbage diet - 7 hr f) Control diet, after test diet - 7 hr Dose was 900 mg Values also given for metabolite N-acetyl-p-aminophenol 21-32 yr olds, wt 50-79 kg, nonsmokers, fasted before and after dose. DRUGS; DIETS; BLOOD PLASMA; METABOLITES; COMPARATIVE EVALUATIONS	Pantuck, E.J. Pantuck, C.B. Garland, W.A. Min, B.H. Wattenberg, L.W. Anderson, K.E. Kappas, A. Conney, A.H. 1979 Clinical Pharmacology and Therapeutics 25(1):88-95
4947 Blood, plasma	Ingestion	HPLC	9	a) 10.2-0.17 ug/ml b) 4.5-0.11 ug/ml	a) Not applicable b) Not applicable	a) Range within 1-5 hr after 21.4 mg/kg at 6 AM b) Range within 1.5-5 hr after 21.4 mg/kg at 2 PM Monoexponential decay. Estimated from graph. Healthy 22-32 yr olds, fasted before and during experiment. No drugs 1 wk before study. DRUGS; METABOLISM; ADULTS; BLOOD PLASMA	Shively, C.A. Vesell, E.S. 1975 Clinical Pharmacology and Therapeutics 18(4):413-424
4948 Blood, plasma	Ingestion	GC	12	0.52-2.3 ug/ml	Not given	3 hr after 21 mg/kg in solution. Estimated from graph. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272
4949 Saliva	Ingestion	GC	11	0.3-1.2 ug/ml	Not given	3 hr after 21 mg/kg in solution. Monoexponential decline. Estimated from graph. Healthy adults, ages 22-30 yr. ADULTS; BLOOD PLASMA; SALIVA; ANALGESICS; ANTIPYRETICS; DRUGS; COMPARATIVE EVALUATIONS	Vesell, E.S. Passananti, G.T. Glenwright, P.A. Dvorchik, B.H. 1975 Clinical Pharmacology and Therapeutics 18(3):259-272
4950 Urine	Ingestion	HPLC	9	a) 29.3-72.8% of dose b) 42.3-83.0% of dose	a) 55.3% of dose b) 59.4% of dose	a) Dosed at 6 AM b) Dosed at 2 PM Cumulative total acetaminophen in 24-hr urines after 1350-1800 mg of phenacetin. Healthy 22-32 yr olds, fasted before and during experiment. No drugs 1 wk before study. DRUGS; METABOLISM; ADULTS; BLOOD PLASMA	Shively, C.A. Vesell, E.S. 1975 Clinical Pharmacology and Therapeutics 18(4):413-424

Phenothiazine, 10-(2-(1-methyl-2-piperidyl)ethyl)-2-(methylthio)- (8 CI)
10H-Phenothiazine, 10-(2-(1-methyl-2-piperidinyl)ethyl)-2-(methylthio)- (9 CI)
50-52-2
C21-H26-N2-S2
MW 370.56, MP 72-74 C, BP 230 C at 0.02 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4951 Blood, plasma	Ingestion	Chem Fluorometry	19	1100-4000 ng/ml	Not applicable	After increasing doses of 1-10 mg/kg over 9 wk 21-65 yr old psychiatric patients No correlation between plasma levels and clinical effects. Plasma levels correlated with dose. SWEDEN; ADULTS; NERVOUS SYSTEM DISEASES; BLOOD; BLOOD PLASMA; DRUG THERAPY; TRANQUILIZERS; COMPARATIVE EVALUATIONS; DRUGS	Bergling, R. Mjorndal, T. Oreland, L. Papp, M. Wold, S. 1975 Journal of Clinical Pharmacology 15:178-186

Phenothiazine, 2-chloro-10-(3-(dimethylamino)propyl)- (8 CI)
10H-Phenothiazine-10-propanamine, 2-chloro-N,N-dimethyl- (9 CI)
50-53-3
C17-H19-Cl-N2-S
MW 318.89

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4952 Blood, plasma	Ingestion	GC-EC	a) 10 b) 4 c) 4	a) Not given b) Not given c) Not given	a) 8.0 + or - 2.3 ng/ml b) 13.5 + or - 2.7 ng/ml c) 20.3 + or - 2.3 ng/ml	a) 0.8-3.0 mg/kg/day b) 3.1-6.0 mg/kg/day c) 6.1-11.0 mg/kg/day 8-15 yr olds with psychosis, mental retardation or schizophrenia Side effects: salivary drooling, drowsiness, urinary incontinence, mild seizures, sedation, withdrawal, mild tremors, rigidity. Improvement in target symptoms at plasma levels > 30 ng/ml (optimum 40-80 ng/ml). DRUGS; DRUG THERAPY; BLOOD PLASMA; CHILDREN; NEW YORK; MENTAL RETARDATION; NERVOUS SYSTEM DISEASES; NEUROLOGIC MANIFESTATIONS	Rivera-Calimlim, L. Griesbach, P.H. Perlmutter, R. 1979 Clinical Pharmacology and Therapeutics 26(1):114-121

Phthalazine, 1-hydrazino- (8 CI)
1(2H)-Phthalazinone, hydrazone (9 CI)
86-54-4
C8-H8-N4
MW 160.18, MP 172-173 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4953 Blood, plasma	Injection	HPLC	2	a) 0.02-0.9 uM b) 0.02-2.8 uM c) 0.8-1.9 uM d) 0.6-1.2 uM	a) Not given b) Not given c) Not given d) Not given	a) Rapid acetylator b) Slow acetylator c) Hydralazine pyruvic acid hydrazone (metabolite), rapid acetylator d) Hydralazine pyruvic acid hydrazone (metabolite), slow acetylator After 0.3 mg/kg IV as hydrochloride Estimated from graph Hypertensives in TX TEXAS; ADULTS; HYPERTENSION; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Ludden, T.M. Shepherd, A.M.M. McNay, J.L. Lin, M-S. 1980 Clinical Pharmacology and Therapeutics 28(6):736-742

(NEXT PAGE)

Phthalazine, 1-hydrazino- (8 CI)
1(2H)-Phthalazinone, hydrazone (9 CI)
86-54-4
C8-H8-N4
MW 160.18, MP 172-173 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4954 Urine		GC HPLC	a) 29 b) 18	a) 8.0-14.7% b) 10.4-19.1%	a) Not given b) Not given	a) 24 hr excretions (including metabolites) after 50-150 mg/day b) 24 hr excretions (including metabolites) after 200-300 mg/day Slow and rapid acetylators Hypertensives, United Kingdom ADULTS; HYPERTENSION; URINE; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; METABOLITES	Timbrell, J.A. Harland, S.J. Facchini, V. 1981 Clinical Pharmacology and Therapeutics 29(3):337-343

Piperazine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-(2-furoyl)- (8 CI)
Piperazine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-(2-furanylcarbonyl)- (9 CI)
19216-56-9
C19-H21-N5-O4
MW 382.42, MP 278-280 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4955 Blood, plasma		HPLC Fluorometry	17	a) 8.6-3.2 ng/ml b) 4.3-1.9 ng/ml c) 12.3-1.3 ng/ml d) 6.7-0.8 ng/ml e) 42-18 ng/ml f) 34-4 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 5 controls, 3 and 8 hr after 1-2 mg, single dose. 5.8 ng/ml at 1 hr b) 12 renal patients, 3 and 8 hr after 1-2 mg, single dose. 4.1 ng/ml at 1 hr c) Controls, 1 and 10 hr after 3-8 mg/day at steady state. 1.8 ng/ml at 0-hr d) Renal patients, 1 and 10 hr after 3-8 mg/day at steady state. 1.2 ng/ml at 0-hr e) Controls, 1 and 10 hr after 9-20 mg/day at steady state, 31 ng/ml at 0-hr f) Renal patients, 1 and 10 hr after 9-20 mg/day at steady state. 19 ng/ml at 0-hr c)-d), 13 subjects. Estimated from graphs. 21-67 yr olds with hypertension and varying degrees of renal function. Lowered blood pressure DRUGS; DRUG THERAPY; KIDNEY DISEASES; HYPERTENSION; BLOOD PRESSURE; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS	Lowenthal, D.T. Robbs, D. Affrime, M.B. Twomey, T.M. Martinez, E.W. Onesti, G. 1980 Clinical Pharmacology and Therapeutics 27(6):779-783
4956 Blood, plasma	Ingestion	HPLC	7	a) Not given b) Not given c) Not given	a) 4.0 + or - 1.4 ng/ml b) 4.8 + or - 0.8 ng/ml c) 2.7 + or - 0.7 ng/ml	a) 1 mg dose b) 1 mg dose + 80 mg propranolol c) 1 mg dose + 100 mg primidolol Peaks Healthy, normotensive 25-35 yr olds ADULTS; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; DRUG INTERACTION	Elliott, H.L. McLean, K. Sumner, D.J. Meredith, P.A. Reid, J.L. 1981 Clinical Pharmacology and Therapeutics 29(3):303-309

Piperidine, 1-(1-phenylcyclohexyl)-
77-10-1
C17-H25-N
MW 243.39, MP 46 C, BP 135-137 C at 1 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4957 Blood		GC	7	0.008-2.100 ug/ml	Not given	Dose unknown Autopsies, 18 yr old woman, 17-26 yr old men. Death phencyclidine-related but not attributed to drug. 3 homicides, 2 drug overdoses, 1 car accident, 1 suicide. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE; AUTOPSIES	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237
4958 Blood, plasma		GC	15	10-812 ug/l	135 ug/l	Nonfatal intoxications DRUGS; DRUG ABUSE; IN VITRO ANALYSIS; BLOOD; BLOOD PLASMA	Bailey, D.N. Guba, J.J. 1980 Clinical Chemistry 26:837-840
4959 Blood, whole		GC/MS	50	10-180 ng/ml	73.3 ng/ml	Intoxicated drivers, ages 17-50 yr. Staggering, thick slurred speech, bloodshot eyes, glassy stare, nystagmus, non-combative behavior. DRUGS; DRUG ABUSE; BLOOD; CASE HISTORIES; HEALTH HAZARDS; FORENSIC MEDICINE; PSYCHOTROPIC DRUGS	Clardy, D.O. Cravey, R.H. MacDonald, B.J. Wiersema, S.J. Pearce, D.S. Ragle, J.L. 1979 Journal of Analytical Toxicology 3:238-241
4960 Brain		GC	5	Not detected-12.900 ug/g	Not given	Dose unknown Autopsies, 18 yr old woman, 17-24 yr old men. Death phencyclidine-related but not attributed to drug. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE; AUTOPSIES	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237
4961 Heart		GC	2	0.050-0.060 ug/g	Not given	Myocardium Dose unknown Autopsies, 17 and 24 yr old men. Death phencyclidine-related but not attributed to drug. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE; AUTOPSIES	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237
4962 Kidney		GC	3	0.060-0.190 ug/g	Not given	Dose unknown Autopsies, 18 yr old woman, 17 and 24 yr old men. Death phencyclidine-related but not attributed to drug. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE; AUTOPSIES	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237

(NEXT PAGE)

Piperidine, 1-(1-phenylcyclohexyl)-
77-10-1
C17-H25-N
MW 243.38, MP 46 C, BP 135-137 C at 1 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8963 Liver		GC	6	0.028-5.100 ug/g	Not given	Dose unknown Autopsies, 18 yr old woman, 17-26 yr old men. Death phencyclidine-related but not attributed to drug. 3 homicides, 2 drug overdoses, 1 car accident, 1 suicide. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE; AUTOPSIES	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237
8964 Lung		GC	4	0.090-0.640 ug/g	Not given	Dose unknown Autopsies, 18 yr old woman, 17-26 yr old men. Death phencyclidine-related but not attributed to drug. CALIFORNIA; CADAVERS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; BIOACCUMULATION; DRUG ABUSE; FORENSIC MEDICINE	Bailey, D.N. Shaw, R.F. Robinson, P.T. Guba, J.J. 1979 Journal of Analytical Toxicology 3:235-237

Piperidine, 3-((1,3-benzodioxol-5-yloxy)methyl)-4-(4-fluorophenyl)-, trans-(-)-
61869-08-7
C19-H20-F-N-O3
MW 329.39

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
8965 Blood, plasma	Ingestion	GC	6	a) 4-11 ng/ml b) 19-47 ng/ml c) 55-106 ng/ml d) <3-8 ng/ml e) 8-37 ng/ml f) 35-86 ng/ml	a) 7.67 ng/ml b) 33.7 ng/ml c) 72.0 ng/ml d) Not given e) Not given f) Not given	a) Peaks, 0.38 mg/kg b) Peaks, 0.77 mg/kg c) Peaks, 1.14 mg/kg d) Steady state, 0.14-0.18 mg/kg/day e) Steady state, 0.34-0.45 mg/kg/day f) Steady state, 0.68-0.89 mg/kg/day, (2 subjects) Single-dose study (a-c), 3 cases, peaks at 2-8 hr. Multiple-dose study (d-f), 3 cases, steady state reached < 1 wk. Healthy 25-56 yr olds, no other drugs, fasted overnight. All doses reduced blood serotonin up to 65%. One had influenza-like symptoms on 50- and 75-mg doses. Multiple dosing: fatigue, nausea, diarrhea. DRUGS; BLOOD PLASMA; DENMARK; ANTIDEPRESSIVE AGENTS; METABOLISM	Lund, J. Lomholt, B. Fabricius, J. Christensen, J.A. Bechgaard, E. 1979 Acta Pharmacologica et Toxicologica 44:289-295

Piperidine, 3-((4-methoxyphenoxy)methyl)-1-methyl-4-phenyl-, (3R-trans)-
59859-58-4
C20-H25-N-O2
MW 311.46

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4966 Blood, plasma	Ingestion Injection	GC	a) 1 b) 1	a) 40-3.5 ng/ml b) 55-5.8 ng/ml	a) Not applicable b) Not applicable	a) 5 min and 27 hr after 20 min IV of 28.5 mg. Continuous bierponential decline b) 3 and 50 hr after 600 mg, oral. Initial value, 41 ng/ml at 0.5 hr. Healthy volunteers on no other drugs. Vomiting 1.5 hr after 600 mg dose. DRUGS; METABOLISM; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLITES; URINE	Lund, J. Christensen, J.A. Bechgaard, E. Nolander, L. Larsson, H. 1979 Acta Pharmacologica et Toxicologica 44:177-184
4967 Urine	Ingestion	Radiometry	2	a) 61-81% of radioactivity b) 3-7.2 mg c) Not given	a) Not given b) Not given c) 0.042 mg	a) Cumulative excretion up to 50 hr after 600 mg of 14C-labelled drug. Most as metabolites. Amount independent of urine acidity (pH 4.8-7.9) b) As fenoxetine, pH 4.8-5.3 c) As fenoxetine, pH 7.2-7.9. Healthy 37 yr olds, no other drugs. Vomiting 1.5 hr after 600 mg dose. DRUGS; METABOLISM; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLITES; URINE	Lund, J. Christensen, J.A. Bechgaard, E. Nolander, L. Larsson, H. 1979 Acta Pharmacologica et Toxicologica 44:177-184

Platinum, diamminedichloro-, cis- (8 CI)
Platinum, diamminedichloro-, (SP-4-2)- (9 CI)
15663-27-1
C12-H6-N2-Pt
MW 300.05

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4968 Blood, plasma	Injection	AAS	8	a) 30.4-13.5 umoles/l b) Not given	a) Not given b) 1.6 + or - 0.6 umoles/l	a) 1 and 8 hr after start of 1-hr IV of 70 mg/sq m. Biphasic decline b) 21 days after 1-hr IV of 70 mg/sq m Non-protein-bound Pt < 0.5 umoles/l by 45 hr Patients with breast and ovarian carcinoma, with normal renal and hepatic function. DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; PLATINUM	Gormley, P.E. Bull, J.M. LeRoy, A.F. Cysyk, R. 1979 Clinical Pharmacology and Therapeutics 25(3):351-357
4969 Blood, plasma	Injection	AAS	1	Not applicable	8.69 ug/ml	At end of 15 min IV. Dose, 175 mg (100 mg/sq m). Biexponential decline. 44 yr old with ovarian adenocarcinoma. DRUGS; CHEMOTHERAPY; PLATINUM; BLOOD PLASMA; NEOPLASMS; ADULTS; CARCINOMAS	Vermorken, J.B. van der Vijgh, W.J.F. Pinedo, H.M. 1980 Research Communications in Chemical Pathology and Pharmacology 28(2):319-328

(NEXT PAGE)

Platinum, diamminedichloro-, cis- (8 CI)
Platinum, diamminedichloro-, (SP-4-2)- (9 CI)
15663-27-1
Cl2-H6-N2-Pt
MW 300.05

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4970 Urine	Injection	AAS	8	2-23.5% of dose	Not given	Mean cumulative excretion 0.5-24 hr after 1 hr IV of 70 mg/sq m. 14.8% excreted by 2 hr. Patients with breast and ovarian carcinoma, with normal renal and hepatic function. DRUGS; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; URINE; PLATINUM	Gormley, P.E. Bull, J.M. LeRoy, A.F. Cysyk, R. 1979 Clinical Pharmacology and Therapeutics 25(3):351-357
4971 Urine	Injection	CC AAS	1	21-0 ug/ml	Not given	5 and 50 hr after start of 6 hr IV of 131 mg (75 mg/sq m). Initial measurement, 3.4 ug/ml. Estimated from graph. Testicular cancer patient, Maryland. PLATINUM; METALS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; URINE; MARYLAND; MEASUREMENT METHODS	LeRoy, A.F. Wehling, M. Gormley, P. Egorin, M. Ostrow, S. Bachur, N. Wiernik, P. 1980 Cancer Treatment Reports 64(1):123-132

Potassium
7440-09-7
K
AtW 39.098, MP 63.2 C, BP 765.5 C, VP 100 mm Hg at 590 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4972 Urine	Ingestion	Flame photometry	12	a) 12.3-56.0 mEq b) 19.6-61.9 mEq c) 41.6-65.1 mEq d) 41.6-66.7 mEq	a) 43.0 + or - 11.4 mEq b) 40.6 + or - 11.4 mEq c) 50.5 + or - 7.6 mEq d) 53.3 + or - 7.5 mEq	a) Elixir b) Capsule c) Tablet d) 3 control days Cumulative 24 hr excretions, after 80 mEq. Elixir given as three 26.6 mEq doses, 6 hr intervals. Capsule and tablet given as single dose. 12 healthy 19-55 yr olds, within 10% of ideal weight, MO. Some stomach pain, abdominal cramps, nausea. Fewer side effects with capsule. MISSOURI; ADULTS; URINE; DRUGS; COMPARATIVE EVALUATIONS; POTASSIUM	Arnold, J. Jacob, J.T. Riley, B. 1980 Journal of Pharmaceutical Sciences 69(12):1416-1418

Pregna-1,4-diene-3,20-dione, 11beta,17,21-trihydroxy- (8 CI)
Pregna-1,4-diene-3,20-dione, 11,17,21-trihydroxy-, (11beta)- (9 CI)
50-24-8
C21-H28-O5
MW 360.44, MP 240-241 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4973 Blood, serum	Injection Ingestion	RIA	a) 12 b) 3 c) 4 d) 4	a) Not given b) Not given c) Not given d) 2,200-90 ng/ml	a) 198 + or - 9 ng/ml b) 299 + or - 27 ng/ml c) 761 + or - 177 ng/ml d) Not applicable	a) Mean peak after 10 mg, oral b) Mean peak after 50 mg, oral c) Mean peak after 100 mg, oral d) Range of means 0.5 and 12 hr after 100 mg, IV Healthy Australian volunteers or patients on glucocorticoids, no hepatic, renal, or cardiac disease, fasted overnight. DRUGS; GLUCOCORTICOIDS; BLOOD SERUM; AUSTRALIA; METABOLITES	Tanner, A. Pochner, F. Caffin, J. Halliday, J. Powell, L. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):571-578

Pregna-1,4-diene-3,20-dione, 6alpha-fluoro-11beta,16alpha,17,21-tetrahydroxy-, cyclic 16,17-acetal with acetone (8 CI)
Pregna-1,4-diene-3,20-dione, 6-fluoro-11,21-dihydroxy-16,17-((1-methylethylidene)bis(oxy))-, (6alpha,11beta,16alpha)- (9 CI)
3395-03-3
C24-H31-F-O6
MW 434.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4974 Blood, plasma	Injection Ingestion	Radiometry	3	a) 2.32-3.49 ng/ml b) 4.2-4.74 ng/ml c) 0.35-1.85 ng/ml d) 3.86-4.59 ng/ml	a) 2.90 ng/ml b) 4.45 ng/ml c) 0.85 ng/ml d) 4.21 ng/ml	a) Flunisolide, IV b) 6Beta-OH metabolite after flunisolide, IV c) Flunisolide, Oral d) 6Beta-OH metabolite after flunisolide, oral 0-8 hr average level (area under the curve/t) after 2 mg. Healthy men, 68.2-95.9 kg, no other medication > 2 wk. DRUGS; ANTI-INFLAMMATORY AGENTS; CORTICOSTEROIDS; METABOLISM; METABOLITES; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; ADULTS	Chaplin, M.D. Rooks, W., II Swenson, E.W. Cooper, W.C. Nerenberg, C. Chu, N.I. 1980 Clinical Pharmacology and Therapeutics 27(3):402-413

Pregna-1,4-diene-3,20-dione, 9-fluoro-11beta,17,21-trihydroxy-16alpha-methyl- (8 CI)
Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17,21-trihydroxy-16-methyl-, (11beta,16alpha)- (9 CI)
50-02-2
C22-H29-F-O5
MW 392.45, MP 262-264 C, 268-271 C [Arth patent]

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4975 Blood, plasma	Ingestion	RIA	11	a) 0.5-4.4 ng equiv/ml b) 15.5-35 ng/ml c) 185-38 ng/ml d) 63-40 ng/ml	a) Not given b) Not applicable c) Not applicable d) Not applicable	a) Pretreatment values b) 10 min and 1.5 hr after eight 1.5-mg tablets. Final value, 35 ng/ml at 10 hr c) 10 min and 10 hr after 10-30 min IV of 12 mg d) 0.5 and 10 hr after 12 mg as elixir. Initial value, 63 ng/ml at 10 min Estimated from graph. Normal 18-26 yr olds, fasted overnight. DRUGS; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE; ADULTS; METABOLISM	Duggan, D.E. Yeh, K.C. Natalia, N. Ditzler, C.A. McMahon, F.G. 1975 Clinical Pharmacology and Therapeutics 18(2):205-210

(NEXT PAGE)

Pregna-1,4-diene-3,20-dione, 9-fluoro-11beta,17,21-trihydroxy-16alpha-methyl- (8 CI)
Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17,21-trihydroxy-16-methyl-, (11beta,16alpha)- (9 CI)
50-02-2
C22-H29-F-05
MW 392.45, MP 262-264 C, 268-271 C [Arth patent]

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4976 Urine	Injection Ingestion	Radiometry	12	a) 638-2,560 ug b) 170-1,980 ug c) 585-2,055 ug d) 20-1,047 ug e) 447-1,405 ug f) 103-1,443 ug	a) 1,269 ug b) 863 ug c) 1,044 ug d) 427 ug e) 932 ug f) 350 ug	a) Free drug, after 10-30 min IV of 12 mg b) Conjugate, after 10-30 min IV of 12 mg c) Free drug, after 12 mg as elixir d) Conjugate, after 12 mg as elixir e) Free drug, after 12 mg as tablets f) Conjugate, after 12 mg as tablets 48 hr cumulative excretions. Normal 18-26 yr olds, fasted overnight. DRUGS; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE; ADULTS; METABOLISM	Duggan, D.E. Yeh, K.C. Matalia, N. Ditzler, C.A. McMahon, F.G. 1975 Clinical Pharmacology and Therapeutics 18(2):205-210

Pregna-1,4-diene-3,20-dione, 9-fluoro-11beta,17,21-trihydroxy-16alpha-methyl-, 21-(dihydrogen phosphate) (8 CI)
Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17-dihydroxy-16-methyl-21-(phosphonooxy)-, (11beta,16alpha)- (9 CI)
312-93-6
C22-H30-F-O8-P
MW 472.48

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4977 Blood, plasma	Injection	RIA	a) 8 b) 8 c) 8 d) 9	a) 22.7-78.0 ng/ml b) 77.0-158 ng/ml c) 157-207 ng/ml d) 645-1,217 ng/ml	a) 49.1 ng/ml b) 117 ng/ml c) 187 ng/ml d) 896 ng/ml	a) 0.05 mg/kg dose b) 0.1 mg/kg dose c) 0.20 mg/kg dose d) 1.0 mg/kg dose Y-intercepts of semi-log plots of dexamethasone alcohol concentration vs time after indicated doses. Normal 18-26 yr olds. DRUGS; GLUCOCORTICOIDS; STEROIDS; BLOOD PLASMA; ADULTS; METABOLISM; METABOLITES	Hare, L.E. Yeh, K.C. Ditzler, C.A. McMahon, F.G. Dugger, D.E. 1975 Clinical Pharmacology and Therapeutics 18(3):330-337

Propionanilide, N-(1-phenethyl-4-piperidyl)-, citrate (1:1) (8 CI)
Propanamide, N-phenyl-N-(1-(2-phenylethyl)-4-piperidinyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (1:1) (9 CI)
990-73-8
C22-H28-N2-O.C6-H8-O7
MW 528.45, MP 149-151 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4978 Blood, serum	Injection	RIA	a) 5 b) 6 c) 3	a) 352.8-8 ng/ml b) 91.6-5 ng/ml c) 55.3-1 ng/ml	a) Not applicable b) Not applicable c) Not applicable	a) 1.0 mg/sq m b) 0.5 mg/sq m c) 0.1 mg/sq m Range of means, 0-2 hr after dose 28-69 yr olds, with neuro- or neck cancer surgery. DRUGS; DRUG THERAPY; BLOOD SERUM; CEREBROSPINAL FLUID; URINE; ADULTS	Schleimer, R. Benfamini, E. Eisele, J. Henderson, G. 1978 Clinical Pharmacology and Therapeutics 23(2):188-194

(NEXT PAGE)

Propionanilide, N-(1-phenethyl-4-piperidyl)-, citrate (1:1) (8 CI)
Propanamide, N-phenyl-N-(1-(2-phenylethyl)-4-piperidinyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (1:1) (9 CI)
990-73-8
C22-H28-N2-O.C6-H8-O7
MW 528.45, MP 149-151 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4979 Cerebrospinal fluid	Injection	RIA	1	0.1-3 ng/ml	Not applicable	5 and 30 min after 1.0 mg/sq m. Final measurement, 1.25 ng/ml at 4 hr. Neurosurgical patients DRUGS; DRUG THERAPY; BLOOD SERUM; CEREBROSPINAL FLUID; URINE; ADULTS	Schleimer, R. Benfamini, E. Eisele, J. Henderson, G. 1978 Clinical Pharmacology and Therapeutics 23(2):188-194
4980 Urine	Injection	RIA	1	Not applicable	21% of dose	Cumulative excretion in 48-hr urines after 1.0 mg/sq m Neurosurgical patient DRUGS; DRUG THERAPY; BLOOD SERUM; CEREBROSPINAL FLUID; URINE; ADULTS	Schleimer, R. Benfamini, E. Eisele, J. Henderson, G. 1978 Clinical Pharmacology and Therapeutics 23(2):188-194

Propionic acid, 2-(p-chlorophenoxy)-2-methyl- (8 CI)
Propanoic acid, 2-(4-chlorophenoxy)-2-methyl- (9 CI)
882-09-7
C10-H11-Cl-O3
MW 214.66, MP 118-119 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4981 Blood, plasma	Ingestion	HPLC	4	Not given	96.1 + or - 17.7 ug/ml	Mean steady state values, 2 X 1g/day for 6 wk. Healthy 22-35 yr olds, no medications for 2 preceding wk. DRUGS; CALIFORNIA; BLOOD PLASMA; DRUG THERAPY; ADULTS; COMPARATIVE EVALUATIONS; METABOLITES; CHLORINE ORGANIC COMPOUNDS	Bjornsson, T.D. Meffin, P.J. Swezey, S. Blaschke, T.F. 1979 Journal of Pharmacology and Experimental Therapeutics 210(3):316-321

Propionitrile, 3-amino- (8 CI)
Propanenitrile, 3-amino- (9 CI)
151-18-8
C3-H6-N2
MW 70.09, BP 185 C at 760 mm Hg, 87-89 C at 20 mm Hg, 66-69 C at 5 mm Hg, 50-55 C at 3 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4982 Urine	Ingestion	Photometry	1	Not given	16.3 + or - 0.6% of dose	Steady state excretion, days 2-14 on 250 mg/6 hr. Urine collected at drug administration. 16 yr old black with massive keloids removed surgically. DRUGS; DRUG THERAPY; URINE; METABOLISM; METABOLITES; ENZYMES	Fleisher, J.H. Peacock, E.E. Chvapil, M. 1978 Clinical Pharmacology and Therapeutics 23(5):520-524

Pyridine, 2-(alpha-(2-(dimethylamino)ethyl)benzyl)- (8 CI)
2-Pyridinepropanamine, N,N-dimethyl-gamma-phenyl- (9 CI)
86-21-5
C16-H20-N2
MW 240.34, BP 181 C at 13 mm Hg, 142 C at 2 mm Hg, 135 C at 0.5 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4983 Blood	Ingestion	GC	a) 6 b) 1 c) 1	a) 0.01-0.19 ug/ml b) Not given c) Not given	a) 0.112 + or - 0.062 ug/ml b) 1.9 ug/ml c) 30 ug/ml	a) 3 males, 3 females, mean wt 67.17 + or - 8.2 kg, 2 hr after 75 mg of the maleate b) Autopsy, 18 yr old male, possible overdose c) Autopsy, 44 yr old, suicide DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4984 Brain	Ingestion	HPLC	1	Not given	5.3 ug/g	Autopsy, 18 yr old, possible overdose DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4985 Kidney	Ingestion	HPLC	1	Not given	4.0 ug/g	Autopsy, 18 yr old, possible overdose DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4986 Liver	Ingestion	HPLC	a) 1 b) 1	a) Not given b) Not given	a) 6.6 ug/g b) 115 ug/g	a) Autopsy, 18 yr old, possible overdose b) Autopsy, 44 yr old, suicide DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
4987 Urine	Ingestion	HPLC	1	Not given	149 ug/ml	Autopsy, 18 yr old, possible overdose DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255

Pyridinium, 1-((2-carboxy-8-oxo-7-(2-(2-thienyl)acetamido-)-5-thia-1-azabicyclo(4.2.0)oct-2-en-3-yl)methyl)-, hydroxide, inner salt (8 CI) (VAN)
Pyridinium, 1-((2-carboxy-8-oxo-7-((2-thienylacetyl)amino)-5-thia-1-azabicyclo(4.2.0)oct-2-en-3-yl)methyl)-, hydroxide, inner salt, (6R-trans)- (9 CI)
50-59-9
C19-H17-N3-O4-S2
MW 415.50

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4988 Blood, plasma	Injection	HPLC	4	a) 32.8-40.4 ug/ml b) 0.9-2.6 ug/ml	a) 36.8 ug/ml b) 1.65 ug/ml	a) After 5 min b) After 7 hr Dose, 10 min IV of 1 g Healthy 27-47 yr olds DRUGS; ANTIBIOTICS; SWEDEN; URINE; BLOOD PLASMA; ADULTS	Arvidsson, A. Borga, O. Alvan, G. 1979 Clinical Pharmacology and Therapeutics 25(6):870-876

(NEXT PAGE)

Pyridinium, 1-((2-carboxy-8-oxo-7-(2-(2-thienyl)acetamido-)-5-thia-1-azabicyclo(4.2.0)oct-2-en-3-yl)methyl)-, hydroxide, inner salt (8 CI) (VAN)
Pyridinium, 1-((2-carboxy-8-oxo-7-((2-thienylacetyl)amino)-5-thia-1-azabicyclo(4.2.0)oct-2-en-3-yl)methyl)-, hydroxide, inner salt, (6R-trans)- (9 CI)
50-59-9
C19-H17-N3-O4-S2
MW 415.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4989 Urine	Injection	HPLC	4	Not given	71 + or - 10% of dose	30 hr excretion after 10 min IV of 1 g Healthy 27-47 yr olds DRUGS; ANTIBIOTICS; SWEDEN; URINE; BLOOD PLASMA; ADULTS	Arvidsson, A. Borga, O. Alvan, G. 1979 Clinical Pharmacology and Therapeutics 25(6):870-876

Pyridinium, 2-formyl-1-methyl-, chloride, oxime (8 CI)
Pyridinium, 2-((hydroxyimino)methyl)-1-methyl, chloride (9 CI)
51-15-0
C7-H9-N2-O.Cl
MW 172.63, MP 235-238 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4990 Blood, plasma	Injection		6	a) 18-0.6 ug/ml b) 18-1.4 ug/ml	a) Not applicable b) Not applicable	a) After 5 mg/kg IV, 6 subjects b) After 5 mg/kg + 2.5 hr IV of 100 mg/hr thiamine, 4 subjects Range of means, 0.05 and 4.0 hr. Means significantly different after 6 min 20-27 yr olds Mild to moderate visual symptoms lasting 5-10 min DRUGS; DRUG INTERACTION; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; ADULTS	Josselson, J. Sidell, F.R. 1978 Clinical Pharmacology and Therapeutics 24(1):95-100
4991 Urine	Injection		5	a) Not given b) Not given	a) 72.4 + or - 3.3% b) 38.2 + or - 9.0%	a) 0-1.5 hr excretions after 5 mg/kg IV, 5 subjects. 97.0 + or - 1.0% by 6 hr b) 0-1.5 hr excretions after 5 mg/kg + 2.5 hr IV of 100 mg/hr thiamine, 4 subjects. 75.9 + or - 8.6% by 6 hr a) and b) significantly different, P < 0.001 in 0-1.5 hr excretions and P < 0.01 in 0-6 hr excretions. 20-27 yr olds Mild to moderate visual symptoms lasting 5-10 min DRUGS; DRUG INTERACTION; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; ADULTS	Josselson, J. Sidell, F.R. 1978 Clinical Pharmacology and Therapeutics 24(1):95-100

Pyridinium, 3-hydroxy-1-methyl-, dimethylcarbamate (ester) (8 CI)
Pyridinium, 3-(((dimethylamino)carbonyl)oxy)-1-methyl- (9 CI)
155-97-5
C9-H13-N2-O2
MW 181.24

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4992 Blood, plasma	Ingestion	GC	1	2.7-18.6 ng/ml	Not given	Dose, 60 mg as bromide, 3X daily Myasthenic patient, U.K. DRUGS; BLOOD PLASMA; MEASUREMENT METHODS; UNITED KINGDOM	Davison, S.C. Hyman, W. Prentis, R.A. Dehghan, A. Chan, K. 1980 Methods and Findings in Experimental and Clinical Pharmacology 2(2):77-82
4993 Blood, serum	Injection	GC	5	a) 700-1800 ng/ml b) 40-60 ng/ml	a) Not given b) Not given	a) Initial levels b) After 3-4 hr Dose, 2 min IV of 0.35 mg/kg with 0.03 mg/kg atropine. 28-47 yr old surgical patients with normal renal function. BLOOD SERUM; DRUGS; DRUG THERAPY; DRUG INTERACTION; SURGERY	Cronnelly, R. Stanski, D.R. Miller, R.D. Sheiner, L.B. 1980 Clinical Pharmacology and Therapeutics 28(1):78-81

Pyridoxol (8 CI)
3,4-Pyridinedimethanol, 5-hydroxy-6-methyl- (9 CI)
65-23-6
C8-H11-N-O3
MW 169.18, MP 160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4994 Milk	Ingestion	Microbiological	a) 6 b) 8 c) 5	a) 67-177 ug/l b) 189-348 ug/l c) 256-454 ug/l	a) 129 + or - 39 ug/l b) 239 + or - 51 ug/l c) 314 + or - 52 ug/l	a) < 2.5 mg B-6/day b) 2.5-5.0 mg B-6/day c) > 5.0 mg B-6/day No effect of stage of lactation. Healthy, lactating 24-42 yr olds. MILK; INDIANA; VITAMINS; DIETS; LACTATION	West, K.D. Kirksey, A. 1976 American Journal of Clinical Nutrition 29:961-969

Pyrimidine, 2,4-diamino-5-(3,4,5,-trimethoxybenzyl)- (8 CI)
2,4-Pyrimidinediamine, 5-((3,4,5-trimethoxyphenyl)methyl)- (9 CI)
738-70-5
C14-H18-N4-O3
MW 290.32, MP 199-203 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4995 Blood, plasma	Ingestion	HPLC	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 0.57 ug/ml b) 0.92 ug/ml c) 0.64 ug/ml d) 0.36 ug/ml e) 0.10 ug/ml f) 0.01 ug/ml	a) 0.5 hr b) 2 hr c) 4 hr d) 12 hr e) 24 hr f) 48 hr Times after dose of 100 mg Normal subjects BLOOD; BLOOD PLASMA; URINE; ANTIBIOTICS; DRUGS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Weinfeld, R.E. Macasieb, T.C. 1979 Journal of Chromatography 164:73-84

(NEXT PAGE)

Pyrimidine, 2,4-diamino-5-(3,4,5,-trimethoxybenzyl)- (8 CI)
2,4-Pyrimidinediamine, 5-((3,4,5-trimethoxyphenyl)methyl)- (9 CI)
738-70-5
C14-H18-N4-O3
MW 290.32, MP 199-203 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
4996 Blood, plasma	Ingestion	TLC Colorimetry	1	1.95-0.29 ug/ml	Not given	0.5 and 25 hr after 160 mg trimethoprim and 800 mg sulfamethoxazole DRUGS; ANTIBIOTICS; BLOOD PLASMA; MEASUREMENT METHODS	Sigel, C.W. Grace, M.E. Nichol, C.A. Hitchings, G.H. 1974 Journal of Pharmaceutical Sciences 63(8):1202-1205
4997 Blood, serum	Ingestion	HPLC	6	Not given	2.03 + or - 1.2 ug/ml	1-1.5 hr after 4 mg/kg with 20 mg/kg sulfamethoxazole. 2-6 yr olds with chronic serous otitis media. ANTIBIOTICS; INFECTION; CHILDREN; BLOOD SERUM; EAR FLUID	Klimek, J.J. Bates, T.R. Nightingale, C. Lehmann, W.B. Ziemniak, J.A. Quintiliani, R. 1980 Journal of Pediatrics 96(6):1087-1089
4998 Ear fluid	Ingestion	HPLC	6	0.20-2.70 ug/ml	1.39 + or - 0.80 ug/ml	1-1.5 hr after 4 mg/kg with 20 mg/kg sulfamethoxazole. 2-6 yr olds with chronic serous otitis media. ANTIBIOTICS; INFECTION; CHILDREN; BLOOD SERUM; EAR FLUID	Klimek, J.J. Bates, T.R. Nightingale, C. Lehmann, W.B. Ziemniak, J.A. Quintiliani, R. 1980 Journal of Pediatrics 96(6):1087-1089
4999 Urine	Ingestion	HPLC	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 55.0 mg b) 31.7 mg c) 3.0 mg d) 89.7 mg	a) 0-24 hr b) 24-48 hr c) 48-72 hr) d) 0-72 hr Totals collected during times shown Dose, 160 mg BLOOD; BLOOD PLASMA; URINE; ANTIBIOTICS; DRUGS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Weinfeld, R.E. Macasieb, T.C. 1979 Journal of Chromatography 164:73-84

Pyrrole-2-acetic acid, 1-methyl-5-p-toluoyl- (8 CI)
1H-Pyrrole-2-acetic acid, 1-methyl-5-(4-methylbenzoyl)- (9 CI)
26171-23-3
C15-H15-N-O3
MW 257.30, MP 155-157 C (dec)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5000 Blood, plasma	Ingestion	Radiometry TLC	5	a) 31.88-49.26 ug/ml b) 5.21-8.97 ug/ml c) 3.93-7.11 ug/ml d) 1.22-2.22 ug/ml	a) 38.88 + or - 6.62 ug/ml b) 6.72 + or - 1.46 ug/ml c) 5.26 + or - 1.26 ug/ml d) 1.75 + or - 0.37 ug/ml	a) Peaks, tolmetin. Peak times, 20-60 min (mean 28 + or - 18 min) b) 0-7 hr average level, tolmetin c) Peaks, major metabolite. Peak times, 40-90 min (mean 60 + or - 16 min) d) 0-7 hr average level, major metabolite C 14 labelled dose, 300 mg Administered as sodium salt Patients with rheumatoid arthritis > 1 yr, fasted before and after dose DRUGS; DRUG THERAPY; DISEASES; RHEUMATOID ARTHRITIS; ANTI-INFLAMMATORY AGENTS; BLOOD PLASMA; METABOLITES; URINE	Grindel, J.M. Miqdalof, B.H. Plostnieks, J. 1979 Clinical Pharmacology and Therapeutics 26(1):122-128

Pyrrole-2-acetic acid, 1-methyl-5-p-toluoyl- (8 CI)
1H-Pyrrole-2-acetic acid, 1-methyl-5-(4-methylbenzoyl)- (9 CI)
26171-23-3
C15-H15-N-03
MW 257.30, MP 155-157 C (dec)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5001 Urine	Ingestion	Radiometry TLC	5	a) 24.3-5.73 mg b) 191-240 mg c) 24.3-57.0 mg	a) 32.5 + or - 13.9 mg b) 216 + or - 18 mg c) 41.4 + or - 13.8 mg	a) Tolmetin b) Major metabolite c) Tolmetin conjugates 0-24 hr excretions after 300 mg C14-labelled dose Administered as sodium salt Patients with rheumatoid arthritis > 1 yr, fasted before and after dose DRUGS; DRUG THERAPY; DISEASES; RHEUMATOID ARTHRITIS; ANTI-INFLAMMATORY AGENTS; BLOOD PLASMA; METABOLITES; URINE	Grindel, J.M. Migdalof, B.H. Plostnieks, J. 1979 Clinical Pharmacology and Therapeutics 26(1):122-128

Pyrrole-2-acetic acid, 5-(p-chlorobenzoyl)-1,4-dimethyl- (8 CI)
1H-Pyrrole-2-acetic acid, 5-(4-chlorobenzoyl)-1,4-dimethyl- (9 CI)
33369-31-2
C15-H14-Cl-N-03
MW 291.75

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5002 Blood, plasma	Ingestion	HPLC	24	a) Not given b) Not given c) Not given	a) 2.47 + or - 1.15 ug/ml b) 4.42 + or - 2.24 ug/ml c) 7.94 + or - 4.07 ug/ml	a) Mean peak, 44 + or - 47 min after 50 mg b) Mean peak, 57 + or - 45 min after 100 mg c) Mean peak, 80 + or - 66 min after 200 mg Peaks significantly different, p < 0.0001. Healthy males, mean age 24 yr, fasted > 12 hr. DRUGS; BLOOD PLASMA; ADULTS; ANALGESICS; URINE	Nayak, R.K. Ng, K.T. Gottlieb, S. Plostnieks, J. 1980 Clinical Pharmacology and Therapeutics 27(3):395-401
5003 Urine	Ingestion	HPLC	24	a) Not given b) Not given c) Not given	a) 23.16 + or - 5.87 mg b) 48.80 + or - 19.56 mg c) 83.93 + or - 26.95 mg	a) After 50 mg, 34% as unchanged drug b) After 100 mg, 19.3% as unchanged drug c) After 200 mg, 23.0% as unchanged drug 0-12 hr cumulative excretion of unchanged and conjugated drug. Healthy males, mean age 24 yr, fasted > 12 hr. DRUGS; BLOOD PLASMA; ADULTS; ANALGESICS; URINE	Nayak, R.K. Ng, K.T. Gottlieb, S. Plostnieks, J. 1980 Clinical Pharmacology and Therapeutics 27(3):395-401

Quinidine (8 CI)
Cinchonan-9-ol, 6'-methoxy-, (9S)- (9 CI)
56-54-2
C20-H24-N2-O2
MW 324.41, MP 174-175 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5004 Blood, plasma	Ingestion	Fluorometry	5	a) 1.6-3.6 ug/ml b) 1.5-3.7 ug/ml	a) 2.3 + or - 0.7 ug/ml b) 2.4 + or - 0.9 ug/ml	a) Quinidine b) Quinidine + propranolol Average steady state 0-6 hr on 3rd day of 200 mg/6 hr. Propranolol, 80 mg/6 hr for 3 days. Healthy 22-46 yr olds. DRUGS; DRUG INTERACTION; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; ADULTS	Fenster, P. Perrier, D. Mayersohn, M. Marcus, F.I. 1980 Clinical Pharmacology and Therapeutics 27(4):450-453
5005 Blood, plasma	Injection	TLC Fluorometry	a) 9 b) 8	a) 4.3-0.26 mg/l b) 2.75-0.165 mg/l	a) Not given b) Not given	a) Congestive heart failure patients b) Controls Range 0-24 hr after end of 22-min IV of 400 mg as gluconate Continuous decline. a) and b) different, P<0.1, except at 8 hr. Cardiac patients and controls, ages 40-79 yr. Some on other medications. Fasted overnight. DRUGS; DRUG THERAPY; BLOOD PLASMA; NEBRASKA; URINE; COMPARATIVE EVALUATIONS; ADULTS; HEART DISEASES; ANTIARRHYTHMIC AGENTS	Ueda, C.T. Dzindzio, B.S. 1978 Clinical Pharmacology and Therapeutics 23(2):158-164
5006 Blood, plasma		Fluorometry	6	Not given	0.9 + or - 0.1 ug/ml	Dose of 200 mg 2x/day, slow-release form. Healthy 21-28 yr olds. Positive inotropic effect of digoxin, diminished by quinidine. DRUGS; DENMARK; BLOOD PLASMA; ADULTS; BLOOD PRESSURE; DRUG INTERACTION	Steiness, E. Waldorff, S. Hansen, P.B. Kjaergard, H. Buch, J. Egeblad, H. 1980 Clinical Pharmacology and Therapeutics 27(6):791-795
5007 Urine	Injection	TLC Fluorometry	a) 9 b) 8	a) Not given b) Not given	a) 15 + or - 5% of dose b) 18 + or - 6% of dose	a) Congestive heart failure patients b) Controls 48 hr cumulative excretion after 22 min IV of 400 mg as gluconate. Cardiac patients and controls, ages 40-79 yr. Some on other medications. Fasted overnight. DRUGS; DRUG THERAPY; BLOOD PLASMA; NEBRASKA; URINE; COMPARATIVE EVALUATIONS; ADULTS; HEART DISEASES; ANTIARRHYTHMIC AGENTS	Ueda, C.T. Dzindzio, B.S. 1978 Clinical Pharmacology and Therapeutics 23(2):158-164

Salicylic acid (8 CI)
Benzoic acid, 2-hydroxy- (9 CI)
69-72-7
C7-H6-O3
MW 138.12, MP 157-159 C, BP about 211 C at 20 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5008 Blood, plasma	Ingestion	HPLC	18	a) 0.098-33.1 ug/ml b) 0.695-36.5 ug/ml c) 0.783-37.5 ug/ml	a) 21.9 ug/ml b) 22.9 ug/ml c) 22.7 ug/ml	a) After 894 mg aspirin b) After 481 mg Mg-salicylate c) After 500 mg choline Mg-trisalicylate Equivalent of about 500 mg salicylic acid Over 16 hr. 18-24 yr old volunteers, wt 62-85 kg, fasted 8 hr. MISSOURI; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; ANTI-INFLAMMATORY AGENTS; COMPARATIVE EVALUATIONS; DRUGS	Mason, W.D. 1980 Journal of Pharmaceutical Sciences 69(11):1355-1356
5009 Blood, plasma	Ingestion	HPLC	1	0-55.2 ug/ml	Not given	0 and 4 hr after 1000 mg salicylsalicylic acid. Clearance by 24 hr. Estimated from graph. MINNESOTA; ADULTS; BLOOD PLASMA; ANALGESICS; ANTI-INFLAMMATORY AGENTS; MEASUREMENT METHODS; DRUGS	Harrison, L.I. Funk, M.L. Ober, R.E. 1980 Journal of Pharmaceutical Sciences 69(11):1268-1271
5010 Blood, plasma	Ingestion	HPLC GC	a) 7 b) 7	a) 0-74 mg/l b) 106-276 mg/l	a) Not applicable b) 167 mg/l	a) Lowest and highest values over 24 hr following ingestion of a single 4 g dose. Levels peaked at 2 hr and then declined. Considerable individual variation, due to differences in metabolism of parent compound b) Levels at 5th day following twice daily dose of 3 g of benorylate. Healthy 21-67 yr olds, wt 48-100 kg FRANCE; ADULTS; BLOOD; BLOOD PLASMA; DRUGS; IN VITRO ANALYSIS	Cailleux, P. Cailleux, A. Allain, P. Renier, J.-C. 1979 Therapie 34:81-87
5011 Urine	Ingestion	HPLC	18	a) Not given b) Not given c) Not given	a) 407 + or - 90.5 mg b) 393 + or - 69.3 mg c) 369 + or - 77.7 mg	a) After 894 mg aspirin b) After 481 mg Mg-salicylate c) After 500 mg choline Mg-trisalicylate Equivalent of about 500 mg salicylic acid 0-12 hr excretions 18-24 yr old volunteers, wt 62-85 kg, fasted 8 hr. MISSOURI; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; ANTI-INFLAMMATORY AGENTS; COMPARATIVE EVALUATIONS; DRUGS	Mason, W.D. 1980 Journal of Pharmaceutical Sciences 69(11):1355-1356

Salicylic acid acetate (8 CI)
Benzoic acid, 2-(acetyloxy)- (9 CI)
50-78-2
C9-H8-O4
MW 180.2, MP 135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5012 Blood, plasma	Ingestion		6	a) Not given b) Not given	a) 81 ug/ml b) 76 ug/ml	a) Mean peak at 1 hr, 1200 mg aspirin b) Mean peak at 2 hr, 1200 mg + 500 mg naproxen Estimated from graph. Area-under-the-curve not different with naproxen, P>0.05. Healthy 23-40 yr olds, fasted overnight. DRUGS; DRUG INTERACTION; ANTI-INFLAMMATORY AGENTS; ADULTS; FECES; BLOOD PLASMA; COMPARATIVE EVALUATIONS	Segre, E.J. Chaplin, M. Forchielli, E. Runkel, R. Sevelius, H. 1974 Clinical Pharmacology and Therapeutics 15(4):374-379

Salicylic acid, ion(1-) (8 CI)
Benzoic acid, 2-hydroxy-, ion(1-) (9 CI) (VAN)
63-36-5
C7-H5-O3
MW 138.12, MP 157-159 C, BP about 211 C at 20 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5013 Blood, plasma	Ingestion		2	a) Not applicable b) Not applicable	a) 25.7 mg/100 ml b) 15.7 mg/100 ml	a) Newborn, umbilical cord vein b) Mother At birth, after 6.5 g daily to mother during pregnancy. Newborn and mother. DRUGS; NEWBORN; UMBILICAL CORD; BLOOD PLASMA; PREGNANCY; DRUG THERAPY; ANTI-INFLAMMATORY AGENTS; ANALGESICS; ADULTS	Levy, G. Procknal, J.A. Garrettson, L.K. 1975 Clinical Pharmacology and Therapeutics 18(2):210-214
5014 Blood, plasma						Review. A discussion of the merits and limitations of monitoring plasma concentrations in chronic rheumatic conditions. ITALY; BLOOD PLASMA; ANALGESICS; REVIEW; METABOLISM	Mandelli, M. Tognoni, G. 1980 Clinical Pharmacokinetics 5:424-440
5015 Blood, plasma	Ingestion	Colorimetry	6	104-157 ug/ml	Not given	Range of means 1 and 32 hr after 900 mg phenytoin plus aspirin therapy of 975 mg/5 hr begun 22 hr before phenytoin. Final measurement, 130 ug/ml at 48 hr. Estimated from graph. Healthy 22-32 yr olds, fasted 8 hr before-3 hr after phenytoin dose. DRUGS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS	Fraser, D.G. Ludden, T.M. Evens, R.P. Sutherland, E.W. 1980 Clinical Pharmacology and Therapeutics 27(2):165-169

(NEXT PAGE)

Salicylic acid, ion(1-) (8 CI)
Benzoic acid, 2-hydroxy-, ion(1-) (9 CI) (VAN)
63-36-5
C7-H5-O3
MW 138.12, MP 157-159 C, BP about 211 C at 20 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5016 Blood, plasma	Ingestion		a) 1 b) 1 c) 1 d) 6 e) 6	a) 9-0.2 ug/ml b) 20-2 ug/ml c) 28-7.5 ug/ml d) 28.8-73.2 ug/ml e) 54-120 ug/ml	a) Not applicable b) Not applicable c) Not applicable d) 40.1 + or - 17.3 ug/ml e) 77 + or - 24 ug/ml	a) 0.5 and 6 hr after 15 ml dose b) 2 and 9 hr after 30 ml dose. Initial measurement, 11 ug/ml at 0.5 hr c) 3 and 9 hr after 60 ml dose. Initial measurement, 12 ug/ml at 0.5 hr d) 1.8 hr after 60 ml (peak mean level) e) Peak level after 60 ml/6 hr for 5 doses 8.77 mg salicyclic acid/ml Healthy 28-38 yr olds, wt 50-82 kg ADULTS; URINE; BLOOD PLASMA; DRUGS; ANALGESICS	Feldman, S. Chen, S.-L. Pickering, L.K. Cleary, T.G. Ericsson, C.D. Hulse, M. 1981 Clinical Pharmacology and Therapeutics 29(6):788-792
5017 Blood, serum	Ingestion		12	a) 7.13-38.6 mg/100 ml b) 0.582-6.06 mg/100 ml	a) 19.67 + or - 7.62 mg/100 ml b) 2.73 + or - 1.69 mg/100 ml	a) Total, correlation with saliva levels, r=0.708 b) Free, correlation with saliva levels, r=0.984 Time-averaged steady-state levels, usual dose 80 mg/kg/day. 7-17 yr olds with rheumatoid arthritis. DRUG THERAPY; ANALGESICS; SALIVA; BLOOD SERUM; CHILDREN; RHEUMATOID ARTHRITIS; DISEASES; COMPARATIVE EVALUATIONS; ILLINOIS; MEASUREMENT METHODS	Levy, G. Procknal, J.A. Olufs, R. Pachman, L.M. 1980 Clinical Pharmacology and Therapeutics 27(5):619-627
5018 Blood, serum	Ingestion	Fluorometry	7	Not given	0.53 + or - 0.08 mmoles/l	Mean peak at 0.5 hr after 900 mg plus one 650-mg sustained release tablet of phenytoin. 27.8% reduction of phenytoin in 2 hr. Healthy 23-36 yr olds, wt 50-80 kg. DRUGS; DRUG INTERACTION; BLOOD SERUM; ADULTS; SALIVA; ANTICONVULSANTS; ANALGESICS; ANTIPYRETICS; NEW ZEALAND; METABOLISM	Paxton, J.W. 1980 Clinical Pharmacology and Therapeutics 27(2):170-178
5019 Blood, serum	Ingestion	Colorimetry	20	8.8-33.0 mg/100 ml	18.47 mg/100 ml	After 5 days on 50 mg/kg/day buffered aspirin in 5 doses. Rheumatoid arthritis patients, ages 20-66 yr. DRUGS; RHEUMATOID ARTHRITIS; BLOOD SERUM; URINE; ADULTS; DISEASES; METABOLISM; METABOLITES	Gupta, N. Sarkissian, E. Paulus, H.E. 1975 Clinical Pharmacology and Therapeutics 18(3):350-355
5020 Blood, serum	Ingestion	Fluorometry	9	a) 10-26 mg/l b) 29-58 mg/l c) 106-181 mg/l d) 122-236 mg/l e) 175-286 mg/l f) 215-292 mg/l	a) 15.44 mg/l b) 44.56 mg/l c) 147.89 mg/l d) 189.56 mg/l e) 243.78 mg/l f) 254.50 mg/l	a) 0.66 mg/kg/hr b) 1.0 mg/kg/hr c) 1.8 mg/kg/hr d) 2.1 mg/kg/hr e) 2.7 mg/kg/hr f) 3.0 mg/kg/hr, 6 subjects Steady state levels Healthy 25-40 yr olds, on no medication >2 wk and no salicylates >3 wk. DRUGS; ANTI-INFLAMMATORY AGENTS; ANALGESICS; BLOOD PLASMA; PROTEINS; URINE; COMPARATIVE EVALUATIONS; METABOLISM; ADULTS	Furst, D.E. Tozer, T.N. Melmon, K.L. 1979 Clinical Pharmacology and Therapeutics 26(3):380-389

(NEXT PAGE)

Salicylic acid, ion(1-) (8 CI)
Benzoic acid, 2-hydroxy-, ion(1-) (9 CI) (VAN)
69-36-5
C7-H5-03
MW 138.12, MP 157-159 C, BP about 211 C at 20 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5021 Saliva	Ingestion		12	0.426-3.58 mg/100 ml	1.67+ or - 1.03 mg/100 ml	Time-averaged steady state levels, usual dose 80 mg/kg/day 7-17 yr olds with rheumatoid arthritis. DRUG THERAPY; ANALGESICS; SALIVA; BLOOD SERUM; CHILDREN; RHEUMATOID ARTHRITIS; DISEASES; COMPARATIVE EVALUATIONS; ILLINOIS; MEASUREMENT METHODS	Levy, G. Procknal, J.A. Olufs, R. Pachman, L.M. 1980 Clinical Pharmacology and Therapeutics 27(5):619-627
5022 Urine	Ingestion	Colorimetry	2	560.7-603.2 mg	581.95 mg	Excretion in 24-hr urines, after 300 mg buffered aspirin. Values determined by new method compare to 365.0-453.9 mg, determined by often-used colorimetric method. Healthy 22 and 24 yr olds. DRUGS; MEASUREMENT METHODS; URINE; COMPARATIVE EVALUATIONS; ADULTS; ANTI-INFLAMMATORY AGENTS	Chiou, W.L. Onyemelukwe, I. 1978 Journal of Pharmaceutical Sciences 63(4):630-632
5023 Urine	Ingestion	Colorimetry	20	1.28-1.86 mg/kg/hr	1.51 mg/kg/hr	Excretion of total salicylic acid after 5 days on 50 mg/kg/day buffered aspirin in 5 doses. Moderately correlated with serum levels, r=0.50, P<0.05. Rheumatoid arthritis patients, ages 20-66 yr. DRUGS; RHEUMATOID ARTHRITIS; BLOOD SERUM; URINE; ADULTS; DISEASES; METABOLISM; METABOLITES	Gupta, N. Sarkissian, E. Paulus, H.E. 1975 Clinical Pharmacology and Therapeutics 18(3):350-355
5024 Urine	Ingestion	Colorimetry	9	92.4-105.8% of dose	96.83% of dose	Daily urine recovery, means after 1.0, 1.8, 2.1, 2.7, 3.0, and 4.0 mg/kg/hr at steady state. Healthy 25-40 yr olds, on no medication >2 wk and no salicylates >3 wk. DRUGS; ANTI-INFLAMMATORY AGENTS; ANALGESICS; BLOOD PLASMA; PROTEINS; URINE; COMPARATIVE EVALUATIONS; METABOLISM; ADULTS	Furst, D.E. Tozer, T.N. Melmon, K.L. 1979 Clinical Pharmacology and Therapeutics 26(3):380-389
5025 Urine	Ingestion		a) 6 b) 6	a) 87.0-103.9% b) 56.0-94.1%	a) 95 + or - 6.4% b) 77.2 + or - 13.0%	a) Total output after 60 ml dose b) Total output after 60 ml every 6 hr for five doses 8.77 mg salicyclic acid/ml Healthy 28-38 yr olds, wt 50-82 kg ADULTS; URINE; BLOOD PLASMA; DRUGS; ANALGESICS	Feldman, S. Chen, S.-L. Pickering, L.K. Cleary, T.G. Ericsson, C.D. Hulse, M. 1981 Clinical Pharmacology and Therapeutics 29(6):788-792

Salicylic acid, 4-amino- (8 CI)
Benzoic acid, 4-amino-2-hydroxy- (9 CI)
65-49-6
C7-H7-N-03
MW 153.13, MP 150-151 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5026 Blood, plasma	Ingestion		12	a) 4-49.98 ug/ml b) 155.44-4 ug/ml c) 121.09-5 ug/ml d) 139.51-6 ug/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 0.25 and 3.5% hr after aminosalicylic acid. 21 ug/ml at 6 hr. b) 0.83 and 6 hr after Na aminosalicylate. 57 ug/ml at 0.25 hr c) 1.10 and 6 hr after K aminosalicylate. 32 ug/ml at 0.25 hr d) 1.02 and 6 hr after Ca aminosalicylate. 30 ug/ml at 0.25 hr Corrected to 70 kg wt and 4 g free-acid-equivalent dose. Healthy volunteers, no drugs or alcohol for 3 wk, fasted overnight before and 5 hr after dose. DRUGS; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE	Wan, S.H. Pentikainen, P.J. Azarnoff, D.L. 1974 Journal of Pharmaceutical Sciences 63(5):709-711
5027 Urine	Ingestion		12	a) Not given b) Not given c) Not given d) Not given	a) 77.2% of dose (3.1 g) b) 92.8% of dose (3.7 g) c) 98.5% of dose (3.9 g) d) 98.2% of dose (3.9 g)	a) Aminosalicylic acid b) Na aminosalicylate c) K-aminosalicylate d) Ca-aminosalicylate 24 hr cumulative excretions after 4 g doses in forms in a)-d). 52.3-56.7% of dose excreted in acetylated form. Healthy volunteers, no drugs or alcohol for 3 wk, fasted overnight before and 5 hr after dose. DRUGS; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE	Wan, S.H. Pentikainen, P.J. Azarnoff, D.L. 1974 Journal of Pharmaceutical Sciences 63(5):709-711

Salicylic acid, 5-((p-(2-pyridylsulfamoyl)phenyl)azo)- (8 CI)
Benzoic acid, 2-hydroxy-5-((4-((2-pyridinylamino)sulfonyl)phenyl)azo)- (9 CI)
599-79-1
C18-H14-N4-05-S
MW 398.39, MP 240-245 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5028 Amniotic fluid	Ingestion		5	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.6 + or - 0.5 ug/ml b) 16.0 + or - 8.9 ug/ml c) 4.8 + or - 3.4 ug/ml d) 1.9 + or - 0.7 ug/ml e) 1.2 + or - 0.5 ug/ml	a) Sulphasalazine b) Total sulphapyridine c) Acetylated sulphapyridine d) Acetylated sulphapyridine glucuronide e) Total 5-aminosalicylic acid Measured at delivery. Dose, 0.5 g, 4x/day during pregnancy and puerperium. Patients with ulcerative colitis who became pregnant while on therapy. AMNIOTIC FLUID; BLOOD SERUM; GASTROINTESTINAL SYSTEM; MILK; UMBILICAL CORD; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES; PREGNANCY; LACTATION	Khan, A.K.A. Truelove, S.C. 1979 British Medical Journal 2(6204):1553

(NEXT PAGE)

Salicylic acid, 5-((p-(2-pyridylsulfamoyl)phenyl)azo)- (8 CI)
Benzoic acid, 2-hydroxy-5-((4-((2-pyridinylamino)sulfonyl)phenyl)azo)- (9 CI)
599-79-1
C18-H14-N4-O5-S
MW 398.39, MP 240-245 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5029 Blood, fetal	Ingestion		5	a) Not given b) Not given c) Not given d) Not given e) <0.5 ug/ml	a) 4.2 + or - 3.0 ug/ml b) 11.0 + or - 4.0 ug/ml c) 4.9 + or - 1.8 ug/ml d) 0.6 + or - 0.5 ug/ml e) Not applicable	a) Sulphasalazine b) Total sulphapyridine c) Acetylated sulphapyridine d) Acetylated sulphapyridine glucuronide e) Total 5-aminosalicylic acid Measured at delivery. Dose, 0.5 g, 4x/day during pregnancy and puerperium. Blood from umbilical cords. Patients with ulcerative colitis who became pregnant while on therapy. AMNIOTIC FLUID; BLOOD SERUM; GASTROINTESTINAL SYSTEM; MILK; UMBILICAL CORD; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES; PREGNANCY; LACTATION	Khan, A.K.A. Truelove, S.C. 1979 British Medical Journal 2(6204):1553
5030 Blood, serum	Ingestion		5	a) Not given b) Not given c) Not given d) Not given e) <0.5 ug/ml	a) 7.3 + or - 4.0 ug/ml b) 10.6 + or - 4.6 ug/ml c) 3.7 + or - 2.4 ug/ml d) 0.5 + or - 0.3 ug/ml e) Not applicable	a) Sulphasalazine b) Total sulphapyridine c) Acetylated sulphapyridine d) Acetylated sulphapyridine glucuronide e) Total 5-aminosalicylic acid Measured at delivery. Dose, 0.5 g, 4x/day during pregnancy and puerperium. Patients with ulcerative colitis who became pregnant during therapy. AMNIOTIC FLUID; BLOOD SERUM; GASTROINTESTINAL SYSTEM; MILK; UMBILICAL CORD; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES; PREGNANCY; LACTATION	Khan, A.K.A. Truelove, S.C. 1979 British Medical Journal 2(6204):1553
5031 Milk	Ingestion		3	a) Not given b) Not given c) Not given d) Not given	a) 2.7 + or - 1.8 ug/ml b) 10.3 + or - 1.6 ug/ml c) 1.4 + or - 0.7 ug/ml d) 0.8 + or - 1.0 ug/ml	a) Sulphasalazine b) Total sulphapyridine c) Acetylated sulphapyridine d) Acetylated sulphapyridine glucuronide Measured 1 wk after delivery. Dose, 0.5 g 4x/day during pregnancy and puerperium. Patients with ulcerative colitis who became pregnant while on therapy. AMNIOTIC FLUID; BLOOD SERUM; GASTROINTESTINAL SYSTEM; MILK; UMBILICAL CORD; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES; PREGNANCY; LACTATION	Khan, A.K.A. Truelove, S.C. 1979 British Medical Journal 2(6204):1553

Sparteine (8 CI)
7,14-Methano-2H,6H-dipyrido(1,2-a:1',2'-e)(1,5)diazocine, dodecahydro-, (7S-(7alpha,7aalpha,14alpha,14abeta))- (9 CI)
90-39-1
C15-H26-N2
MW 234.37, BP 173 C at 8 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5032 Urine	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 85% of dose (170 mg) b) < 1% of dose (< 2 mg)	As sparteine b) as 2- and 5-dehydrosparteine 0-24 hr cumulative excretion after 200 mg as sulfate 70 kg, white male phenotyped as "poor metabolizer" according to capacity to 4-hydroxylate debrisoquine and sparteine. DRUGS; METABOLISM; METABOLITES; URINE; COMPARATIVE EVALUATIONS; SEDATIVES; HYPNOTICS; ANTIPYRETICS; ANTIHYPERTENSIVE AGENTS; ANTIARRHYTHMIC AGENTS	Inaba, T. Ofton, S.V. Kalow, W. 1980 Clinical Pharmacology and Therapeutics 27(4):547-549

Sulfanilamide, N(1)-(3,4-dimethyl-5-isoxazolyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(3,4-dimethyl-5-isoxazolyl)- (9 CI)
127-69-5
C11-H13-N3-O3-S
MW 267.30, MP 194 C (also reported 195-198 C, 192-195 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5033 Milk	Ingestion		6	a) Not given b) Not given c) Not given d) Not given	a) 18 + or - 8.4 mg b) 0.45 + or - 0.21% c) 22.8 + or - 11.5% d) 77.1 + or - 11.5%	a) Total sulfisoxazole b) % of maternal dose c) % of total sulfisoxazole recovered as sulfisoxazole d) % of total sulfisoxazole recovered as N4-acetyl sulfisoxazole Dose 1.0 g every 6 hr for 24 hr, 48 hr collection period Caucasians, ages 19-27 yr SULFONAMIDES; BIOACCUMULATION; LACTATION; METABOLITES; KANSAS; ADULTS; MILK; DRUGS	Kauffman, R.E. O'Brien, C. Gilford, P. 1980 Pediatrics 97(5):839-841

Sulfanilamide, N(1)-(4,6-dimethyl-2-pyrimidinyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(4,6-dimethyl-2-pyrimidinyl)- (9 CI)
57-68-1
C12-H14-N4-O2-S
MW 278.32, MP 176 C (also reported: 178-179 C, 198-199 C, 205-207 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5034 Blood, plasma	Ingestion		5	a) 30.8-60.4 ug/ml b) 73.3-122.5 ug/ml	a) 41.26 + or - 11.53 ug/ml b) 103.84 + or - 19.58 ug/ml	a) Peaks, 1-3 hr after 10 mg/kg. b) Peaks, 1-6.6 hr after 40 mg/kg. Healthy 25-34 yr olds, wt 74-96 kg, fasted 12 hr before to 2 hr after dose. URINE; BLOOD PLASMA; DRUGS; METABOLISM; METABOLITES	du Souich, P. Lalka, D. Slaughter, R. Elvin, A.T. McLean, A.J. 1979 Clinical Pharmacology and Therapeutics 25(2):172-183

(NEXT PAGE)

Sulfanilamide, N(1)-(4,6-dimethyl-2-pyrimidinyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(4,6-dimethyl-2-pyrimidinyl)- (9 CI)
57-68-1
C12-H14-N4-O2-S
MW 278.32, MP 176 C (also reported: 178-179 C, 198-199 C, 205-207 C)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5035 Blood, whole	Ingestion	Colorimetry	a) 15 b) 18	a) 61-91% b) 16-37%	a) 76.4% b) 24.7%	a) Rapid acetylators b) Slow acetylators % present as acetylated form 6 hr after a 10 mg/kg dose. Healthy 19-59 yr olds with no incompatability to sulfonamide drugs. Fasted overnight and no medication 24 hr before dose. DRUGS; METABOLISM; ADULTS; METABOLITES; BLOOD; URINE	Olson, W. Miceli, J. Weber, W. 1978 Clinical Pharmacology and Therapeutics 23(2):204-211
5036 Urine	Ingestion	Colorimetry	a) 15 b) 18	a) 84-99% b) 32-71%	a) 88.9% b) 58.2%	a) Rapid acetylators b) Slow acetylators % present as acetylated form 3-6 hr after a 10 mg/kg dose Healthy 19-59 yr olds with no incompatability to sulfonamide drugs. Fasted overnight and no medication 24 hr before dose. DRUGS; METABOLISM; ADULTS; METABOLITES; BLOOD; URINE	Olson, W. Miceli, J. Weber, W. 1978 Clinical Pharmacology and Therapeutics 23(2):204-211
5037 Urine	Ingestion		5	a) 10.3-28.4% of dose b) 54.4-79.1% of dose c) 16.6-37.5% of dose d) 42.1-61.7% dose	a) 24.5 + or - 7.94% of dose b) 64.34 + or - 9.75% of dose c) 30.38 + or - 8.84% of dose d) 49.08 + or - 7.52% of dose	a) Sulfamethazine, 10 mg/kg b) N-acetylated metabolite after 10 mg/kg sulfamethazine c) Sulfamethazine after 40 mg/kg d) N-acetylated metabolite after 40 mg/kg sulfamethazine 0-96 hr excretions. Healthy 25-34 yr olds, wt 74-96 kg, fasted 12 hr before to 2 hr after dose. URINE; BLOOD PLASMA; DRUGS; METABOLISM; METABOLITES	du Souich, P. Lalka, D. Slaughter, R. Elvin, A.T. McLean, A.J. 1979 Clinical Pharmacology and Therapeutics 25(2):172-183

Sulfanilamide, N(1)-(5-methoxy-2-pyrimidinyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(5-methoxy-2-pyrimidinyl)- (9 CI)
651-06-9
C11-H12-N4-O3-S
MW 280.32, MP 214-216 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5038 Urine	Ingestion	Colorimetry	8	a) 551-790 mg b) 537-757 mg	a) 648.86 mg b) 636.44 mg	a) Crystal form II b) Crystal form III 72-hr cumulative excretion after 1 g as either of two crystal forms. a) and b) not significantly different. Healthy 25-40 yr olds, fasted before and after dose. DRUGS; URINE; COMPARATIVE EVALUATIONS; ADULTS	Khalafallah, N. Khalil, S.A. Moustafa, M.A. 1974 Journal of Pharmaceutical Sciences 63(6):861-864

Sulfanilamide, N(1)-(5-methyl-3-isoxazolyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(5-methyl-3-isoxazolyl)- (9 CI)
723-46-6
C10-H11-N3-O3-S
MW 253.31, MP 167 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5039 Blood, plasma	Ingestion	TLC Colorimetry	1	26.33-14.4 ug/ml	Not given	0.5 and 25 hr after 160 mg trimethoprim and 800 mg sulfamethoxazole. DRUGS; ANTIBIOTICS; BLOOD PLASMA; MEASUREMENT METHODS	Sigel, C.W. Grace, M.E. Nichol, C.A. Hitchings, G.H. 1974 Journal of Pharmaceutical Sciences 63(8):1202-1205
5040 Blood, serum	Ingestion	HPLC	7	Not given	44.6 + or - 22 ug/ml	1-1.5 hr after 20 mg/kg with 4 mg/kg trimethoprim. 2-6 yr olds with chronic serous otitis media. ANTIBIOTICS; INFECTION; CHILDREN; BLOOD SERUM; EAR FLUID	Klimek, J.J. Bates, T.R. Nightingale, C. Lehmann, W.B. Ziemniak, J.A. Quintiliani, R. 1980 Journal of Pediatrics 96(6):1087-1089
5041 Ear fluid	Ingestion	HPLC	7	2.81-25.7 ug/ml	8.21 + or - 7.0 ug/ml	1-1.5 hr after 20 mg/kg with 4 mg/kg trimethoprim. 2-6 yr olds with chronic serous otitis media. ANTIBIOTICS; INFECTION; CHILDREN; BLOOD SERUM; EAR FLUID	Klimek, J.J. Bates, T.R. Nightingale, C. Lehmann, W.B. Ziemniak, J.A. Quintiliani, R. 1980 Journal of Pediatrics 96(6):1087-1089

Sulfanilamide, N(1)-2-pyridyl- (8 CI)
Benzenesulfonamide, 4-amino-N-2-pyridinyl- (9 CI)
144-83-2
C11-H11-N3-O2-S
FW 249.29, MP 191-193 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5042 Blood, serum			15	0.8-28.6 ug/ml	18.17 ug/ml	1 and 3 hr after 22-68 mg/kg sulfasalazine in doses divided equally 2X or 4X/day. Includes acetylated and glucuronidized metabolites. 10 rapid acetylators, 12 rapid hydroxylators. 4.5-16 yr olds, with Crohn disease or ulcerative colitis. All but one in complete clinical remission after >1 wk therapy. DRUGS; DRUG THERAPY; METABOLITES; CHILDREN; BLOOD SERUM; METABOLISM	Goldstein, F.D. Alpers, D.H. Keating, J.P. 1979 Journal of Pediatrics 95(4):638-640

Theobromine (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl- (9 CI)
83-67-0
C7-H8-N4-O2
MW 180.17, MP 357 C, BP 290 C (sublimes)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5043 Blood, plasma	Ingestion	HPLC	6	4.5-7.8 mg/l	5.7 mg/l	After 113 g milk chocolate containing 240 mg theobromine and 16 mg caffeine. Peaks at 1.5-3.1 hr. Caucasians, ages 21-36 yr, wt 55-70 kg, nursing their infants 3-37 wk. Slight nausea in 3 mothers, no adverse effects on infants. BLOOD PLASMA; MILK; SALIVA; DRUGS; LACTATION; INFANTS; FOODS	Resman, B.H. Blumenthal, H.P. Jusko, W.J. 1977 Journal of Pediatrics 91(3):477-480
5044 Milk	Ingestion	HPLC	6	3.7-7.5 mg/l	5.3 mg/l	After 113 g milk chocolate containing 240 mg theobromine and 16 mg caffeine. Peaks at 2.1-3.3 hr. Caucasians, ages 21-36 yr, wt 55-70 kg, nursing their infants 3-37 wk. Slight nausea in 3 mothers, no adverse effects on infants. BLOOD PLASMA; MILK; SALIVA; DRUGS; LACTATION; INFANTS; FOODS	Resman, B.H. Blumenthal, H.P. Jusko, W.J. 1977 Journal of Pediatrics 91(3):477-480
5045 Saliva	Ingestion	HPLC	6	4.5-8.2 mg/l	5.7 mg/l	After 113 g milk chocolate containing 240 mg theobromine and 16 mg caffeine. Peaks at 2.0-3.2 hr. Caucasians, ages 21-36 yr, wt 55-70 kg, nursing their infants 3-37 wk. Slight nausea in 3 mothers, no adverse effects on infants. BLOOD PLASMA; MILK; SALIVA; DRUGS; LACTATION; INFANTS; FOODS	Resman, B.H. Blumenthal, H.P. Jusko, W.J. 1977 Journal of Pediatrics 91(3):477-480

Theophylline (8 CI)
1F-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
MW 180.17, MP 270-274 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5046 Blood, plasma	Ingestion Injection	HPLC Enzymatic	8	24.5-120.0 mg/l	67.4 mg/l	Dose, 2.4-11.5 g 15-72 yr olds, with theophylline poisoning. Hypotension, cardiac arrhythmia, convulsions, tachycardia, hypokalemia. Cardiorespiratory arrest THEOPHYLLINES; DRUGS; BLOOD PLASMA; DRUG ABUSE; DISEASES	Helliwell, M. Berry, D. 1979 British Medical Journal 2(6198):1114

(NEXT PAGE)

Theophylline (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
MW 180.17, MP 270-274 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5047 Blood, plasma	Ingestion	HPLC	14	a) 9.3-17.8 mg/l b) 4.3-8.9 mg/l c) 13.3-51.3 mg/l d) 7.9-20.4 mg/l	a) 12.8 mg/l b) 6.5 mg/l c) 25.2 mg/l d) 13.2 mg/l	a) Peaks after 5.6 mg/kg, total body wt basis b) Peaks after 5.6 mg/kg, ideal body wt basis c) Steady states, 0.9 mg/kg/hr, total body wt basis d) Steady states, 0.9 mg/kg/hr, ideal body wt basis Dose as aminophylline. Obese 23-58 yr olds DRUGS; BLOOD PLASMA; THEOPHYLLINES; COMPARATIVE EVALUATIONS	Gal, P. Jusko, W.J. Yurchak, A.M. Franklin, B.A. 1978 Clinical Pharmacology and Therapeutics 23(4):438-444
5048 Blood, plasma	Ingestion	HPLC	4	a) 0-135 ng/ml b) 45-110 ng/ml c) 60-165 ng/ml d) 70-195 ng/ml e) 95-185 ng/ml g) 125-190 ng/ml f) 145-195 ng/ml h) 45-160	a) 49 + or - 30 ng/ml b) 79 + or - 15 ng/ml c) 106 + or - 22 ng/ml d) 118 + or - 27 ng/ml e) 133 + or - 19 ng/ml f) 16314 ng/ml g) 173 + or - 11 ng/ml h) 99 + or - 6 ng/ml (S.E.)	a) After 0.5 hr b) After 1 hr c) After 1.5 hr d) After 2 hr e) After 3 hr f) After 5 hr g) After 7.5 hr h) After 24 hr Following 300 mg dose of caffeine. Volunteers, Canada CANADA; ADULTS; BLOOD PLASMA; DIURETICS; DRUGS; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS; METABOLITES	Sved, S. Hossie, R.D. McGilveray, I.J. 1976 Research Communications in Chemical Pathology and Pharmacology 13(2):185-192
5049 Blood, plasma	Ingestion	GC	12	a) 9.7-4.9 ug/ml b) 21.1-11.6 ug/ml	a) Not given b) Not given	a) Means after 225 mg/12 hr b) Means after 450 mg/12 hr Administered as aminophylline, sustained-release capsule Healthy 20-33 yr olds, one smoker. No caffeine-containing beverages for 24 hr and fasted overnight before study. Low dose effects: mild headaches, anxiety, and palpitations. High dose effects: nausea, vomiting, insomnia, anxiety, headache. Symptoms more likely at plasma levels of >15 ug/ml. UNITED KINGDOM; ADULTS; BLOOD PLASMA; DRUGS	Trembath, P.W. Boobis, S.W. 1979 Clinical Pharmacology and Therapeutics 26(5):654-659
5050 Blood, plasma	Injection	HPLC	1	a) 8.25-0.6 ug/ml b) 17.5-0.85 ug/ml c) 12.0-0.50 ug/ml d) 17-0.7 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) Control trial (no antibiotic) b) Drug + tetracycline c) Drug + erythromycin d) Drug + cephalexin 5 min and 24 hr post-infusion. Antibiotics given as loading dose of 500 mg plus 250 mg/6 hr, oral. 15 min IV of 5 mg/kg aminophylline after 4th antibiotic dose. Healthy 21 to 33 yr olds, no xanthine-containing foods or beverages before and after dose. Tachycardia and mild tremulousness. DRUGS; ANTIBIOTICS; THEOPHYLLINES; BLOOD PLASMA; ADULTS	Pfeifer, H.J. Greenblatt, D.J. Friedman, P. 1979 Clinical Pharmacology and Therapeutics 26(1):36-40

(NEXT PAGE)

Theophylline (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
MW 180.17, MP 270-274 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5051 Blood, plasma	Ingestion		18	a) 0-14.9 ug/ml b) 0-12.0 ug/ml c) 1.5-14.3 ug/ml d) 1.5-14.0 ug/ml e) 7.7-11.6 ug/ml f) 6.5-11.9 ug/ml	a) 6.3 + or - 4.7 ug/ml b) 6.3 + or - 4.5 ug/ml c) 10.2 + or - 4.4 ug/ml d) 9.2 + or - 4.3 ug/ml e) 9.6 + or - 1.4 ug/ml f) 8.8 + or - 1.9 ug/ml	a) Tablet, 0.5 hr b) Elixir, 0.5 hr c) Tablet, 1 hr d) Elixir, 1 hr e) Tablet, 4 hr f) Elixir, 4 hr Times after 375 mg dose in form stated Patients with chronic obstructive lung disease, mean age 59.4 yr, Australia Significant bronchodilation AUSTRALIA; ADULTS; DISEASES; BLOOD PLASMA; DIURETICS; DRUGS; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS; RESPIRATORY SYSTEM	Hartnett, B.J.S. Marlin, G.E. Graham, G. 1978 Medical Journal of Australia 1(14):532-535
5052 Blood, plasma	Ingestion		1	a) Not applicable b) 120-31 mg/l	a) 146 mg/l b) Not given	a) 16 hr after 1.575 g as sustained-release tablet b) 0 and 170 min of charcoal hemoperfusion 15 yr old, 43 kg overdose patient Hypotension and tachycardia after 10 hr, then cardiorespiratory arrest. Acidosis, hypokalemia, cardiac arrhythmias, tachycardia after resuscitation. Aspiration pneumonia and acute renal failure after hemoperfusion. THEOPHYLLINES; LAVAGE; HYPOTENSION; HEALTH HAZARDS; DRUG ABUSE; UNITED KINGDOM; BLOOD PLASMA; DRUGS	Jefferys, D.B. Raper, S.M. Hellivell, M. Berry, D.J. Crome, P. 1980 British Medical Journal 280(6224):1167
5053 Blood, plasma						Review Chronic dose toxicity: anorexia, nausea, vomiting, abdominal discomfort. Serious toxicity (cerebral seizures, cardiac arrhythmias or respiratory or cardiac arrest) is infrequent. REVIEW; THEOPHYLLINES; DISEASES	Piafsky, K.M. Ogilvie, R.I. 1975 New England Journal of Medicine 292(23):1218-1222
5054 Blood, serum	Injection	HPLC		a) 0-24.0 ug/l b) 3.9-17.0 ug/ml c) 8.1-35.2 ug/ml	a) 6.7 ug/ml b) 8.3 ug/ml c) 15.2 ug/ml	a) Time 0 b) Change following 6.0 mg/kg IV aminophylline c) Peak levels Asthmatic 0.5 to 20.9 yr olds, on 2.7-9.6 mg/kg oral theophylline Vomiting, tremors NEW YORK; CHILDREN; BLOOD SERUM; DRUG THERAPY; THEOPHYLLINES	Canavan, J.W. Ellerstein, N.S. Sullivan, T.D. 1980 Journal of Pediatrics 97(2):301-303

(NEXT PAGE)

Theophylline (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
MW 180.17, MP 270-274 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5055 Blood, serum		HPLC	5	a) Not given b) Not given	a) 5.92 + or - 2.8 mg/l b) 2.52 + or - 0.96 mg/l	a) Theophylline b) Caffeine Steady state after theophylline: 5 mg/kg loading dose, 2 mg/kg/12 hr maintenance Data also given for caffeine doses. Premature 2-14 day olds, gestational age 27-30 wk, birth wt 1,019-1,529 g. NEWBORN; CAFFEINE; THEOPHYLLINES; BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS; DRUG THERAPY	Somani, S.M. Khanna, N.N. Bada, H.S. 1980 Journal of Pediatrics 96(6):1091-1093
5056 Blood, serum		CC	20	a) 1.7-26.2 mg/l b) 1.7-26.6 mg/l	a) 9.27 + or - 6.2 mg/l b) 9.26 + or - 6.2 mg/l	a) Venous blood b) Capillary blood Comparison samples obtained within 15 min Dose range 300-1400 mg/24 hr Asthmatic 5-16 yr olds, wt 21.5-92 kg, on maintenance therapy. PENNSYLVANIA; CHILDREN; BLOOD SERUM; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; THEOPHYLLINES	Umstead, G.S. Rosen, J.P. 1979 Clinical Chemistry 25(10):1837-1839
5057 Blood, serum	Ingestion	Enzyme immunoassay	21	a) 0-44 umoles/l b) 20-65 umoles/l c) 27-70 umoles/l	a) Not given b) Not given c) Not given	a) 11 patients, 0 and 4 hr after 10 mg/kg at 0900 hr, sustained-release capsule. 24 umol/l at 12 hr b) 15 patients, previously on regular theophylline, 0 and 24 hr after 10 mg/kg at 0900 and 2100 hr, sustained-release capsule. Peak of 57 umoles/l, 4 hr after first dose. Continued rise after second dose c) 3 patients, 4 hr after sustained-release dose, 10 mg/kg, 2x/day for at least 3 days. Steady-state achieved during 12 hr period Asthmatic 6-13 yr olds, New Zealand Headaches and gastrointestinal intolerance in 15% of patients after 2 wk NEW ZEALAND; ADOLESCENTS; CHILDREN; DISEASES; BLOOD SERUM; DRUG THERAPY; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS	Mitchell, E.A. Liang, A.Y.L. 1980 New Zealand Medical Journal 665:91-93
5058 Blood, serum	Ingestion	HPLC	20	6.7-23.5 ug/ml	15.65 + or - 0.72 ug/ml	6 hr after 10.0 + or - 0.54 mg/kg/12 hr Asthmatic 6-18 yr olds, New Mexico. THEOPHYLLINES; DRUGS; CHILDREN; BLOOD SERUM; NEW MEXICO	Kelly, H.W. Murphy, S. 1980 Pediatrics 66(1):97-102

(NEXT PAGE)

Theophylline (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
FW 180.17, MP 270-274 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5059 Blood, serum	Injection	HPLC	a) 6 b) 7	a) 0-12.4 ug/ml b) 0-8.9 ug/ml	a) Not given b) Not given	a) 0 and 20 min after loading dose of 6.0 mg/kg (20 min IV) and then 0.9 mg/kg/hr for 100 min. Steady state of 11 ug/ml at 40-240 min b) 0 and 20 min after loading dose of 3 mg/kg (20 min IV) and then maintenance dose of 0.45 mg/kg/hr to achieve serum level of 5 ug/ml. Steady state of 7 ug/ml at 30-60 min. Healthy 22-33 yr olds, fasted 8-12 hr before, and during study. DRUGS; THEOPHYLLINES; BLOOD SERUM; ADULTS	Cathcart-Rake, W.F. Kyner, J.L. Azarnoff, D.L. 1979 Clinical Pharmacology and Therapeutics 26(1):89-95
5060 Blood, serum	Ingestion	HPLC	14	a) 11.5-0.5 ug/ml b) 15.1-0.8 ug/ml	a) Not given b) Not given	a) Range of means, 1.24 and 24 hr after 300 mg as nonalcoholic aminophylline solution. Initial measurement, 1.8 ug/ml at 5 min b) Range of means, 0.98 and 24 hr after 300 mg as liquid-filled capsule. Initial measurement, 7.3 ug/ml at 0.25 hr. Peaks different (P<0.05). Healthy, 21-40 yr olds, non-smokers with no history of alcoholism or cardiovascular disease. Fasted from xanthine-containing foods 24 hr. Palpitations and mild headaches coincident with peak levels in 2 subjects. THEOPHYLLINES; DRUGS; BLOOD SERUM; METABOLISM; ADULTS	Lesko, L.J. Canada, A.T. Eastwood, G. Walker, D. Brousseau, D.P. 1979 Journal of Pharmaceutical Sciences 68(11):1392-1394
5061 Blood, serum	Injection	GC	15	3.8-19.5 ug/ml	11.0 + or - 5.1 ug/ml	Before end of 20 min IV of 7 mg/kg followed by 0.65 mg/kg/hr for up to 192 hr (mean 48 hr). 15 patients, ages 3-23 mo, 10 with asthma. DRUGS; DRUG THERAPY; THEOPHYLLINES; BLOOD SERUM; INFANTS; CANADA; METABOLISM	Simons, F.E.R. Simons, K.J. 1978 Journal of Clinical Pharmacology 18(10):472-476
5062 Cerebrospinal/ventricular fluid		HPLC	5	a) Not given b) Not given	a) 5.25 + or - 3.5 mg/l b) 2.16 + or - 1.06 mg/l	a) Theophylline b) Caffeine Steady-state after theophylline: 5 mg/kg loading dose, 2 mg/kg/12 hr maintenance Data also given for caffeine doses. Premature 2-14 day olds, 27-30 wk gestational age, birth wt 1,019-1,529 g. NEWBORN; CAFFEINE; THEOPHYLLINES; BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS; DRUG THERAPY	Somani, S.M. Khanna, N.N. Bada, H.S. 1980 Journal of Pediatrics 96(6):1091-1093

(NEXT PAGE)

Theophylline (8 CI)
1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI)
58-55-9
C7-H8-N4-O2
MW 180.17, MP 270-274 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5063 Urine	Injection	Radiometry GC	3	a) 4.7-10.7% b) 5.3-11.2% c) 16.0-18.4% d) 19.4-23.2% e) 26.1-33.2% f) 33.9-38.3% g) 13.1-25.3% h) 14.6-20.5%	a) 7.3% b) 9.0% c) 17.1% d) 21.7% e) 29.4% f) 35.9% g) 18.3% h) 17.7%	a) Theophylline, usual diet b) Theophylline, methylxanthine-free diet c) 3-Methylxanthine (metabolite), usual diet d) 3-Methylxanthine (metabolite), methylxanthine-free diet e) 1,3-Dimethyluric acid (metabolite), usual diet f) 1,3-Dimethyluric acid (metabolite), methylxanthine-free diet g) 1-Methyluric acid (metabolite), usual diet h) 1-Methyluric acid (metabolite), methylxanthine-free diet 0-24 hr urines after 100 mg labelled dose Healthy 21-42 yr olds DRUGS; METABOLISM; RADIOISOTOPES; UNITED KINGDOM; DIETS; COMPARATIVE EVALUATIONS; ADULTS; CAFFEINE; THEOPHYLLINES; URINE; METABOLITES; ENZYMES	Monks, T.J. Caldwell, J. Smith, R.L. 1979 Clinical Pharmacology and Therapeutics 26(4):513-524

Thiopyrano(3,4-b)indole-1-ethanamine, 9-ethyl-1,3,4,9-tetrahydro-N,N,1-trimethyl-
42408-80-0
C18-H26-N2-S
MW 302.52

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5064 Blood, plasma	Injection	GC	9	a) 6-89 ng/ml b) 6-73 ng/ml	a) 50.22 ng/ml b) 43.89 ng/ml	a) 3 hr after 50 mg dose b) 4 hr after 50 mg dose Healthy 20-59 yr olds, London, England. Significant anticholinergic activity, reduction in appetite, sedation, inhibition of tyramine pressor response. DRUGS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS; UNITED KINGDOM	Ehsanullah, R.S.B. Ghose, K. Firby, M.J. Turner, P. Witts, D. 1977 Psychopharmacology 52:73-77

Thioxanthene-2-sulfonamide, N,N-dimethyl-9-(3-(4-methyl-1-piperazinyl)propylidene)- (8 CI)
9H-Thioxanthene-2-sulfonamide, N,N-dimethyl-9-(3-(4-methyl-1-piperazinyl)propylidene)- (9 CI)
5591-45-7
C23-H29-N3-O2-S2
MW 443.63, MP 147-152 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5065 Blood, plasma	Ingestion	Chem Fluorometry	21	10-155 ng/ml	Not applicable	Dose, 0.1-0.9 mg/kg, 3x/day for 9 wk. Considerable scatter. Average about 60 ng/ml. 21-65 yr old psychiatric patients No correlation between plasma levels and clinical effects. SWEDEN; ADULTS; NERVOUS SYSTEM DISEASES; BLOOD; BLOOD PLASMA; DRUG THERAPY; TRANQUILIZERS; COMPARATIVE EVALUATIONS; DRUGS	Bergling, R. Hjorndal, T. Oreland, L. Rapp, W. Wold, S. 1975 Journal of Clinical Pharmacology 15:178-186

Thymidine
50-89-5
C10-H14-N2-O5
MW 242.23, MP 185 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5066 Urine	Injection	HPLC	12	a) 12-30 nmoles/l b) 40-60 umoles/l	a) Not given b) Not given	a) Thymine at unspecified time b) Thymidine at unspecified time On 75 q/sq m/day as continuous IV for 5 days followed by 5 day rest period. 11-68 yr olds with advanced cancers. Nausea, vomiting, anorexia, diarrhea, indigestion, hiccoughs, somnolence, headache, illusion, memory ispairment. No complete or partial remissions noted. Myelosuppression, leukopenia, thrombocytopenia, anemia DRUGS; CHEMOTHERAPY; ENZYMES; NEOPLASMS; URINE; CHILDREN; ADULTS	Chiuten, D.F. Wiernik, P.H. Zaharko, D.S. Edwards, L. 1980 Cancer Research 40:812-822

Tubocurarine (8 CI) (VAN)
Tubocuraranium, 7',12'-dihydroxy-6,6'-dimethoxy-2,2',2'-trimethyl- (9 CI)
57-95-4
C37-H41-N2-O6
MW 609.80

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5067 Blood, plasma	Injection	RIA	10	a) 5-6 ug/ml b) 0.45-0.95 ug/ml c) 4-6.6 ug/ml d) 0.5-1.5 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) Normals, 3 min b) Normals, 120 min c) Renal failures, 3 min d) Renal failures, 120 min After single dose of 0.5 mg/kg, IV. Estimated from graphs. Data also given for 0.3 mg/kg dose. 5 normal, elective surgery patients and 5 patients with chronic end-stage renal failure, prior to kidney transplant. Temporary paralysis correlated with drug level. Half maximal effect at 0.38 + or - 0.03 ug/ml. DRUGS; DRUG THERAPY; MUSCLE RELAXANTS; BLOOD PLASMA; KIDNEY DISEASES; COMPARATIVE EVALUATIONS	Sheiner, L.B. Stanski, D.R. Vozeh, S. Miller, R.D. Ham, J. 1979 Clinical Pharmacology and Therapeutics 25(3):358-371

Uracil, 5-fluoro- (8 CI) (VAN)
2,4(1H,3H)-Pyrimidinedione, 5-fluoro- (9 CI)
51-21-8
C4-H3-F-N2
MW 130.08, MP 282-283 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5068 Blood, plasma	IP dialysis	HPLC	1	3.2X10(E-5)-1X10(E-7) moles/l	Not applicable	30 and 360 min after start of 4 hr, 2l dialysis containing 4 mmoles drug. Initial measurement, 6X10(E-6) moles/l. Peritoneal levels about 200-fold higher. Estimated from graph. Patient with maligant disease in intraabdominal space. Dose-limiting toxicity: myelosuppression, thrombocytopenia, mucositis. Nausea, rash, alopecia. Complete or partial remission in 2 with ovarian cancer. DRUGS; CHEMOTHERAPY; NAPYLAND; BLOOD PLASMA; PERITONEAL FLUID; NEOPLASMS	Speyer, J.L. Collins, J.M. DeMrick, R.L. Brennan, M.F. Buckpitt, A.R. Londer, H. DeVita, V.T., Jr. Myers, C.E. 1980 Cancer Research 40:567-572
5069 Blood, plasma	Injection Ingestion	HPLC	11	a) 6.4-29.5 ug/ml b) 3.2-17.8 ug/ml c) Not detectable-0.1 ug/ml d) 1.2-14.3 ug/ml e) 2.9-12.2 ug/ml f) 0.1-0.9 ug/ml	a) 13.4 + or - 9.4 ug/ml b) 7.4 + or - 6.1 ug/ml c) 0 ug/ml d) 5.6 + or - 4.9 ug/ml e) 7.4 + or - 3.8 ug/ml f) 0.3 + or - 0.3 ug/ml	a) 5 min after 250 mg, IV b) 10 min after 250 mg, IV c) 60 min after 250 mg, IV d) 10 min after 500 mg, oral e) 20 min after 500 mg, oral f) 60 min after 500 mg, oral. Carcinoma patients, after mastectomies, England. UNITED KINGDOM; ADULTS; CARCINOMAS; BLOOD PLASMA; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Phillips, T.A. Powell, A. Grieve, F.J. Welling, P.G. 1980 Journal of Pharmaceutical Sciences 69(12):1428-1431

(NEXT PAGE)

Uracil, 5-fluoro- (8 CI) (VAN)
2,4(1H,3H)-Pyrimidinedione, 5-fluoro- (9 CI)
51-21-8
C4-H3-F-N2
MW 130.08, MP 282-283 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5070 Peritoneal fluid	IP dialysis	HPLC	10	Not given	17.6 + or - 7.9% of instilled concentration	4 hr after 21 dialysate containing 5 uM-8 mM drug. Monoexponential decline Patients with malignant disease in intraabdominal space. Dose-limiting toxicity: myelosuppression, thrombocytopenia, mucositis. Nausea, rash, alopecia. Complete or partial remission in 2 with ovarian cancer. DRUGS; CHEMOTHERAPY; MARYLAND; BLOOD PLASMA; PERITONEAL FLUID; NEOPLASMS	Speyer, J.L. Collins, J.M. Dedrick, R.L. Brennan, M.F. Buckpitt, A.R. Londer, H. DeVita, V.T., Jr. Myers, C.E. 1980 Cancer Research 40:567-572

Uracil, 6-propyl-2-thio- (8 CI)
4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo- (9 CI)
51-52-5
C7-H10-N2-O-S
MW 170.25

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5071 Blood, serum	Ingestion	Radiometry	1	0.0018-0.0002% radioactive dose/ml	Not given	6 and 24 hr after 100 mg propylthiouracil containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 0.55. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011
5072 Milk	Ingestion	Radiometry	1	0.0003-0.0001% radioactive dose/ml	Not given	6 and 24 hr after 100 mg propylthiouracil containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 0.55. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011

Urea, 1-((p-chlorophenyl)sulfonyl)-3-propyl- (8 CI)
Benzenesulfonamide, 4-chloro-N-((propylamino)carbonyl)- (9 CI)
94-20-2
C10-H13-Cl-N2-O3-S
MW 276.75, MP 127-129 C (also reported 125-127 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5073 Blood, serum	Ingestion	GC	97	36-667 umol/l	Not given	Doses of 125-500 mg 33-90 yr old patients with maturity-onset diabetes DRUGS; DIABETES; BLOOD SERUM; SWEDEN	Bergman, U. Christenson, I. Jansson, B. Wiholm, B.-E. Ostman, J. 1980 European Journal of Clinical Pharmacology 18:165-169

Valeric acid, 2-propyl- (8 CI)
Pentanoic acid, 2-propyl- (9 CI)
99-66-1
C8-H16-O2
FW 144.21, BP 120-121 C at 14 mm Hg, 128-130 C at 20 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5074 Blood, plasma	Ingestion	GC	76	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 65.1 + or - 20.3 ug/ml b) 91.7 + or - 35.2 ug/ml c) 54.6 + or - 26.5 ug/ml d) 33.8 + or - 28.2 ug/ml e) 63.1 + or - 51.9 ug/ml f) 43.8 + or - 24.8 ug/ml	a) After 785 + or - 259 mg/day, seizures controlled b) After 785 + or - 259 mg/day, seizures not controlled c) After 1002 + or - 415 mg/day + phenobarbital, seizures controlled d) After 1002 + or - 415 mg/day + phenobarbital, seizures not controlled e) After 1268 + or - 618 mg/day + several anticonvulsants, seizures controlled f) After 1268 + or - 618 mg/day + several anticonvulsants, seizures not controlled Epileptic children, Federal Republic of Germany Increased appetite and weight gain, gastrointestinal disturbances, transient hair loss, fatigue GERMANY; CHILDREN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANTICONVULSANTS; COMPARATIVE EVALUATIONS	Klotz, U. Schweizer, C. 1980 International Journal of Clinical Pharmacology, Therapy and Toxicology 18(10):461-465
5075 Blood, plasma	Ingestion	GC	6	31.8-52 ug/ml	Not given	0 and 10 hr after 250 mg 2x/day for 2.5 days. Peak at 1 hr, 38.5 ug/ml at 10 hr. Estimated from graph. Normal 25-40 yr old Caucasians, free of any drug. DRUGS; DRUG INTERACTION; ADULTS; BLOOD PLASMA; SEDATIVES; HYPNOTICS; ANTICONVULSANTS; METABOLISM	Patel, I.H. Levy, R.H. Cutler, R.E. 1980 Clinical Pharmacology and Therapeutics 27(4):515-521
5076 Blood, serum	Ingestion	GC	6	a) Not given b) Not given	a) 34.4 + or - 5.1 ug/ml b) 27.1 + or - 4.4 ug/ml	a) Day 4 b) Day 22 Minimum steady-state levels on 250 mg/12 hr on days 1-22 and 200 mg/day carbamazepine days 5-22. Day 4 & 22 levels different, P<0.0005. Normal 22-33 yr olds, no other drugs or alcohol. DRUGS; DRUG INTERACTION; ANTICONVULSANTS; BLOOD SERUM; ADULTS	Bowdle, T.A. Levy, R.H. Cutler, R.E. 1979 Clinical Pharmacology and Therapeutics 26(5):629-634

Valeric acid, 2-propyl-, sodium salt (8 CI)
Pentanoic acid, 2-propyl-, sodium salt (9 CI)
1069-66-5
C8-H16-O2.Na
MW 167.23

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5077 Blood, plasma	Ingestion	GC	10	a) 282-611 umoles/l b) 462-1142 umoles/l c) 335-842 umoles/l	a) 397 + or - 109 umoles/l b) 679 + or - 235 umoles/l c) 506 + or - 157 umoles/l	a) Range of minimums b) Range of maximums c) Range of means After six months on daily maintenance doses calculated (from single-dose (600 mg) data) to yield means of 521 umoles/l. Time to peak after single dose, 1.6 + or - 1.0 hr. 9-67 yr old epileptics, wt 27-91 kg. DRUGS; DRUG THERAPY; ANTICONVULSANTS; BLOOD PLASMA; AUSTRALIA; COMPARATIVE EVALUATIONS; DISEASES	Schapel, G.J. Beran, R.G. Doecke, C.J. O'Reilly, W.J. Reece, P.A. Rischbieth, R.H.C. Sansom, L.N. Stanley, P.E. 1980 European Journal of Clinical Pharmacology 17:71-77

Valeronitrile, 5-((3,4-dimethoxyphenethyl)methylamino)-2-(3,4-dimethoxyphenyl)-2-isopropyl- (8 CI)
Benzeneacetonitrile, alpha-(3-((2-(3,4-dimethoxyphenyl)ethyl)methylamino)propyl)-3,4-dimethoxy-alpha-(1-methylethyl)- (9 CI)
52-53-9
C27-H38-N2-O4
MW 454.59, BP 243-246 C at 0.01 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5078 Blood, plasma	Injection	Fluorometry	a) 9 b) 6	a) Not given b) Not given	a) 52 + or - 7 ng/ml b) 95 + or - 16 ng/ml SE	a) Responders, dose 0.066 +or- 0.099 mg/kg b) Non-responders, dose 0.189 +or- 0.028 mg/kg Responders had ventricular rate of < 100/min after < 5 mg. Non-responders had ventricular rate > 100/min after dose of up to 5 mg. 20-70 yr old patients with atrial fibrillation or atrial flutter. Decrease in ventricular rate. Transient decrease in systolic blood pressure in some. DRUGS; BLOOD PLASMA; HEART DISEASES; BLOOD PRESSURE; ADULTS	Dominic, J. McAllister, R.G. Kuo, C.-S. Reddy, C.P. Surawicz, B. 1979 Clinical Pharmacology and Therapeutics 26(6):710-714

1-Adamantanamine (8 CI)
Tricyclo(3.3.1.1(3,7))decan-1-amine (9 CI)
768-94-5
C10-H17-N
MW 151.26, MP 160-190 C, 180-192 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5079 Blood, plasma	Ingestion	GC	a) 4 b) 4 c) 5	a) 65-134 ng/ml b) 275-467 ng/ml c) 597-1373 ng/ml	a) 103 ng/ml b) 324 ng/ml c) 1282 ng/ml Medians	a) Dose of 0.39-0.47 mg/kg/12 hr b) Dose of 1.29-1.64 mg/kg/12 hr c) Dose of 2.07-2.80 mg/kg/12 hr Levels throughout dose interval at steady state Healthy 19-36 yr olds, wt 51-79.5 kg, fasted before and after dose DRUGS; BLOOD PLASMA; URINE; CANADA; ADULTS	Aoki, F.Y. Sitar, D.S. Ogilvie, R.I. 1979 Clinical Pharmacology and Therapeutics 26(6):729-736

(NEXT PAGE)

1-Adamantanamine (8 CI)
Tricyclo(3.3.1.1(3,7))decan-1-amine (9 CI)
768-94-5
C10-H17-N
MW 151.26, MP 160-190 C, 180-192 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5080 Urine	Ingestion	GC	a) 4 b) 4 c) 5	a) 0.68-1.84% of dose b) 0.85-1.41% of dose c) 0.11-1.47% of dose	a) 1.07 + or - 0.53% of dose b) 1.075 + or - 0.24% of dose c) 0.666 + or - 0.55% of dose	a) Dose of 0.39-0.47 mg/kg/12 hr b) Dose of 1.29-1.64 mg/kg/12 hr c) Dose of 2.07-2.80 mg/kg/12 hr Excretion on day 15 Healthy 19-36 yr olds, wt 51-79.5 kg, fasted before and after dose DRUGS; BLOOD PLASMA; URINE; CANADA; ADULTS	Aoki, F.Y. Sitar, D.S. Ogilvie, R.I. 1979 Clinical Pharmacology and Therapeutics 26(6):729-736

1-Propanone, 1-(4-(m-hydroxyphenyl)-1-methyl-4-piperidyl)- (8 CI)
1-Propanone, 1-(4-(3-hydroxyphenyl)-1-methyl-4-piperidinyl)- (9 CI)
469-79-4
C15-H21-N-02
MW 247.33, MP 156-157 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5081 Blood, plasma	Injection Ingestion	GC/MS	5	a) 20.7-49.8 ng/ml b) 8.97-12.69 ng/ml	a) 35.1 + or - 5.92 ng/ml b) 10.79 + or - 1.86 ng/ml	a) 0-6 hr average levels. 10 mg IV after recovery from anesthesia, 4 patients b) 0-8 hr average levels. 10 mg, orally, 2 days post-surgery, 3 patients Computed from area-under-the-curve data. Knee-surgery patients, ages 20.7-48.0 yr, weights 55-82 kg. SWEDEN; BLOOD PLASMA; ANALGESICS; DRUGS; NARCOTICS; SURGERY	Bondesson, U. Arner, S. Anderson, P. Boreus, L.O. Hartvig, P. 1980 European Journal of Pharmacology 17:45-50

1,2-Propanediol, 3-(p-chlorophenoxy)-, 1-carbamate (8 CI)
1,2-Propanediol, 3-(4-chlorphenoxy)-, 1-carbamate (9 CI)
886-74-8
C10-H12-Cl-N-04
MW 245.68, MP 89-91 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5082 Blood, serum	Ingestion	GC	4	9.29-3.4 ug/ml	Not applicable	Range of means 1 and 8 hr after last of multiple dose regimen (400 mg/6 hr). Initial value, 5.35 ug/ml at 0 hr. Normal 28-37 yr olds. DRUGS; MEASUREMENT METHODS; BLOOD SERUM; ADULTS; CHLORINE ORGANIC COMPOUNDS	Kaiser, D.G. Shaw, S.R. 1974 Journal of Pharmaceutical Sciences 63(7):1094-1097

1,4-Naphthalenedione, 2-(3,3-dichloro-2-propenyl)-3-hydroxy-
36417-16-0
C13-H8-Cl2-03
MW 283.11

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5083 Blood, plasma	Injection	Radiometry	3	2.9-0.88 ug/ml	Not applicable	Initial measurement and 24 hr after 10 mg/sq m, IV. Cancer patients DRUGS; BLOOD PLASMA; URINE; NEOPLASMS; CHEMOTHERAPY	McKelvey, E.M. Lomedico, M. Lu, K. Chadwick, M. Loo, T.L. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):586-590
5084 Urine	Injection	Radiometry	a) 6 b) 4	a) 23.5-48.7% of dose b) 7.4-14.2% of dose	a) 33.1 + or - 3.5% of dose b) 11.7 + or - 5.9% of dose	a) Cumulative excretion of labelled drug, 0-4 hr after 10 mg/sq m, IV b) Cumulative excretion of unchanged drug 24 hr after 10 mg/sq m, IV Cancer patients DRUGS; BLOOD PLASMA; URINE; NEOPLASMS; CHEMOTHERAPY	McKelvey, E.M. Lomedico, M. Lu, K. Chadwick, M. Loo, T.L. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):586-590

1alphaH,5alphaH-Tropan-3alpha-ol, 6beta,7beta-epoxy-, (-)-tropate (ester) (8 CI)
Benzeneacetic acid, alpha-(hydroxymethyl)-, 9-methyl-3-oxa-9-azatricyclo(3.3.1.0(2,4))non-7-yl ester, (7(S)-(1alpha,2beta,4beta,5alpha,7beta))- (9 CI)
51-34-3
C17-H21-N-04
MW 303.35, MP 59 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5085 Urine	Injection Dermal			a) 7.8-1.0 ug/hr b) 0.52-0.45 ug/hr	a) Not given b) Not given	a) 2-3 and 5 hr after 200 ug IM as hydrobromide b) 12 and 72 hr during transdermal application, estimated dose 0.5 mg over 3 days Estimated from graph Healthy 16-55 yr olds with histories of motion sickness Side effects: dry mouth, drowsiness, blurred vision ADULTS; URINE; DRUG THERAPY; DRUGS	Price, N.M. Schmitt, L.G. McGuire, J. Shaw, J.E. Trobough, G. 1981 Clinical Pharmacology and Therapeutics 29(3):414-419

1alphaH,5alphaH-Tropane-2beta-carboxylic acid, 3beta-hydroxy-, methyl ester, benzoate (ester) (8 CI)
8-Azabicyclo(3.2.1)octane-2-carboxylic acid, 3-(benzoyloxy)-8-methyl-, methyl ester, (1R-(exo,exo))- (9 CI)
50-36-2
C17-H21-N-04
MW 303.35, MP 98 C, BP 187-188 C at 0.1 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5086 Blood, plasma	Ingestion Intranasal	GC	7	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 12.9 + or - 2.2 ng/ml b) 31.3 + or - 3.0 ng/ml c) 44.9 + or - 6.8 ng/ml d) 170.4 + or - 62.5 ng/ml e) 242.0 + or - 67.3 ng/ml SE	a) 41.2 min after 0.19 mg/kg, intranasal solution, 4 subjects b) 47.1 min after 0.38 mg/kg, intranasal solution, 7 subjects c) 35.0 min after 0.38 mg/kg, intranasal (crystals), 3 subjects d) 90.7 min after 2.0 mg/kg, intranasal solution, 5 subjects e) 65.0 min after 2.0 mg/kg, gelatin capsule, 4 subjects Mean peaks and times after cocaine as the hydrochloride Healthy cocaine users, ages 24-33 yr, weighing 61-120 kg DRUGS; PSYCHOTROPIC DRUGS; ADULTS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS	Wilkinson, P. Van Dyke, C. Jatlow, P. Barash, P. Byck, R. 1980 Clinical Pharmacology and Therapeutics 27(3):386-394

18,19-Dinor-17alpha-pregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (+-)- (8 CI)
18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17alpha)-(+-)- (9 CI)
6533-00-2
C21-H28-02
MW 312.44, MP 238-242 C (+ form), 239-241 C (- form)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5087 Blood, plasma	Ingestion	RIA	15	a) 1.55-7.55 ng/ml b) 0.95-2.90 ng/ml c) 1.52-4.80 ng/ml d) 0.24-1.20 ng/ml e) 0.24-0.87 ng/ml f) 0.12-0.20 ng/ml	a) 3.90 ng/ml b) 1.90 ng/ml c) 3.10 ng/ml d) 0.79 ng/ml e) 0.43 ng/ml f) 0.16 ng/ml	a) 3 hr after 250 ug + 50 ug ethinyl estradiol b) 23 hr after 250 ug + 50 ug ethinyl estradiol c) 3 hr after 150 ug + 30 ug ethinyl estradiol d) 23 hr after 150 ug + 30 ug ethinyl estradiol e) 3 hr after 30 ug f) 23 hr after 30 ug Lactating females in Sweden SWEDEN; ADULTS; BLOOD PLASMA; MILK; PROGESTOGENS; COMPARATIVE EVALUATIONS; LACTATION	Nilsson, S. Nygren, K. Johansson, E.D.B. 1977 American Journal of Obstetrics and Gynecology 129:178-184

(NEXT PAGE)

18,19-Dinor-17alpha-pregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (+-)- (8 CI)
18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17alpha)-(+-)- (9 CI)
6533-00-2
C21-H28-O2
MW 312.44, MP 238-242 C (+ form), 239-241 C (- form)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5088 Milk	Ingestion	RIA	15	a) 0.16-1.50 ng/ml b) 0.29-2.50 ng/ml c) 0.08-0.45 ng/ml d) 0.16-0.63 ng/ml e) 0.11-0.66 ng/ml f) 0.22-1.10 ng/ml g) 0.06-0.20 ng/ml h) 0.10-0.30 ng/ml i) None detected j) None detected	a) 0.51 ng/ml b) 1.05 ng/ml c) 0.22 ng/ml d) 0.38 ng/ml e) 0.34 ng/ml f) 0.54 ng/ml g) 0.11 ng/ml h) 0.17 ng/ml i) Not applicable j) Not applicable	a) Prenursing, 3 hr after 250 ug + 50 ug ethinyl estradiol b) Postnursing, 3 hr after 250 ug + 50 ug ethinyl estradiol c) Prenursing, 23 hr after 250 ug + 50 ug ethinyl estradiol d) Postnursing, 23 hr after 250 ug + 50 ug ethinyl estradiol e) Prenursing, 3 hr after 150 ug + 30 ug ethinyl estradiol f) Postnursing, 3 hr after 150 ug + 30 ug ethinyl estradiol g) Prenursing, 23 hr after 150 ug + 30 ug ethinyl estradiol h) Postnursing, 23 hr after 150 ug + 30 ug ethinyl estradiol i) Prenursing, 3 hr after 30 ug j) Postnursing, 3 hr after 30 ug Milk expressed before and after feeding time Lactating females in Sweden SWEDEN; ADULTS; BLOOD PLASMA; MILK; PROGESTOGENS; COMPARATIVE EVALUATIONS; LACTATION	Nilsson, S. Wygren, K. Johansson, E.D.B. 1977 American Journal of Obstetrics and Gynecology 129:178-184

2(1H)-Isoquinolinecarboxamidine, 3,4-dihydro- (8 CI)
2(1H)-Isoquinolinecarboximidamide, 3,4-dihydro- (9 CI)
1131-64-2
C10-H13-N3
MW 175.23

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5089 Urine	Ingestion	GC-EC	80	a) 1.6-56.9% of dose b) 0.4-37.9% of dose c) 3.0-88.3% of dose	a) 15.29% + or - 12.04% of dose b) 8.260 + or - 6.916% of dose c) 23.515 + or - 15.026% of dose	a) Debrisoquin b) 4-OH debrisoquin c) Debrisoquin + 4-OH debrisoquin 0-8 hr excretions after 12.8 mg as sulfate. Healthy, 18-65 yr old Ghanaians, fasted before dose. DRUGS; GHANA; URINE; METABOLISM; METABOLITES; ADULTS	Woolhouse, N.M. Andoh, B. Mahgoub, A. Sloan, T.P. Idle, J.R. Smith, R.L. 1979 Clinical Pharmacology and Therapeutics 26(5):584-591
5090 Urine	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 48% of dose (9.6 mg) b) < 1% of dose (< 0.2 mg)	a) As debriscquine b) As 4-hydroxydebrisoquine 0-8 hr cumulative excretion after 20 mg as hemisulfate 70 kg, white male phenotyped as "poor metabolizer" according to capacity to 4-hydroxylate debrisoquine and sparteine. DRUGS; METABOLISM; METABOLITES; URINE; COMPARATIVE EVALUATIONS; SEDATIVES; HYPNOTICS; ANTIPYRETICS; ANTIHYPERTENSIVE AGENTS; ANTIARRHYTHMIC AGENTS	Inaba, T. Ofton, S.V. Kalow, W. 1980 Clinical Pharmacology and Therapeutics 27(4):547-549

2-Butanol, 4-(dimethylamino)-3-methyl-1,2-diphenyl-, propionate (ester), (2S,3R)- (8 CI)
Benzeneethanol, alpha-(2-(dimethylamino)-1-methylethyl)-alpha-phenyl-, propanoate (ester), (S-(R*,S*))- (9 CI)
469-62-5
C22-H29-N-O2
MW 339.48, MF 75-76 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5091 Blood	Ingestion	TLC IR GC	16	0.15-5.8 mg/100 ml	1.03 mg/100 ml	Fatal cases in which only propoxyphene found. Coroners' cases, ages 2-62 yr, from 3 California counties. Cause of death, suicide, accidental, or undetermined. LIVER; DRUGS; BLOOD; ALCOHOLS; CASE HISTORIES; SUICIDE; DRUG ABUSE; CHILDREN; ADULTS	Cravey, R.H. Shaw, R.F. Nakamura, G.R. 1974 Journal of Forensic Sciences 19(1):72-80
5092 Blood	Ingestion	GC	30	0.13-2.44 mg/dl	0.60 + or - 0.51 mg/dl	Dextropropoxyphene poisoning fatalities. Alcohol and/or other drugs in most cases. Coroners cases, ages 16-67 yr, Northern Ireland Coma, death Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND; CASE HISTORIES; FORENSIC MEDICINE	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
5093 Blood, plasma	Ingestion	GC	14	a) 150-7 ng/l b) 78-3.4 ng/ml c) 280-95 ng/ml d) 180-38 ng/ml	a) 63.5 ng/ml b) 36.17 ng/ml c) 170.8 ng/ml d) 109.17 ng/ml	a) 7 anephrics, 1 and 24 hr after dose. Initial measurement, 135 ng/ml b) 7 controls, 1 and 24 hr after dose. Initial measurement, 50 ng/ml c) Norpropoxyphene in 7 anephrics, 3 and 24 hr after dose. Initial measurement, 57 ng/ml d) Norpropoxyphene in 7 controls, 2.5 and 24 hr after dose. Initial measurement, 40 ng/ml Dose, 130 mg. Means are time-averagesslt, 0-12 hr for drug, 0-24 hr for metabolite, all corrected to 70 kg body wt. Some values estimated from graphs. Anephric 23-55 yr olds wt 49-94 kg. 29-36 yr old controls, wt 78-86 kg. Fasted before and after dose. ANALGESICS; DRUGS; BLOOD PLASMA; KIDNEY DISEASES; NARCOTICS; DISTRICT OF COLUMBIA; COMPARATIVE EVALUATIONS; SMOKING; ADULTS	Gibson, T.P. Giacomini, K.M. Briggs, W.A. Whitman, W. Levy, G. 1980 Clinical Pharmacology and Therapeutics 27(5):665-670
5094 Blood, plasma	Ingestion	GC/MS	8	a) 290->1000 nmoles/l b) 620-920 nmoles/l	a) Not given b) Not given	a) d-Propoxyphene b) Metabolite, norpropoxyphene Peaks, at about 2.5 hr after 190 mg. Data also for 65 and 130 mg, oral, and 65 mg, IV. Estimated from graphs. Healthy 21-29 yr olds. DRUGS; ANALGESICS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS; URINE; METABOLITES; RADIOISOTOPES	Gram, L.F. Schou, J. Way, W.L. Heltberg, J. Rodin, N.O. 1979 Clinical Pharmacology and Therapeutics 26(4):473-482

(NEXT PAGE)

2-Butanol, 4-(dimethylamino)-3-methyl-1,2-diphenyl-, propionate (ester), (2S,3R)- (8 CI)
Benzeneethanol, alpha-[2-(dimethylamino)-1-methylethyl)-alpha-phenyl-, propanoate (ester), (S-(R*,S*))- (9 CI)
469-62-5
C22-H29-N-02
MW 339.48, MP 75-76 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5095 Blood, plasma	Ingestion	GC	10	85-10 ng/ml	Not applicable	1 and 12 hr after 65 mg dose as hydrochloride 1x/wk, 10 wk Healthy 25-34 yr old men, average wt 84.8 kg BLOOD; BLOOD PLASMA; ANALGESICS; DRUG THERAPY; COMPARATIVE EVALUATIONS	Slywka, G.W.A. Melikian, A.P. Whyatt, P.L. Meyer, M.C. 1975 Journal of Clinical Pharmacology 15(8,9):598-604
5096 Blood, whole	Ingestion	GC	4	a) 93.75-338.75 ng/ml b) 99.38-318.75 ng/ml c) 618.75-1362.5 ng/ml d) 647.5-1450 ng/ml	a) 217.5 ng/ml b) 217.5 ng/ml c) 1013.75 ng/ml d) 1025.0 ng/ml	a) Propoxyphene, before hemodialysis b) Propoxyphene, during hemodialysis c) Norpropoxyphene, before hemodialysis d) Norpropoxyphene, during hemodialysis 130 mg propoxyphene/8 hr, 7 doses. 3-6 hr dialysis following each dose. Administered as hydrochloride. Anephric 36-55 yr olds. DRUGS; BLOOD; COMPARATIVE EVALUATIONS; ADULTS; METABOLITES; ERYTHROCYTES; KIDNEY DISEASES; HEMODIALYSIS	Giacomini, K.M. Gibson, T.P. Levy, G. 1980 Clinical Pharmacology and Therapeutics 27(4):508-514
5097 Liver	Ingestion	TLC IR GC	a) 16 b) 64	a) 1.2-35.3 mg/100 g b) 0.2-38.4 mg/100 g	a) 11.78 mg/100 g b) 9.32 mg/100 g	a) Fatal cases in which only propoxyphene found b) Alcohol and propoxyphene found Multiple drugs found in many cases. In 9 cases of known dosage, fatal dose was 15-65 mg/kg. Coroners' cases, ages 2-62 yr, from 3 California counties. Cause of death, suicide, accidental, or undetermined. LIVER; DRUGS; BLOOD; ALCOHOLS; CASE HISTORIES; SUICIDE; DRUG ABUSE; CHILDREN; ADULTS	Cravey, R.H. Shaw, R.F. Nakamura, G.R. 1974 Journal of Forensic Sciences 19(1):72-80
5098 Urine	Ingestion	GC	17	0.04-6.99 mg/dl	1.61 + or - 2.04 mg/dl	Dextropropoxyphene poisoning fatalities. Alcohol and/or other drugs in most cases. Coroners' cases, ages 16-67 yr, Northern Ireland Coma, death. Congestion and edema of lungs. In some, cerebral edema. DRUGS; BLOOD; URINE; SUICIDE; DRUG ABUSE; IRELAND	Carson, D.J.L. Carson, E.D. 1977 Lancet 1(8017):894-897
5099 Urine	Injection Ingestion	Radiometry	8	55-75% of total radioactivity	Not given	0-7 day cumulative excretion after doses of 65, 130 and 190 mg, oral, and 65 mg IV of 14C-labelled drug (3 uCi). Healthy 21-29 yr olds. DRUGS; ANALGESICS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS; URINE; METABOLITES; RADIOISOTOPES	Gram, L.F. Schou, J. Way, W.L. Heltberg, J. Bodin, N.O. 1979 Clinical Pharmacology and Therapeutics 26(4):473-482

2-Naphthaleneacetic acid, 6-methoxy-alpha-methyl-, (+)- (8 CI)
2-Naphthaleneacetic acid, 6-methoxy-alpha-methyl-, (S)- (9 CI)
22204-53-1
C14-H14-O3
MW 230.26, MP 155.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5100 Blood, plasma	Ingestion	GC	6	a) Not given b) Not given	a) 67 ug/ml b) 62 ug/ml	a) Mean peak at 1 hr, 500 mg dose b) Mean peak at 2 hr, 500 mg dose plus 1200 mg aspirin Estimated from graph. Area-under-the-curve reduced by aspirin, P<0.05. Healthy 23-40 yr olds, fasted overnight. DRUGS; DRUG INTERACTION; ANTI-INFLAMMATORY AGENTS; ADULTS; FECES; BLOOD PLASMA; COMPARATIVE EVALUATIONS	Segre, E.J. Chaplin, M. Forchielli, E. Runkel, R. Sevelius, H. 1974 Clinical Pharmacology and Therapeutics 15(4):374-379
5101 Blood, serum	Ingestion	HPLC	5	Not given	46.1 + or - 5.6 ug/ml	Steady state levels following 375 mg/12 hr on days 11 to 20 of maintenance dose of warfarin (10 mg daily). No effect on bound or free steady-state warfarin levels. No effect on prothrombin times. Healthy 25-65 yr olds, wt 74.1-88.5 kg. DRUGS; ANTICOAGULANTS; ANTI-INFLAMMATORY AGENTS; BLOOD SERUM; ADULTS; COMPARATIVE EVALUATIONS	Jain, A. McMahon, F.G. Slattery, J.T. Levy, G. 1979 Clinical Pharmacology and Therapeutics 25(1):61-66

2-Piperidineacetic acid, alpha-phenyl-
19395-41-6
C13-H17-N-O2
MW 219.31

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5102 Blood, serum	Ingestion	HPLC	2	a) 590-200 ug/l b) 0-320 ug/l	a) Not given b) Not given	a) 1.0 and 3.5 hr after methylphenidate, 35 mg 3X/day. Initial measurement, 220 ug/l b) Initial measurement and 2.25 hr after methylphenidate, 10 mg 3X/day. Final measurement, 210 ug/l at 4 hr Estimated from graph Ritalinic acid metabolite of methylphenidate Hyperactive 9 and 14 yr olds CHILDREN; BEHAVIOR DISORDERS; BLOOD SERUM; ANTIDEPRESSIVE AGENTS; DRUGS; MEASUREMENT METHODS; METABOLISM; METABOLITES	Soldin, S.J. Hill, B.M. Chan, Y.-P.M. Swanson, J.M. Hill, J.G. 1979 Clinical Chemistry 25(1):51-54
5103 Blood, serum	Ingestion	HPLC	1	0-85 ug/l	Not applicable	Initial value and 2.0 hr after 15 mg dose of methylphenidate. Final value 25 ug/l after 8.5 hr. Estimated from graph. Ritalinic acid metabolite of methylphenidate. Hyperactive 12 yr old CHILDREN; BEHAVIOR DISORDERS; BLOOD SERUM; ANTIDEPRESSIVE AGENTS; DRUGS; MEASUREMENT METHODS; METABOLISM; METABOLITES	Soldin, S.J. Chan, Y.-P.M. Hill, B.M. Swanson, J.M. 1979 Clinical Chemistry 25(3):401-404

2-Piperidineacetic acid, alpha-phenyl-, methyl ester
113-45-1
C14-H19-N-O2
MW 233.30, MP 74-75 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5104 Blood, serum	Ingestion	HPLC	1	a) 65-0 ug/l b) 82-28 ug/l	a) Not given b) Not given	a) 30 min and 7 hr after 15 mg b) Ritalinic acid (metabolite), 2.5 and 8.5 hr after 15 mg methylphenidate Estimated from graph Hyperactive 12 yr old CHILDREN; BEHAVIOR DISORDERS; BLOOD SERUM; ANTIDEPRESSIVE AGENTS; DRUGS; MEASUREMENT METHODS; METABOLISM; METABOLITES	Soldin, S.J. Chan, Y.-P.M. Hill, B.M. Swanson, J.M. 1979 Clinical Chemistry 25(3):401-404

2-Propanol, 1-(isopropylamino)-3-(1-naphthyloxy)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(1-naphthalenyloxy)- (9 CI)
525-66-6
C16-H21-N-O2
MW 259.34, MP 96 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5105 Blood, plasma	Ingestion	Fluorometry	12	a) 17-140 ng/ml b) Not given c) Not given	a) 48.8 ng/ml b) 77.2 + or - 11.1 ng/ml c) 41.4 + or - 9.4 ng/ml	a) Before surgery b) At the end of surgery, corrected for dilution c) 10 min after bypass discontinued Dose, 40-320 mg/day to 12 hr before surgery. b) different from a) and c), p <0.05. Adults on long-term propranalol therapy for angina pectoris, undergoing aorta to coronary artery-saphenous vein bypass surgery. DRUGS; DRUG THERAPY; BLOOD PLASMA; ADULTS; HEART DISEASES; SURGERY	McAllister, R.G., Jr. Bourne, D.W. Tan, T. G. Erickson, J.L. Wachtel, C.C. Todd, E.P. 1979 Clinical Pharmacology and Therapeutics 25(1):1-7
5106 Blood, plasma	Ingestion			a) 571-24 nmoles/l b) 79-44 nmoles/l	a) Not given b) Not given	a) 2 and 24 hr means after 16 mg/days b) 16 and 24 hr means after 160 mg/day in slow-release form. 66 nmoles/l at 2 hr Healthy 20-30 yr olds, within 10% of normal weight. Reduced resting heart rate and exercise-induced tachycardia. Reduced blood pressure. DRUGS; SWEDEN; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; ADULTS; BLOOD PRESSURE	Johansson, S.R. McCall, M. Wilhelmsson, C. Vedin, J.A. 1980 Clinical Pharmacology and Therapeutics 27(5):593-601
5107 Blood, plasma	Ingestion Injection	GC/MS	5	a) 13-1.4 ng/ml b) 8.0-1.1 ng/ml c) 55-3.7 ng/ml	a) Not given b) Not given c) Not given	a) Initial measurement and 12 hr after 0.05 mg/kg IV, 3 subjects b) 2 and 16 hr after 20 mg, oral. Initial measurement, 1.3 ng/ml c) 2 and 16 hr after 80 mg, oral. Initial measurement, 5.4 ng/ml Range of means estimated from graphs. Data also available for long-term doses and for napthoxylactic acid (metabolite). Healthy, 22-30 yr olds, wt 62-83 kg. DRUGS; METABOLITES; ANTIHYPERTENSIVE AGENTS; BLOOD PLASMA; URINE	Walle, T. Conradi, E.C. Walle, U.K. Fagan, T.C. Gaffney, T.E. 1979a Clinical Pharmacology and Therapeutics 26(5):548-554

2-Propanol, 1-(isopropylamino)-3-(1-naphthyloxy)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(1-naphthalenyloxy)- (9 CI)
525-66-6
C16-H21-N-02
MW 259.34, MP 96 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5108 Blood, plasma	Ingestion	Fluorometry	5	a) 45-222 ng/ml b) 37-244 ng/ml	a) 169 + or - 72 ng/ml b) 169 + or - 79 ng/ml	a) Propranolol b) Propranolol + quinidine Average steady state 0-6 hr after 80-mg dose. Quinidine dose, 200 mg. Healthy 22-46 yr olds. DRUGS; DRUG INTERACTION; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; ADULTS	Fenster, P. Perrier, D. Mayersohn, M. Marcus, F.I. 1980 Clinical Pharmacology and Therapeutics 27(4):450-453
5109 Blood, plasma		GC	25	5-121 ng/ml	Not given	Dose, 160 mg/day. Thyrotoxic 17-65 yr olds. Nausea, lethargy, insomnia, lightheadedness, and diarrhea. Decreased heart rate. Wt change significantly related to plasma levels. UNITED KINGDOM; BLOOD PLASMA; DRUG THERAPY; DRUGS	Feely, J. Stevenson, I.H. Crooks, J. 1980 Clinical Pharmacology and Therapeutics 28(1):40-44
5110 Blood, plasma	Ingestion	HPLC		a) 2-7 ng/ml b) 13-51 ng/ml c) 57-279 ng/ml d) 19-174 ng/ml e) 534-170 ng/ml f) 1667-509 ng/ml g) 15-8 ng/ml h) 4372-4288 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not applicable h) Not applicable	a) 0.5 and 2 hr after 20 mg. 3 ng/ml at 8 hr b) 0.5 and 2 hr after 80 mg. 18 ng/ml at 8 hr c) 0.5 and 2 hr after 320 mg. 118 ng/ml at 8 hr d) Naphthoxylactic acid (NLA), metabolite, 0.5 and 2 hr after 20 mg. 40 ng/ml at 8 hr e) NLA 2 and 8 hr after 80 mg. 242 ng/ml at 0.5 hr f) NLA 2 and 8 hr after 320 mg. 705 ng/ml at 0.5 hr g) Before and after hemodialysis, unspecified doses h) NLA before and after hemodialysis Given as hydrochloride a)-f) Normal males. Other metabolites also measured. 6 normal 23-32 yr old males, fasted before and after dose. 14 21-65 yr olds on long-term hemodialysis. ANTIHYPERTENSIVE AGENTS; DRUGS; METABOLITES; BLOOD PLASMA; PROTEINS; URINE; KIDNEY DISEASES; HEMODIALYSIS; ADULTS	Schneck, D.W. Pritchard, J.F. Gibson, T.P. Vary, J.E. Hayes, A.H., Jr. 1980 Clinical Pharmacology and Therapeutics 27(6):744-755
5111 Blood, plasma	Ingestion	Fluorometry	7	a) Not given b) Not given c) Not given	a) 47.4 + or - 15.2 ng/ml b) 93.5 + or - 44.8 ng/ml c) 115.1 + or - 56 ng/ml	a) Peak, propranolol only b) Peak, propranolol + 25 mg hydralazine c) Peak, propranolol + 50 mg hydralazine Data also for absorption studies. Normotensive 19-31 yr olds, wt 46-90 kg, fasted before dose. Decreased pulse rate, blood pressure. Faintness with hydralazine plus drug. ANTIHYPERTENSIVE AGENTS; BLOOD PLASMA; ADULTS; DRUG INTERACTION; BLOOD PRESSURE; ENZYMES; AUSTRALIA	McLean, A.J. Skews, H. Bobik, A. Dudley, F.J. 1980 Clinical Pharmacology and Therapeutics 27(6):726-732

(NEXT PAGE)

2-Propanol, 1-(isopropylamino)-3-(1-naphthyloxy)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(1-naphthalenyloxy)- (9 CI)
525-66-6
C16-H21-N-O2
MW 259.34, MP 96 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5112 Blood, plasma	Injection	Fluorometry	10	a) 25.4-24.3 ng/ml b) 31.3-31.7 ng/ml	a) Not given b) Not given	a) d-Propranolol after infusion of d-form b) dl-Propranolol after infusion of dl-form 1-4 hr range during 4-hr infusion of 0.04 mg/kg/hr Data show that propranolol depresses, without altering the glucose curve, glucose-stimulated insulin levels. Healthy, non-obese 25-37 yr olds, on 300 g carbohydrate diets >3 days. dl-form reduced blood pressure 10-15%. DRUGS; BLOOD PLASMA; CANADA; METABOLISM; BLOOD SERUM; HORMONES; BLOOD PRESSURE; ADULTS	Myers, M.G. Hope-Gill, H.P. 1979 Clinical Pharmacology and Therapeutics 25(3):303-308
5113 Blood, plasma	Ingestion	GC	24	a) 5.5-152.5 ng/ml b) 56-290.0 ng/ml c) 97.5-580.0 ng/ml d) 67.5-1,330.0 ng/ml	a) 69.4 ng/ml b) 158.1 ng/ml c) 339.0 ng/ml d) 607.6 ng/ml	a) 40 mg 2x/day b) 80 mg 2x/day c) 160 mg 2x/day d) 240 mg 2x/day 1.5-2.5 hr after morning dose 24-62 yr olds, with essential hypertension. Lower blood pressures and pulse rates. Fatique, dizziness, change in bowel habits, nightmares. DRUGS; DRUG THERAPY; ANTIHYPERTENSIVE AGENTS; BLOOD PRESSURE; HYPERTENSION; ADULTS; UNITED KINGDOM; COMPARATIVE EVALUATIONS; ENZYMES	Serlin, M.J. Orme, M.L'E. Baber, N.S. Sibeon, R.G. Laws, E. Breckenridge, A. 1980 Clinical Pharmacology and Therapeutics 27(5):586-592
5114 Blood, plasma	Ingestion	Fluorometry Radiometry	15	3.2-15.6 ng/ml	5.40 ng/ml	Steady state levels after 7th dose of 80 mg/8 hr, and 40 uCi of 3H-propranolol IV Normal 23-55 yr olds, wt 56-92 kg. DRUGS; METABOLISM; ADULTS; BLOOD; BLOOD PLASMA; ALCOHOLS; MEASUREMENT METHODS	Kornhauser, D.M. Wood, A.J.J. Vestal, R.E. Wilkinson, G.P. Branch, R.A. Shand, D.G. 1978 Clinical Pharmacology and Therapeutics 23(2):165-174
5115 Blood, plasma	Injection Ingestion	Radiometry Fluorometry	5	a) 30-63 ng/ml b) 39-142 ng/ml	a) 41.5 ng/ml b) 70.2 ng/ml	a) Steady state, 80 mg/8 hr b) Steady state, 80 mg/8 hr plus chlorpromazine, 50 mg/8 hr Adults, 4 normal and 1 hypertensive, ages 24-33 yr. DRUGS; DRUG INTERACTION; TENNESSEE; BLOOD PLASMA; ADULTS; HYPERTENSION; COMPARATIVE EVALUATIONS	Vestal, R.E. Kornhauser, D.M. Hollifield, J.W. Shand, D.G. 1979 Clinical Pharmacology and Therapeutics 25(1):19-24

(NEXT PAGE)

2-Propanol, 1-(isopropylamino)-3-(1-naphthyloxy)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(1-naphthalenyloxy)- (9 CI)
525-66-6
C16-H21-N-02
HN 259.34, MP 96 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5116 Blood, plasma	Ingestion	GC/MS	5	a) 28-120 ng/ml b) 75-280 ng/ml c) 73-260 ng/ml	a) 63.6 ng/ml b) 142.2 ng/ml c) 142.2 ng/ml	a) After dose 1 b) After dose 9 c) After dose 13 Propranolol glucuronide 2 hr (peak time) after AM dose. Dose, 10-40 mg/6 hr. Hypertension or coronary artery disease patients. DRUGS; DRUG THERAPY; HYPERTENSION; CARDIOVASCULAR DISEASES; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE	Walle, T. Conradi, E.C. Walle, U.K. Fagan, T.C. Gaffney, T.E. 1979b Clinical Pharmacology and Therapeutics 26(6): 686-695
5117 Blood, plasma	Ingestion	HPLC	3	6-8 ng/ml	Not given	Peaks at 1.2-1.7 hr. Dose, 10 mg as hydrochloride. Healthy non-smokers, 24-37 yr old. DRUGS; MEASUREMENT METHODS; BLOOD PLASMA	MacKichan, J.J. Pyszczynski, D.R. Jusko, W.J. 1978 Research Communications in Chemical Pathology and Pharmacology 20(3): 531-538
5118 Blood, serum	Ingestion	Fluorometry	35	6-316 ng/ml	Not given	14 days after first daily dose of 10-160 mg 4X/day (dosage altered according to blood pressure response). Patients on hemodialysis 3X/wk for end-stage renal failure. Ages 17-71 yr. Blood pressure control better in patients with detectable serum propranolol, P<0.05. Plasma renin activity reduced in patients complying with propranolol therapy. DRUGS; DRUG THERAPY; BLOOD SERUM; ADULTS; HYPERTENSION; ALCOHOLS	Briggs, W.A. Lowenthal, D.T. Cirksena, W.J. Price, W.E. Gibson, T.P. Flamenbaum, W. 1975 Clinical Pharmacology and Therapeutics 18(5):606-612
5119 Blood, serum	Ingestion	HPLC	a) 5 b) 2 c) 1 d) 1	a) >0-57 ng/ml b) 50-80 ng/ml c) Not applicable d) Not applicable	a) Not given b) Not given c) 120 ng/ml d) 212 ng/ml	a) 20 mg b) 80 mg c) 60 mg d) 80 mg 1-2 hr after dose. Non-linear relationship with dose. Estimated from graph. Patients on chronic dosage, receiving other drugs. DRUGS; MEASUREMENT METHODS; BLOOD SERUM; HEART DISEASES	Simon, N. Babich-Armstrong, M. 1979 Journal of Analytical Toxicology 3:246-252
5120 Blood, whole	Ingestion	Fluorometry Radiometry	15	33-143 ng/ml	72 ng/ml	Steady state levels after 7th dose of 80 mg/8 hr, and 40 uCi of 3H-propranolol IV Normal 23-55 yr olds, wt 56-92 kg. DRUGS; METABOLISM; ADULTS; BLOOD; BLOOD PLASMA; ALCOHOLS; MEASUREMENT METHODS	Fornhauser, D.M. Wood, A.J.J. Vestal, R.E. Wilkinson, G.R. Branch, R.A. Shand, D.G. 1978 Clinical Pharmacology and Therapeutics 23(2): 165-174

(NEXT PAGE)

2-Propanol, 1-(isopropylamino)-3-(1-naphthyloxy)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(1-naphthalenyloxy)- (9 CI)
525-66-6
C16-H21-N-02
MW 259.34, MP 96 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5121 Urine	Ingestion	GC/MS	5	Not given	14% of dose	Daily excretion on chronic therapy of 80 to 960 mg/day (every 6 hr). Hypertensive patients. DRUGS; METABOLITES; ANTIHYPERTENSIVE AGENTS; BLOOD PLASMA; URINE	Walle, T. Conradi, E.C. Walle, U.K. Fagan, T.C. Gaffney, T.E. 1979a Clinical Pharmacology and Therapeutics 26(5):548-554
5122 Urine	Ingestion	HPLC	6	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 8.3 + or - 1.6% of dose b) 13.5 + or - 2.5% of dose c) 15.0 + or - 6.5% of dose d) 30.2 + or - 2.8% of dose e) 39.5 + or - 3.6% of dose f) 44.6 + or - 5.2% of dose	a) Propranolol, 67 umole dose b) Propranolol, 268 umole dose c) Propranolol, 1072 umole dose d) Propranolol + metabolites, 67 umole dose e) Propranolol + metabolites, 268 umole dose f) Propranolol + metabolites, 1072 umole dose Given as hydrochloride 48 hr excretions Normal 23-32 yr olds, fasted before and after dose. ANTIHYPERTENSIVE AGENTS; DRUGS; METABOLITES; BLOOD PLASMA; PROTEINS; URINE; KIDNEY DISEASES; HEMODIALYSIS; ADULTS	Schneck, D.W. Pritchard, J.F. Gibson, T.P. Vary, J.E. Hayes, A.H., Jr. 1980 Clinical Pharmacology and Therapeutics 27(6):748-755
5123 Urine	Ingestion	GC/MS	24	a) Not given b) Not given c) Not given d) Not given	a) 3.1% of dose b) 9.2% of dose c) 16.0% of dose d) 18.0% of dose	a) 80 mg/day b) 160 mg/day c) 240 mg/day d) 320 mg/day. % excreted daily as the glucuronide after long-term therapy with dose indicated. Hypertension or coronary artery disease patients. DRUGS; DRUG THERAPY; HYPERTENSION; CARDIOVASCULAR DISEASES; COMPARATIVE EVALUATIONS; BLOOD PLASMA; URINE	Walle, T. Conradi, E.C. Walle, U.K. Fagan, T.C. Gaffney, T.E. 1979b Clinical Pharmacology and Therapeutics 26(6):686-695

2-Propanol, 1-(o-allylphenoxy)-3-(isopropylamino)- (8 CI)
2-Propanol, 1-((1-methylethyl)amino)-3-(2-(2-propenyl)phenoxy)- (9 CI)
13655-52-2
C15-H23-N-O2
MW 249.39

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5124 Blood, plasma	Ingestion	GC	6	a) 29-90 nmoles/l b) 8-94 nmoles/l c) 42-122 nmoles/l d) 22-96 nmoles/l	a) 60 nmoles/l b) 38 nmoles/l c) 80 nmoles/l d) 55 nmoles/l	a) Alprenolol, 90 min after 0.2 g b) Alprenolol, 90 min after 0.2 g, 36 hr after last of 10 doses pentobarbital (0.1 g/day) c) 4-hydroxy-alprenolol, 90 min after 0.2 g d) 4-hydroxy-alprenolol, 90 min after 0.2 g, 36 hr after last of 10 doses pentobarbital (0.1 g/day) Pentobarbital effect on means significant, P<0.01. Nonsmoking 23-37 yr olds, with no evidence of disease or drug intake. Inhibition of exercise tachycardia during a 7 hr period was reduced from 14.0 to 10.7% by pentobarbital (reduction correlated with plasma levels). DRUGS; METABOLISM; ENZYMES; HYPERTENSION; BLOOD PLASMA; DRUG INTERACTION; ADULTS; COMPARATIVE EVALUATIONS	Collste, P. Seideman, P. Borg, K-O. Haglund, K. von Bahr, C. 1979 Clinical Pharmacology and Therapeutics 25(4):423-427
5125 Blood, plasma	Injection Ingestion	GC-EC	6	a) 100-15 pmoles/g b) 37-12 pmoles/g c) 115-34 pmoles/g d) 125-12 pmoles/g e) 200-6.5 pmoles/g	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) 1 and 7 hr after 10 mg, IV b) 1 and 7 hr after 100 mg, oral c) 1 and 7 hr after 200 mg, oral d) 4-hydroxy-alprenolol, 1 and 3 hr after 100 mg alprenolol, oral e) 4-hydroxy-alprenolol, 1 and 6 hr after 200 mg alprenolol, oral Range of means, estimated from graphs. All showed continuous decline. Healthy 20-25 yr old medical students Reduction in exercise heart rate correlated with log plasma level. DRUGS; SWEDEN; ADULTS; HYPERTENSION; METABOLITES; BLOOD PLASMA; PROTEINS	Collste, P. Borg, K-O. Astrom, H. von Bahr, C. 1979 Clinical Pharmacology and Therapeutics 25(4):416-422

2-Propanol, 1-(tert-butylamino)-3-((4-morpholino-1,2,5-thiadiazol-3-yl)oxy)-, (S)-(-)- (8 CI)
2-Propanol, 1-((1,1-dimethylethyl)amino)-3-((4-(4-morpholinyl)-1,2,5-thiadiazol-3-yl)oxy)-, (S)- (9 CI)
26839-75-8
C13-H24-N4-O3-S
MW 316.42, MP 71.5-72.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5126 Blood, plasma	Ingestion	GC-EC		173-3 nmoles/l	Not given	2 and 40 hr means after 20 mg/day Healthy 20-30 yr olds, within 10% of normal weight. Reduced resting and exercise heart rates. Reduced blood pressure. DRUGS; SWEDEN; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; ADULTS; BLOOD PRESSURE	Johansson, S.E. McCall, M. Wilhelmsson, C. Vedin, J.A. 1980 Clinical Pharmacology and Therapeutics 27(5):593-601

(NEXT PAGE)

2-Propanol, 1-(tert-butylamino)-3-[(4-morpholino-1,2,5-thiadiazol-3-yl)oxy]-, (S)-(-)- (8 CI)
2-Propanol, 1-[(1,1-dimethylethyl)amino]-3-[(4-(4-morpholinyl)-1,2,5-thiadiazol-3-yl)oxy]-, (S)- (9 CI)
26839-75-8
C13-H24-N4-O3-S
MW 316.42, MP 71.5-72.5 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5127 Blood, serum	Ingestion	GC-EC	15	a) 0-86 ng/ml b) 30-156 ng/ml c) 39-171 ng/ml	a) 42 ng/ml b) 77 ng/ml c) 96 ng/ml	a) 20 mg/day b) 40 mg/day c) 60 mg/day After 3rd week, 2-4 hr after AM dose. 23-56 yr olds, mild to moderate essential hypertension, 4 mo-25 yr. 6 black, 14 white. Blood pressure, heart rate, and plasma renin activity decreased. DRUGS; DRUG THERAPY; HYPERTENSION; BLOOD SERUM; COMPARATIVE EVALUATIONS	Simon, G. Kiowski, W. Julius, S. 1978 Clinical Pharmacology and Therapeutics 23(2):152-157
5128 Urine	Ingestion	GC/MS Radiometry	3	Not given	77 + or - 4% of dose	Dose, 10 mg C14-timolol 24 hr excretions Healthy volunteers URINE; METABOLISM; RATS; DRUGS	Tocco, D.J. Duncan, A.E.W. deLuna, F.A. Smith, J.L. Walker, R.W. Vandenheuvel, W.J.A. 1980 Drug Metabolism and Disposition 8(4):236-240

2-Propanol, 1-(2-cyclopentylphenoxy)-3-[(1,1-dimethylethyl)amino]-
36507-48-9
C18-H29-N-O2
MW 291.4

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5129 Blood, plasma	Ingestion	Fluorometry	12	a) 403-3456 ng/ml b) 374-2191 ng/ml c) 283-661 ng/ml	a) 1239.8 + or - 225 ng/ml b) 787 + or - 137 ng/ml c) 428.7 + or - 31.7 ng/ml	Peaks, 100 mg dose. Peak times 0.75-2.5 hr (mean 1.43 hr) b) Peaks, 50 mg dose. Peak times 0.5-2 hr (mean 1.17 hr) c) Peaks, 25 mg dose. Peak times 0.5-2 hr (mean 1.21 hr) Healthy 21-45 yr olds, wt 160-180 lbs, no drugs > 10 days, fasted before and after dose. Reduction in resting and exercise heart rates and systolic pressure. Diastolic effects less consistent. DRUGS; ANTIHYPERTENSIVE AGENTS; BLOOD PRESSURE; BLOOD PLASMA; URINE; ADULTS	Jun, H.W. Hayes, S.L. Vallner, J.J. Honigberg, I.L. Rojos, A.E. Stewart, J.T. 1979 Journal of Clinical Pharmacology 19:415-423
5130 Urine	Ingestion	Fluorometry	12	a) Not given b) Not given c) Not given	a) 3.13 mg b) 2.12 mg c) 1.73 mg	a) 100 mg dose b) 50 mg dose c) 25 mg dose 72 hr cumulative excretions Healthy 21-45 yr olds, wt 160-180 lbs, no drugs > 10 days, fasted before and after dose. Reduction in resting and exercise heart rates and systolic pressure. Diastolic effects less consistent. DRUGS; ANTIHYPERTENSIVE AGENTS; BLOOD PRESSURE; BLOOD PLASMA; URINE; ADULTS	Jun, H.W. Hayes, S.L. Vallner, J.J. Honigberg, I.L. Rojos, A.E. Stewart, J.T. 1979 Journal of Clinical Pharmacology 19:415-423

2-Propanol, 1-(4-(2-methoxyethyl)phenoxy)-3-((1-methylethyl)amino)-, (+-)-
37350-58-6
C15-H25-N-03
MW 267.38

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5131 Blood, plasma	Ingestion	GC		a) 1237-20 nmoles/l b) 605-56 nmoles/l	a) Not given b) Not given	a) 2 and 24 hr means after 200 mg/day b) 2 and 24 hr means after 200 mg/day as slow-release form Healthy 20-30 yr olds, within 10% of normal weight. Reduced resting and exercise heart rates. Reduced blood pressure. DRUGS; SWEDEN; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; COMPARATIVE EVALUATIONS; ADULTS; BLOOD PRESSURE	Johansson, S.P. McCall, M. Wilhelmsson, C. Vedin, J.A. 1980 Clinical Pharmacology and Therapeutics 27(5):593-601
5132 Blood, plasma	Ingestion	GC	5	a) 27.1-76.1 pmole/g b) 53.5-147.7 pmole/g c) 162.6-410.5 pmole/g d) 130.6-199.4 pmole/g	a) 60.0 pmole/g b) 106.1 pmole/g c) 265.8 pmole/g d) 166.5 pmole/g	a) 25 mg/day, 2-5 days b) 50 mg/day, 3-7 days c) 100 mg/day, 4-9 days d) 50 mg 3x/day, 25-72 days Average levels for 1st 7.5 hr after dose, (area-under-the-curve/time). 30-46 yr olds, with hypertension 0.5-3 yr. Antihypertensive at all doses, $p < 0.05$, lowered pulse rate, all doses, $p < 0.01$. Multiple doses lowered plasma renin activity in 4 of 5 cases. DRUGS; DRUG THERAPY; BLOOD PRESSURE; ANTIHYPERTENSIVE AGENTS; SWEDEN; ADULTS; COMPARATIVE EVALUATIONS; BLOOD PLASMA	Collste, P. Haglund, K. von Bahr, C. 1980 Clinical Pharmacology and Therapeutics 27(4):441-449
5133 Blood, plasma	Ingestion	GC-EC	a) 12 b) 8	a) Not given b) 111-325 ng/ml	a) 323 + or - 98 ng/ml b) Not given	a) After 1 wk on 200 mg/day. Diastolic pressure responsive to low dose (group A) b) 1 and 4 wk. Dose 200 mg/day 1st wk, 300-400 mg/day 4th wk. Diastolic pressure responsive only at higher doses (group B) All subjects given 50 mg 2X/day hydrochlorothiazide > 9 wk before metoprolol. 21-65 yr olds, wt 55-105 kg, with mild to moderate hypertension. Reduced blood pressure, reduced heart rate and plasma renin activity. Dizziness and fatique. DRUGS; HYPERTENSION; BLOOD PRESSURE; DIURETICS; ANTIHYPERTENSIVE AGENTS; BLOOD PLASMA; ADULTS	Velasquez, M.T. Wan, S.H. Maronde, R.F. 1979 Clinical Pharmacology and Therapeutics 26(5):555-561
5134 Blood, plasma	Ingestion	GC-EC		a) 68.1-467.1 ng/ml b) 120.5-1066.7 ng/ml	a) 198.9 + or - 37.7 ng/ml b) 426.1 + or - 84.1 ng/ml (S.E.)	a) After single, 100-mg dose. Peak at 1.7 + or - 0.2 hr b) After 100 mg following 6-12 wk on 100-600 mg/day. Peak at 1.6 + or - 0.2 hr Administered as tartrate. Hypertensive 30-69 yr olds, fasted before first dose. Blood pressure and heart rate decreased. DRUGS; DRUG THERAPY; ANTIHYPERTENSIVE AGENTS; HYPERTENSION; BLOOD PLASMA; BLOOD PRESSURE; CANADA; ADULTS	Myers, M.G. Thiessen, J.J. 1980 Clinical Pharmacology and Therapeutics 27(6):756-762

(NEXT PAGE)

2-Propanol, 1-(4-(2-methoxyethyl)phenoxy)-3-((1-methylethyl)amino)-, (+-)-
37350-58-6
C15-H25-N-O3
MW 267.38

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5135 Blood, plasma	Ingestion	GC	6	a) Not applicable b) Not applicable c) Not applicable	a) 135 ng/ml b) 77 ng/ml c) 88 ng/ml	a) Mean peak, 87 min, conventional tablet b) Mean peak, 250 min, slow release tablet (59% released by 2 hr) c) Mean peak, 288 min, slow release tablet (34% released by 2 hr) 100 mg, single dose, as tartrate. Healthy 23-28 yr olds, fasted 10-12 hr before and 4 hr after dose. First dose caused maximum 17-19% lowering of exercise blood pressure and 18-21% lowering of exercise heart rate. Data also on resting values. Effects correlated with plasma levels, r>0.96, P<0.001. DRUGS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; ADULTS; SWEDEN; BLOOD PRESSURE	Regardh, C-G. Johnsson, G. Jordo, L. Solvell, L. 1975 Acta Pharmacologica et Toxicologica 36(Suppl V):45-58
5136 Blood, plasma	Ingestion	GC	8	a) 360-1200 nmoles/l b) 230-1100 nmoles/l	a) Not given b) Not given	a) Peaks, 1-3 hr after 0.1 g b) Peaks, 1-2 hr after 0.1 g, 36 hr after 10 days pentobarbital (0.1 g/day) Area-under-the-curve reduced by 2-46% after pentobarbital treatment. Healthy Swedish students, ages 24-37 yr, nonsmokers, fasted overnight to 2 hr after dose. DRUGS; DRUG INTERACTION; ENZYMES; BLOOD PLASMA; BLOOD PRESSURE; SWEDEN; ADULTS	Haglund, K. Seideman, P. Collste, P. Borg, K.-O. von Bahr, C. 1979 Clinical Pharmacology and Therapeutics 26(3):326-329
5137 Urine	Ingestion	GC Radiometry	10	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 2.7% of dose b) 3.5% of dose c) 97.5% of dose d) 99.6% of dose	a) Unchanged metoprolol, slow-release tablet b) Unchanged metoprolol, liquid c) Total radioactivity, slow-release tablet d) Total radioactivity, liquid 72 hr excretions after 50 mg tritium-labelled dose as tartrate 10 healthy 25-46 yr olds, fasted 10-12 hr before to 4 hr after dose. First dose caused maximum 17-19% lowering of exercise blood pressure and 18-21% lowering of exercise heart rate. Data also on resting values. Effects correlated with plasma levels, r>0.96, P<0.001. DRUGS; BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; ADULTS; SWEDEN; BLOOD PRESSURE	Regardh, C-G. Johnsson, G. Jordo, L. Solvell, L. 1975 Acta Pharmacologica et Toxicologica 36(Suppl V):45-58

2-Propen-1-amine, 3-(4-bromophenyl)-N-methyl-3-(3-pyridinyl)-, (Z)-
60328-59-6
C15-H15-Br-N2
MW 303.22

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5138 Blood, plasma	Ingestion	GC	10	250-800 nmol/l	Not given	After 50 mg zimelidine, 3X/day, 3-6 wk Steady states. Estimated from graphs 21-66 yr olds with endogenous depression, Denmark Dizziness, mild dryness of mouth, mild constipation, nausea, biochemical effects in liver. 5 recovered from depression. DENMARK; ADULTS; BEHAVIOR DISORDERS; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; COMPARATIVE EVALUATIONS	Hansen, L.B. Thomsen, I.S. Vestergard, P. Larsen, N.E. Hvidberg, E.F. 1980 Psychopharmacology 69:157-160

2-Propen-1-amine, 3-(4-bromophenyl)-N,N-dimethyl-3-(3-pyridinyl)-, (Z)-
56775-88-3
C16-H17-Br-N2
MW 317.25

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5139 Blood, plasma	Ingestion	GC	10	50-300 nmol/l	Not given	After 50 mg, 3X/day, 3-6 wk Steady-states Estimated from graphs 21-66 yr olds with endogenous depression, Denmark Dizziness, mild dryness of mouth, mild constipation, nausea, biochemical effects in liver. 5 recovered from depression. DENMARK; ADULTS; BEHAVIOR DISORDERS; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; COMPARATIVE EVALUATIONS	Hansen, L.B. Thomsen, I.S. Vestergard, P. Larsen, N.E. Hvidberg, E.F. 1980 Psychopharmacology 69:157-160

2-Pyridineacetamide, alpha-[2-(diisopropylamino)ethyl]-alpha-phenyl- (8 CI)
2-Pyridineacetamide, alpha-[2-(bis(1-methylethyl)amino)ethyl]-alpha-phenyl- (9 CI)
3737-09-5
C21-H29-N3-O
MW 339.47, MP 94.5-95.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5140 Blood		GC	1	Not applicable	26.6 ug/ml	Death from overdose 44 yr old female Cardiopulmonary arrest DRUGS; BLOOD; DRUG ABUSE; ANTIARRHYTHMIC AGENTS; AUTOPSIES; SUICIDE	Anderson, W.H. Stafford, D.T. Bell, J.S. 1980 Journal of Forensic Sciences 25(1):33-39

(NEXT PAGE)

2-Pyridineacetamide, alpha-(2-(diisopropylamino)ethyl)-alpha-phenyl- (8 CI)
2-Pyridineacetamide, alpha-(2-(bis(1-methylethyl)amino)ethyl)-alpha-phenyl- (9 CI)
3737-09-5
C21-H29-N3-O
MW 339.47, MP 94.5-95.0 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5141 Blood, plasma	Ingestion	HPLC	a) 5 b) 6	a) 4.5-5.4 ug/ml b) 5.0-7.1 ug/ml	a) 4.9 + or - 0.6 ug/ml b) 5.9 + or - 0.2 ug/ml (S.E.)	a) 100 mg 4x/day maintenance dose b) 200 mg 4x/day maintenance dose Steady-state levels. Myocardial infarction patients, ages 46-73 yr, wt 62-90 kg. DRUGS; AUSTRALIA; HEART DISEASES; BLOOD PLASMA; DRUG THERAPY; ADULTS	Ilett, K.F. Madsen, B.W. Woods, J.D. 1979 Clinical Pharmacology and Therapeutics 26(1):1-7
5142 Blood, plasma	Ingestion	HPLC	6	3-0.2 ug/ml	Not given	2 and 58 hr after 200 mg dose as phosphate. Initial measurement, 1.8 ug/ml at 0.5 hr Range of means, estimated from graph Patients with renal insufficiency requiring long-term hemodialysis ADULTS; HEART DISEASES; KIDNEY DISEASES; ANTIARRHYTHMIC AGENTS; DRUG THERAPY	Sevka, M.J. Matthews, S.J. Nightingale, C.H. Izard, H.W. Fieldman, A. Chow, M.S.S. 1981 Clinical Pharmacology and Therapeutics 29(3):322-326
5143 Blood, serum	Injection	GC	9	a) 2.68-1.85 ug/ml b) 1.71-1.40 ug/ml c) 0.66-0.40 ug/ml d) 1.9-0.1 ug/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 150 mg dose, followed by 8 hr IV of 15 mg/hr b) 75 mg dose, followed by 8 hr IV of 7.5 mg/hr c) 25 mg dose, followed by 8 hr IV of 2.5 mg/hr d) 2 and 30 hr after 2 mg/kg bolus IV, 8 subjects. Estimated from graph a)-c) 0.5 and 8 hr after start of dose, 1 subject. Normal volunteers UNITED KINGDOM; ADULTS; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DRUGS	Lawrence, J.R. Bryson, S.M. Sumner, D.J. 1979 Biopharmaceutics and Drug Disposition 1:51-57

2',6'-Acetoxylidide, 2-(diethylamino)- (8 CI)
Acetamide, 2-(diethylamino)-N-(2,6-dimethylphenyl)- (9 CI)
137-58-6
C14-H22-N2-O
MW 234.33, MP 68-69 C, BP 180-181 C at 4 mm Hg, 159-160 C at 2 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5144 Blood, plasma	Injection Ingestion Rectal	GC		a) 0.340-0.596 mg/l b) 0.085-0.460 mg/l c) 0.243-0.829 mg/l	a) 0.496 + or - 0.094 mg/l b) 0.264 + or - 0.146 mg/l c) 0.529 + or - 0.223 mg/l	a) 60 min IV b) Oral dose (capsule) c) Rectal dose (aqueous solution) 0-8 hr average levels computed from area-under-the-curve/480 min. Dose, 200 mg IV, 300 mg oral or rectal. Healthy 23 to 26 yr olds, wt 65-85 kg, fasted before dose. DRUGS; NETHERLANDS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS; BLOOD	de Boer, A.G. Breimer, D.D. Mattie, H. Pront, J. Gubbens-Stibbe, J.M. 1979 Clinical Pharmacology and Therapeutics 26(6):701-709

(NEXT PAGE)

2',6'-Acetoxylidide, 2-(diethylamino)- (8 CI)
Acetamide, 2-(diethylamino)-N-(2,6-dimethylphenyl)- (9 CI)
137-58-6
C14-H22-N2-O
MW 234.33, MP 68-69 C, BP 180-181 C at 4 mm Hg, 159-160 C at 2 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5145 Blood, plasma	Injection	MS	4	1.8-3.2 ug/ml	2.5 ug/ml	12 hr values after 3-5 min IV of 75 mg (loading dose), followed by 12 hr IV of 30 ug/kg/min. Levels of 2 metabolites also measured. Renal failure patients on chronic hemodialysis, either anephric or with creatinine clearances of < 5 ml/min. No congestive heart failure or liver dysfunction. No central nervous system toxicity or changes in heart rate or blood pressure. DRUGS; METABOLISM; BLOOD PLASMA; DISEASES	Collinsworth, K.A. Strong, J.M. Atkinson, A.J., Jr. Winkle, P.A. Perlroth, P. Harrison, D.C. 1975 Clinical Pharmacology and Therapeutics 18(1):59-64
5146 Blood, whole	Injection Ingestion Rectal	GC	6	a) 0.30-0.57 mg/l b) 0.079-0.354 mg/l c) 0.206-0.60 mg/l	a) 0.398 + or - 0.098 mg/l b) 0.194 + or - 0.102 mg/l c) 0.377 + or - 0.142 mg/l	a) 60 min IV b) Oral dose (capsule) c) Rectal dose (aqueous solution) 0-8 hr average levels computed from area-under-the-curve/480 min. Dose, 200 mg IV, 300 mg oral or rectal. Healthy 23 to 26 yr olds, wt 65-85 kg, fasted before dose. DRUGS; NETHERLANDS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS; BIOCD	de Boer, A.G. Breimer, D.D. Mattie, H. Pronk, J. Gubbens-Stibbe, J.M. 1979 Clinical Pharmacology and Therapeutics 26(6):701-709

2H-1,2,4-Benzothiadiazine-7-sulfonamide, 6-chloro-3,4-dihydro-,1,1-dioxide
58-93-5
C7-H8-Cl-N3-O4-S2
MW 297.72, MP 273-275 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5147 Blood, serum	Ingestion	GC-EC	12	a) 143.9-5.3 mg/ml b) 153.5-7.1 mg/ml	a) Not given b) Not given	a) 2.3 and 32 hr after 25 mg. 48.5 ng/ml at 1 hr b) 2.2 and 32 hr after 25 mg plus 160 mg sotalol. 88.8 mg/ml at 1 hr Healthy 25-57 yr olds, wt 53-86 kg. DRUGS; ANTIHYPERTENSIVE AGENTS; DIURETICS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS; ADULTS	Sundquist, H. Anttila, M. Simon, A. Peich, J.W. 1979 Journal of Clinical Pharmacology 19:557-564

2H-1,2,4-Benzothiadiazine-7-sulfonamide, 6-chloro-3,4-dihydro-2-methyl-3-{{(2,2,2-trifluoroethyl)thio}methyl}-, 1,1-dioxide
346-18-9
C11-H13-Cl-F3-N3-O4-S3
MW 439.90, MP 202.5 C, also reported as 207-217 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5148 Blood, plasma	Ingestion	GC	18	0.61-1.04 ng/ml	Not applicable	Range of means, 1-48 hr after 1 mg. Peaks at 5 hr in most patients. 83.5% protein-bound at 10 ng/ml. Monoexponential elimination. Normal 18-45 yr olds, fasted overnight before and 2 hr after dose. DRUGS; DIURETICS; MEASUREMENT METHODS; BLOOD PLASMA; URINE	Robbs, D.C. Twomey, T.M. 1978 Clinical Pharmacology and Therapeutics 23(2):241-246
5149 Urine	Ingestion	GC	13	11.62-32.50% of dose	20.38% of dose	0-48 hr cumulative excretion after 1 mg. Normal 18-45 yr olds, fasted overnight before and 2 hr after dose. DRUGS; DIURETICS; MEASUREMENT METHODS; BLOOD PLASMA; URINE	Robbs, D.C. Twomey, T.M. 1978 Clinical Pharmacology and Therapeutics 23(2):241-246

2H-1,4-Benzodiazepin-2-one, 5-(o-chlorophenyl)-1,3-dihydro-7-nitro- (8 CI)
2H-1,4-Benzodiazepin-2-one, 5-(2-chlorophenyl)-1,3-dihydro-7-nitro- (9 CI)
1622-61-3
C15-H10-Cl-N3-O3
MW 315.72, MP 236.5-238.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5150 Blood	Ingestion	TLC Radiometry GC-EC	1	12-1.0 ng equiv/ml	Not applicable	1 and 96 hr after 2 mg of micronized clonazepam-2-14C, determined by GC-EC. Agreed with TLC, radiometry values. Biexponential decline. DRUGS; MEASUREMENT METHODS; BLOOD; ANTICONVULSANTS; COMPARATIVE EVALUATIONS; BLOOD PLASMA	de Silva, J.A.F. Puglisi, C.V. Munno, N. 1974 Journal of Pharmaceutical Sciences 63(4):520-527
5151 Blood, plasma	Ingestion	Radiometry TLC	1	a) 17-6.2 ng equiv/ml b) 17-1.0 ng equiv/ml	a) Not applicable b) Not applicable	a) Total 14C b) 14C-clonazepam 1 and 120 hr after 2 mg of micronized clonazepam-2-14C DRUGS; MEASUREMENT METHODS; BLOOD; ANTICONVULSANTS; COMPARATIVE EVALUATIONS; BLOOD PLASMA	de Silva, J.A.F. Puglisi, C.V. Munno, N. 1974 Journal of Pharmaceutical Sciences 63(4):520-527

2955-38-6
C19-H17-Cl-N2-O
MW 324.83, MP 145-146 C (also reported 144-147 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5152 Blood, plasma	Ingestion	GC	5	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 151 + or - 100 ng/ml b) 194 + or - 70 ng/ml c) 233 + or - 100 ng/ml d) 235 + or - 68 ng/ml e) 215 + or - 58 ng/ml f) 179 + or - 33 ng/ml g) 125 + or - 46 ng/ml h) 44 + or - 38 ng/ml	a) 75 hr b) 3 hr c) 8 hr d) 12 hr e) 24 hr f) 48 hr g) 96 hr h) 264 hr N-desalkyl-prazepam concentrations at times after single dose of 30 mg prazepam Fasting non-smokers, wt 56-64 kg, age 20-41 yr BENZODIAZEPINES; UNITED KINGDOM; ADULTS; LIVER; URINE; METABOLISM	Chasseaud, L.F. Taylor, T. Brodie, R.R. 1980 Journal of Pharmacy and Pharmacology 32:652-653
5153 Urine	Ingestion	GC	5	a) 0.5-7.3% b) 0.3-3.0%	a) 4.3% + or - 3.0 b) 1.3% + or - 1.0	a) 3-Hydroxyprazepam b) Oxazepam Metabolites in 24 hr specimens after 30 mg prazepam, % dose excreted Fasting non-smokers, wt 56-64 kg, age 20-41 yr BENZODIAZEPINES; UNITED KINGDOM; ADULTS; LIVER; URINE; METABOLISM	Chasseaud, L.F. Taylor, T. Brodie, R.R. 1980 Journal of Pharmacy and Pharmacology 32:652-653

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-
439-14-5
C16-H13-Cl-N2-O
MW 284.76, MP 125-126 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5154 Blood	Ingestion	GC	5	144-130 mg/ml	Not given	10 mg, 2.5 hr later, 1000 U heparin. Measured before and 15 min after heparin. Corresponding free drug values, 3.6-6.9 mg/ml. Normal 23-40 yr olds. LIPIDS; PROTEINS; METABOLISM; BLOOD; BLOOD PLASMA; DRUG INTERACTION; DRUGS; MUSCLE RELAXANTS	Routledge, P.A. Kitchell, B.B. Bjornsson, T.D. Skinner, T. Linnoila, M. Shand, D.G. 1980 Clinical Pharmacology and Therapeutics 27(4):528-532
5155 Blood, plasma	Ingestion	GC	5	225-204 ng/ml	Not given	10 mg, 2.5 hr later, 1000 U heparin. Measured before and 15 min after heparin. Corresponding free drug values, 3.6 - 6.9 mg/ml. Normal 23-40 yr olds. LIPIDS; PROTEINS; METABOLISM; BLOOD; BLOOD PLASMA; DRUG INTERACTION; DRUGS; MUSCLE RELAXANTS	Routledge, P.A. Kitchell, B.B. Bjornsson, T.D. Skinner, T. Linnoila, M. Shand, D.G. 1980 Clinical Pharmacology and Therapeutics 27(4):528-532
5156 Blood, plasma	Ingestion	GC	5	25-22 ng/ml	Not given	10 mg, 2.5 hr later 1000 U heparin. Measured before and 15 min after heparin. Corresponding free drug values, 0.62-1.01 ng/ml. Normal 23-40 yr olds. LIPIDS; PROTEINS; METABOLISM; BLOOD; BLOOD PLASMA; DRUG INTERACTION; DRUGS; MUSCLE RELAXANTS	Routledge, P.A. Kitchell, B.B. Bjornsson, T.D. Skinner, T. Linnoila, M. Shand, D.G. 1980 Clinical Pharmacology and Therapeutics 27(4):528-532

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-
439-14-5
C16-H13-Cl-N2-O
MW 284.76, MP 125-126 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5157 Blood, plasma	Injection	GC-EC	8	a) 400-2.5 ng/ml b) 290-6 ng/ml c) 450-8 ng/ml d) 520-8 ng/ml e) 3.5-47 ng/ml f) 3.5-16 ng/ml g) 3.5-36 ng/ml h) 7.7-28 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) Initial measurement and 6 days, 24 yr old male b) Initial measurement and 9 days, 69 yr old male c) Initial measurement and 7 days, 29 yr old female d) Initial measurement and 8 days, 62 yr old female e) Desmethyldiazepam, initial measurement and 2 days. 7.0 ng/ml at 7 days, 24 yr old male f) Desmethyldiazepam, 0.25 and 4 days. Plateau 4 9 days, 69 yr-old male g) Desmethyldiazepam, initial measurement and 3 days. 22 ng/ml at 7 days, 29 yr old female h) Desmethyldiazepam, initial measurement and 2 days. 20 ng/ml at 8 days, 62 yr old female Dose, 5-10 mg, IV Smoking associated with higher clearance values Healthy subjects DRUGS; DIAZEPAMS; BENZODIAZEPINES; AGE; SEX; BLOOD PLASMA; SMOKING; METABOLISM; METABOLITES; COMPARATIVE EVALUATIONS; ADULTS	Greenblatt, D.J. Allen, M.D. Harmatz, J.S. Shader, R.I. 1980 Clinical Pharmacology and Therapeutics 27(3):301-312
5158 Blood, plasma	Ingestion	GC	24	a) Not given b) Not given c) Not given d) Not given	a) 148 ng/ml b) 97 ng/ml c) 102 ng/ml d) 76 ng/ml	a) Subjects, high neuroticism, 1.5 hr after dose b) Controls, 1.5 hr after dose c) Subjects, high neuroticism, 6.0 hr after dose d) Controls, 6.0 hr after dose 5 mg dose. Controls differed significantly at 1.5 hr. Healthy 19-21 yr old Japanese, no other drugs, evaluated for neuroticism, dosed after meal. DRUGS; BENZODIAZEPINES; SEDATIVES; BLOOD PLASMA; ADULTS; NEUROLOGIC MANIFESTATIONS; COMPARATIVE EVALUATIONS; JAPAN	Nakano, S. Ogawa, N. Kawazu, Y. 1980 Clinical Pharmacology and Therapeutics 27(3):370-374
5159 Blood, plasma	Ingestion	GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 1007 ng/ml b) 1250 ng/ml c) 2430 ng/ml	a) Day 1 of 7 days on placebo b) Day 1 on 10 mg diazepam c) Day 14 on 10 mg diazepam Data also for N-desmethyldiazepam 44 yr old diazepam abuser. Impairment of eye-hand coordination, performance in tasks requiring sustained arousal, information processing, and short term memory. DRUGS; BLOOD SERUM; METABOLITES; DRUG ABUSE; DIAZEPAMS	Linnoila, M. Erwin, C.W. Brendle, A. Skinner, T. Routledge, P.A. 1980 Acta Pharmacologica et Toxicologica 47:75-77

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-
439-14-5
C16-H13-Cl-N2-O
MW 284.76, MP 125-126 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5160 Blood, plasma	Injection	GC	1	a) 240-12.5 ng/ml b) 1750-28 ng/ml	a) Not given b) Not given	a) Initial measurement and 72 hr b) Initial measurement and 96 hr, pretreated with 6.0 mg cimetidine Estimated from graph Dose, 0.1 mg/kg. Healthy volunteer, fasted before dose. Sedation when pretreated with cimetidine. DRUGS; DRUG INTERACTION; TRANQUILIZERS; GERMANY; BLOOD PLASMA; SEDATIVES	Klotz, U. Reimann, I. 1980 New England Journal of Medicine 302(18):1012-1014
5161 Blood, plasma	Injection	GC	23	0.09-2.73 ug/ml	0.96 ug/ml	Level required for sedation. Dose, 3-70 mg IV. Dose- and level-correlated r=0.844, p<0.001. Age- and dose-related, r=-0.665, p<0.001. Cardiac patients with arrhythmias treated by elective cardioversion. DRUGS; DRUG THERAPY; SEDATIVES; BLOOD PLASMA; AGE; HEART DISEASES	Reidenberg, M.M. Levy, M. Warner, H. Coutinho, C.B. Schwartz, M.A. Yu, G. Cheripko, J. 1978 Clinical Pharmacology and Therapeutics 23(4):371-374
5162 Blood, plasma	Ingestion	GC-EC	a) 12 b) 14	a) 140-12.5 ng/ml b) 60-15 ng/ml	a) Not applicable b) Not applicable	a) Controls. Peak at 2 hr b) Alcoholics. Peak at 2 hr Means, 2-48 hr after 10 mg. Peaks differed, P<0.01. 3.5-hr values differed, P<0.001. No difference in elimination rates. Controls, 9 men, 5 women, mean age 46 yr. Alcoholics, 10 men, 1 woman, 30-59 yr old, heavy drinkers > 5 yr. On hypnotics and neuroleptic drugs. DRUGS; DRUG THERAPY; ALCOHOLIC BEVERAGES; FINLAND; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS; MUSCLE RELAXANTS	Sellman, R. Pekkarinen, A. Kangas, L. Paijola, E. 1975 Acta Pharmacologica et Toxicologica 36:25-32
5163 Blood, serum	Injection	GC	7	a) 350-245 ng/ml b) 400-325 ng/ml c) 410-340 ng/ml d) 105-100 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) Means at 4 and 8 hr. Mineral water given at 5 hr b) Means at 6 and 8 hr. Initial measurement, 380 ng/ml at 4 hr. Carbohydrate meal at 5 hr c) Means at 6 and 8 hr. Initial measurement, 390 ng/ml at 4 hr. Fatty meal at 5 hr. d) N-desmethyldiazepam means at 6 and 8 hr. Initial measurement, 104 ng/ml at 4 hr. Fatty meal at 5 hr Estimated from graph. Dose, 0.3 mg/kg diazepam, IV. Healthy volunteers, mean age 21.4 + or - 1.7 yr, no previous diazepam use, Finland. Fatigue after food 6 hr after dose. Ability to discriminate flickering light not correlated with serum levels. DRUGS; FINLAND; MUSCLE RELAXANTS; BLOOD SERUM; COMPARATIVE EVALUATIONS; METABOLISM; NEUROLOGIC MANIFESTATIONS	Linnoila, M. Forttila, K. Mattila, M.J. 1975 Acta Pharmacologica et Toxicologica 36:181-186

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl-
439-14-5
C16-H13-Cl-N2-O
MW 284.76, MP 125-126 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5164 Blood, serum	Injection	GC-EC	25	a) 750-35 ng/ml b) 600-55 ng/ml c) 25-40 ng/ml d) 30-60 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) Initial measurement and 72 hr after 0.2 mg/kg, 12 Causcasians b) Initial measurement and 72 hr after 0.2 mg/kg, 13 Orientals c) Desmethyldiazepam, 12 and 72 hr after 0.2 mg/kg, 12 Caucasians d) Desmethyldiazepam, 12 and 72 hr after 0.2 mg/kg, 13 Orientals Mental and psychomotor effects maximal at 0.5 hr, absent after 4 hr. ICWA; ADULTS; RACIAL STUDIES; BLOOD SERUM; ANTICONVULSANTS; DRUGS; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS; METABOLITES	Ghoneim, M.M. Korttila, K. Chiang, C.-K Jacobs, L. Schoenwald, R.D. Menaldt, S.P. Kayaba, K.O. 1981 Clinical Pharmacology and Therapeutics 29(6):749-756

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-3-hydroxy-5-phenyl-
604-75-1
C15-H11-Cl-N2-O2
MW 286.74, MP 205-206 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5165 Blood, plasma	Ingestion	GC-EC	9	a) 188-539 ng/ml b) 100-18 ug/l c) 280-20 ug/l	a) Not given b) Not given c) Not given	a) Maternal, peaks after 25 mg 40 min-23 hr before delivery. Peak times, 1 to 8 hr after dose. Conjugated and free oxazepam had similar profiles b) Newborn, 10-68 hr after birth c) Newborn, oxazepam conjugate levels 10-68 hr after birth 25 mg dose to mother about 2 hr before birth of infant in b) and c) Pregnant healthy 20-34 yr olds. Full-term newborn. Sweden Apgar scores normal. DRUGS; SWEDEN; BLOOD PLASMA; BENZODIAZEPINES; SEDATIVES; NEWBORN; PREGNANCY	Tomson, G. Lunell, N.-O. Sundwall, A. Pane, A. 1979 Clinical Pharmacology and Therapeutics 25(1):74-81
5166 Blood, plasma	Ingestion	GC/MS	3	a) 210-40 ng/ml b) 140-15 ng/ml	a) Not given b) Not given	a) Range of means, unchanged drug, at 3 and 24 hr after 10 mg. Initial measurement, 150 ng/ml at 1 hr b) Range of means, conjugated drug, at 5 and 24 hr after 10 mg. Initial measurement, 45 ng/ml at 1 hr Estimated from graph. JAPAN; BLOOD PLASMA; URINE; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Higuchi, S. Urabe, H. Shiobara, Y. 1979 Journal of Chromatography 164:55-61

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-3-hydroxy-5-phenyl-
604-75-1
C15-H11-Cl-N2-O2
MW 286.71, MP 205-206 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5167 Blood, plasma	Ingestion	GC-EC	a) 18 b) 20	a) 427-1017 ng/ml b) 454-1265 ng/ml	a) 622 + or - 37 ng/ml b) 837 + or - 51 ng/ml SE	a) Men b) Women Peaks, 2-3 hr after 30 mg, single dose Peaks negatively correlated with body wt (r = -0.43, P < .01). Higher clearance also associated with heavy cigarette smoking. Healthy 22-84 yr olds fasted overnight and 3 hr after dose, HA. MASSACHUSETTS; ADULTS; AGE; SEX; BLOOD PLASMA; DRUGS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; SMOKING	Greenblatt, D.J. Divoll, M. Harmatz, J.S. Shader, R.I. 1980 Journal of Pharmacology and Experimental Therapeutics 215(1):86-91
5168 Urine	Ingestion	GC/MS	3	a) Not given b) Not given c) Not given d) Not given	a) 5.2 + or - 0.5% (520 + or - 50 ug) b) 41.7 + or - 9.0% (4170 + or - 900 ug) c) 7.7 + or - 0.5% (770 + or - 50 ug) d) 67.3 + or - 1.7% (6730 + or - 170 ug) (S.E.)	a) Unchanged drug, 0-8 hr b) Conjugate, 0-8 hr c) Unchanged drug, 0-24 hr d) Conjugate, 0-24 hr Dose, 10 mg JAPAN; BLOOD PLASMA; URINE; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Higuchi, S. Urabe, H. Shiobara, Y. 1979 Journal of Chromatography 164:55-61

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-5-phenyl-
1088-11-5
C15-H11-Cl-N2-O
MW 270.73

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5169 Blood	Ingestion	GC	5	15-14 ng/ml	Not given	10 mg, 2.5 hr later 1000 U heparin. Measured before and 15 min after heparin. Corresponding free drug values, 0.62-1.01 ng/ml. Normal 23-40 yr olds. LIPIDS; PROTEINS; METABOLISM; BLOOD; BLOOD PLASMA; DRUG INTERACTION; DRUGS; MUSCLE RELAXANTS	Routledge, P.A. Kitchell, B.B. Bjornsson, T.D. Skinner, T. Linnoila, M. Shand, D.G. 1980 Clinical Pharmacology and Therapeutics 27(5):528-532
5170 Blood	Ingestion		1	Not given	0.78 ug/ml	Autopsy sample 44 yr old pharmacist, suicide, overdose of other drugs DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-5-phenyl-
1088-11-5
C15-H11-Cl-N2-O
MW 270.73

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5171 Blood, plasma	Ingestion	GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 1400 ng/ml b) 990 ng/ml c) 3110 ng/ml	a) Day 1 of 7 days on placebo b) Day 1 on 10 mg diazepam c) Day 14 on 10 mg diazepam 44 yr old diazepam abuser Impairment of eye-hand coordination, performance in tasks requiring sustained arousal, information processing, and short term memory. DRUGS; BLOOD SERUM; METABOLITES; DRUG ABUSE; DIAZEPAMS	Linnoila, M. Erwin, C.W. Brendle, A. Skinner, T. Poutledge, P.A. 1980 Acta Pharmacologica et Toxicologica 47:75-77
5172 Blood, plasma	Ingestion	GC-EC	8	759-3748 ug/l	Not given	Mean steady state values after 1.0-3.1 mg/kg. Epilepsy patients MICHIGAN; NERVOUS SYSTEM DISEASES; BLOOD; BLOOD PLASMA; ANTICONVULSANTS; DRUG THERAPY; DRUGS; TRANQUILIZERS; IN VITRO ANALYSIS; MEASUREMENT METHODS; BENZODIAZEPINES	Faidukewych, D. Rodin, E.A. Davenport, P. 1980 Clinical Chemistry 26:142-144
5173 Blood, plasma	Ingestion	GC-EC	12	72-168 ng/ml	138 +or- 8.8 ng/ml SE	Peaks, at 2.5-72 hr (mean 13.1 hr) after 20 mg prazepam. Healthy 22-42 yr olds, wt 56.8-88.6 kg. Fasted before and after dose. DRUGS; DIAZEPAMS; BENZODIAZEPINES; AGE; SEX; SMOKING; BLOOD PLASMA; METABOLISM; COMPARATIVE EVALUATIONS	Allen, M.D. Greenblatt, D.J. Harmatz, J.S. Shader, R.I. 1979 Journal of Clinical Pharmacology 19:445-450

2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(o-chlorphenyl)-1,3-dihydro-3-hydroxy- (8 CI)
2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy- (9 CI)
846-49-1
C15-H10-Cl2-N2-O2
MW 321.16, MP 166-168 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5174 Blood, plasma	Injection Ingestion	GC-EC	10	a) 17.6-60.7 ng/ml b) 18.0-36.0 ng/ml	a) 38.42 + or - 13.25 ng/ml b) 28.85 + or - 6.13 ng/ml	a) Peaks, elderly. Peak time, 0.95 + or - 0.19(SE) hr after 1.95 + or - 0.83(SD) mg orally, 10 subjects b) Peaks, elderly. Peak time, 1.03 + or - 0.16(SE) hr after 1.85 + or - 0.74(SD) mg IM, 10 subjects Some data for IV doses. Healthy 60-84 yr olds, wt 45.5-111.8 kg Drowsiness, sedation, sleep for 1 to 6 hr. DRUGS; BENZODIAZEPINES; AGE; BLOOD PLASMA; URINE; SMOKING; COMPARATIVE EVALUATIONS	Greenblatt, D.J. Allen, M.D. Locniskar, A. Harmatz, J.S. Shader, R.I. 1979 Clinical Pharmacology and Therapeutics 26(1):103-113

(NEXT PAGE)

2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(o-chlorphenyl)-1,3-dihydro-3-hydroxy- (8 CI)
2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy- (9 CI)
846-49-1
C15-H10-Cl2-N2-O2
MW 321.16, MP 166-168 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5175 Blood, plasma	Ingestion	GC/MS	3	a) 28-6 ng/ml b) 18-1 ng/ml	a) Not given b) Not given	a) Range of means, unchanged drug, 2 and 24 hr after 1.5 mg. Initial measurement, 24 ng/ml at 1.5 hr b) Range of means, conjugated drug, 3 and 24 hr after 1.5 mg. Initial measurement, 14 ng/ml at 1 hr Estimated from graph. JAPAN; BLOOD PLASMA; URINE; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Higuchi, S. Urabe, H. Shiobara, Y. 1979 Journal of Chromatography 164:55-61
5176 Urine	Injection Ingestion	GC-EC	9	a) Not given b) Not given c) Not given	a) 83% of dose b) 80% of dose c) 67% of dose	a) IV b) Oral c) IM 72 hr cumulative excretion of glucuronide in elderly volunteers. Accounted for 80-90% of total clearance. Drowsiness, sedation, sleep for 1 to 6 hr. DRUGS; BENZODIAZEPINES; AGE; BLOOD PLASMA; URINE; SMOKING; COMPARATIVE EVALUATIONS	Greenblatt, D.J. Allen, M.D. Locniskar, A. Harmatz, J.S. Shader, R.I. 1979 Clinical Pharmacology and Therapeutics 26(1):103-113
5177 Urine	Ingestion	GC/MS	3	a) Not given b) Not given c) Not given d) Not given	a) 0.10 + or - 0.02% (1.5 + or - 0.3 ug) b) 26.1 + or - 3.6% (391.5 + or - 54 ug) c) 0.59 + or - 0.24% (8.85 + or - 3.6 ug) d) 68.3 + or - 5.2% (1024.5 + or - 78 ug) (S.E.)	a) Unchanged drug, 0-8 hr b) Conjugate, 0-8 hr c) Unchanged drug, 0-24 hr d) Conjugate, 0-24 hr Dose, 1.5 mg JAPAN; BLOOD PLASMA; URINE; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Higuchi, S. Urabe, H. Shiobara, Y. 1979 Journal of Chromatography 164:55-61

3-Heptanol, 6-(dimethylamino)-4,4-diphenyl-, acetate (ester) (8 CI) (VAN)
Benzeneethanol, beta-(2-(dimethylamino)propyl)-alpha-ethyl-beta-phenyl-, acetate (ester) (9 CI) (VAN)
509-74-0
C23-H31-N-O2
MW 353.49, MP 193-217 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5178 Blood, plasma	Ingestion	GC	8	a) 0.023-0.148 ug/ml b) 0.055-0.193 ug/ml c) 0.057-0.123 ug/ml	a) 0.060 ug/ml b) 0.114 ug/ml c) 0.069 ug/ml	a) Acetylmethadol. Peak at 4 hr. 0-and 48-hr, none detected b) Noracetylmethadol. Peak at 4-8 hr. Detectable at 0 and 48 hr c) Dinoracetylmethadol. Plateau at 8 hr. Only slight decline at 48 hr Mean peaks after 40-60 mg, 72 hr after previous dose. Adults being treated for opiate dependence, Illinois. Pupillary constriction maximum at 8 hr, returning to pre-dose level after 48 hr. DRUGS; NARCOTICS; ADULTS; ILLINOIS; BLOOD PLASMA; METABOLISM; METABOLITES; NEUROLOGIC MANIFESTATIONS; DRUG THERAPY; DRUG ABUSE	Faiko, R.F. Inturrisi, C.E. 1975 Clinical Pharmacology and Therapeutics 18(1):96-104

3-Heptanone, 6-(dimethylamino)-4,4-diphenyl-
76-99-3
C21-H27-N-O
MW 309.49

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5179 Blood	Ingestion		1	Not given	0.36 ug/ml	Autopsy sample 44 yr old pharmacist, suicide DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255
5180 Blood, plasma	Ingestion	GC	a) 6 b) 6	a) 138-220 ng/ml b) 341-580 ng/ml	a) 182 ng/ml b) 420 ng/ml	a) Mean daily levels with maintenance dose of 40 mg/day. Level before dose, 116 ng/ml b) Mean daily levels with maintenance dose of 80 mg/day. Level before dose, 265 ng/ml Monoexponential decay. 20-37 yr olds, from NY State Drug Abuse Control Commission. Used heroin 6-22 yr but, no drugs for 2-8 months. No increased miosis. DRUGS; BLOOD PLASMA; URINE; FECES; NEW YORK; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Verebely, K. Volavka, J. Mule, S. Resnick, R. 1975 Clinical Pharmacology and Therapeutics 18(2):180-190
5181 Blood, serum	Ingestion	RIA	4	32-7.3 ng/ml Geometric means	Not given	2 hr and 48 hr after 15.2 + or - 1 mg/kg/1.79 sq m body surface area. Initial measurement, 28 ng/ml at 1 hr Estimated from graph. Healthy, nonpregnant 21-29 yr olds, in follicular phase of menstrual cycle, OR. Methadone-induced respiratory depression and miosis lasted > 48 hr. Steady state ventilatory response curve for CO2 inhalation was displaced, and pupillary constriction increased. OREGON; ADULTS; BLOOD SERUM; ANALGESICS; DRUGS; HORMONES; NARCOTICS; IN VIVO ANALYSIS;	Olsen, G.D. Wilson, J.M. Robertson, G.E. 1981 Clinical Pharmacology and Therapeutics 29(3):373-380
5182 Liver	Ingestion		1	Not given	19 ug/g	44 yr old pharmacist, suicide DRUGS; DRUG ABUSE; SUICIDE; AUTOPSIES; CASE HISTORIES; MEASUREMENT METHODS; NEW ZEALAND; BLOOD; LIVER; URINE; KIDNEYS; BRAIN; ALCOHOLS	Queree, E.A. Dickson, S.J. Missen, A.W. Pannell, L.K. 1979 Journal of Analytical Toxicology 3:253-255

(NEXT PAGE)

3-Heptanone, 6-(dimethylamino)-4,4-diphenyl-
76-99-3
C21-H27-N-O
MW 309.49

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5183 Urine	Ingestion	GC	6	a) 13.2-25.3 % of dose b) 28.9-60.6 % of dose	a) 19.16% of dose b) 41.8% of dose	a) After single 40 or 80 mg dose. 34% excreted as pyrrolidine b) Chronic maintenance dose of 40 or 80 mg/day. 64% excreted as pyrrolidine 24-hr urines. 20-37 yr olds, from NY State Drug Abuse Control Commission. Used heroin 6-22 yr but, no drugs for 2-8 months. No increased miosis. DRUGS; BLOOD PLASMA; URINE; FECES; NEW YORK; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES	Verebely, K. Volavka, J. Mule, S. Resnick, R. 1975 Clinical Pharmacology and Therapeutics 18(2):180-190

3,5-Pyrazolidinedione, 4-butyl-1,2-diphenyl-
50-33-9
C19-H20-N2-O2
MW 308.37, MP 105 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5184 Blood, plasma	Ingestion	GC	6	a) 12.48-17.05 ug/ml b) 30.77-46.33 ug/ml c) 51.18-88.11 ug/ml	a) 14.25 ug/ml b) 38.41 ug/ml c) 75.20 ug/ml	a) After 100 mg b) After 300 mg c) After 600 mg Peak levels Healthy 23-29 yr olds, France FRANCE; ADULTS; BLOOD PLASMA; ANTI-INFLAMMATORY AGENTS; COMPARATIVE EVALUATIONS	Sioufi, A. Colussi, D. Caudal, F. Schoeller, J.P. Massias, P. 1980 Journal of Pharmaceutical Sciences 69(12):1413-1416

3H-1,4-Benzodiazepine, 7-chloro-2-(methylamino)-5-phenyl-, 4-oxide (8 CI)
3H-1,4-Benzodiazepin-2-amine, 7-chloro-N-methyl-5-phenyl-, 4-oxide (9 CI)
58-25-3
C16-H14-Cl-N3-O
MW 299.75, MP 236-236.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5185 Blood, plasma	Injection	HPLC	5	a) 6500-200 ng/ml b) 6800-480 ng/ml c) 0-1000 ng/ml d) 0-2000 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) Range of means, 1 and 30 hr after 0.6 mg/kg IV, controls b) Range of means, 1 and 30 hr after 0.6 mg/kg IV, plus ethanol c) N-desmethylchlordiazepoxide, 0.5 and 5 hr after 0.6 mg/kg chlordiazepoxide IV, controls d) N-desmethylchlordiazepoxide, 0.5 and 10 hr after 0.6 mg/kg chlordiazepoxide IV, plus ethanol Estimated from graph Ethanol dose, 0.8 g/kg 1 hr before and 0.5 g/kg/5 hr throughout study Healthy 22-39 yr olds, Tennessee TENNESSEE; ADULTS; BLOOD PLASMA; DRUG INTERACTION; COMPARATIVE EVALUATIONS; ALCOHOLIC BEVERAGES	Desmond, P.V. Patwardhan, P.V. Schenker, S. Hoyumpa, A.M. 1980 European Journal of Clinical Pharmacology 18:275-278

(NEXT PAGE)

3H-1,4-Benzodiazepine, 7-chloro-2-(methylamino)-5-phenyl-, 4-oxide (8 CI)
3H-1,4-Benzodiazepin-2-amine, 7-chloro-N-methyl-5-phenyl-, 4-oxide (9 CI)
58-25-3
C16-H14-Cl-N3-O
MW 299.75, MP 236-236.5 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5186 Blood, plasma	Injection	RIA	a) 11 b) 11 c) 7	a) 3.6-0.03 ug/ml b) 2.6-0.16 ug/ml c) 2.0-0.2 ug/ml	a) Not applicable b) Not applicable c) Not applicable	a) Men b) Women c) Women on oral contraceptives Range of means, initial measurement and 56 hr after 0.6 mg/kg, IV. Biexponential elimination. 17-39 yr old men, 21-42 yr old women. 24-29 yr old women, on oral contraceptive > 6 mo All normal. BENZODIAZEPINES; DRUGS; ORAL CONTRACEPTIVES; ADULTS; SEX; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLISM; ENZYMES	Roberts, R.K. Desmond, P.V. Wilkinson, G.R. Schenker, S. 1979 Clinical Pharmacology and Therapeutics 25(6):826-831
5187 Blood, serum	Injection Ingestion		8	a) 1.07-1.77 ug/ml b) 1.00-1.80 ug/ml c) 0.24-0.84 ug/ml d) 0.20-1.15 ug/ml	a) 1.32 ug/ml b) 1.42 ug/ml c) 0.56 ug/ml d) 0.64 ug/ml	a) 1 hr after oral dose b) 2 hr after oral dose c) 1 hr after IM dose d) 2 hr after IM dose Dose, 25 mg as hydrochloride. Healthy men, fasting 10-12 hr. DRUGS; BLOOD SERUM; COMPARATIVE EVALUATIONS	Gottschalk, L.A. Biener, R. Dinovo, E.C. 1974 Research Communications in Chemical Pathology and Pharmacology 8(4):697-702

4-Imidazoline-1-carboxylic acid, 3-methyl-2-thioxo-, ethyl ester (8 CI)
1H-Imidazole-1-carboxylic acid, 2,3-dihydro-3-methyl-2-thioxo-, ethyl ester (9 CI)
22232-54-8
C7-H10-N2-O2-S
MW 186.23, MP 122-125 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5188 Blood, serum	Ingestion	Radiometry	1	0.0035-0.00125% radioactive dose/ml	Not given	1 and 24 hr after 10 mg carbimazole containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 1.05. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011
5189 Milk	Ingestion	Radiometry	1	0.003-0.0006% radioactive dose/ml	Not given	1 and 24 hr after 10 mg carbimazole containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 1.05. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011

4-Piperidinol, 1-(4,4-bis(p-fluorophenyl)butyl)-4-(4-chloro-alpha,alpha,alpha-trifluoro-m-tolyl)- (8 CI)
4-Piperidinol, 1-(4,4-bis(4-fluorophenyl)butyl)-4-(4-chloro-3-(trifluoromethyl)phenyl)- (9 CI)
26864-56-2
C28-H27-Cl-F5-N-O
MW 523.99, MP 105-107 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5190 Blood, plasma	Ingestion	GC-EC	a) 7 b) 6 c) 8	a) 3.75-9 ng/ml b) 6.25-12 ng/ml c) 8.75-25 ng/ml	a) 6.25 ng/ml b) 9.2 ng/ml c) 18.75 ng/ml	a) 30 mg weekly b) 60 mg weekly c) 120 mg weekly Steady state levels, estimated from graph. Levels correlated with dose, r=0.81, P<0.05. Hospitalized 27-59 yr old schizophrenics in good physical health. DRUGS; DRUG THERAPY; NEUROLOGIC MANIFESTATIONS; BLOOD PLASMA; ADULTS	Cooper, S.F. Dugal, R. Albert, J-M. Bertrand, M. 1975 Clinical Pharmacology and Therapeutics 18(3):325-329

4-Quinolinemethanol, alpha-2-piperidinyl-2,8-bis(trifluoromethyl)-, (R*,S*)-(+-)-
53230-10-7
C17-H16-F6-N2-O
MW 378.29

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5191 Blood, whole	Ingestion	HPLC	a) 4 b) 4 c) 4 d) 4 e) 4	a) 0.18-0.36 ug/ml b) 0.33-0.56 ug/ml c) 0.61-0.90 ug/ml d) 0.70-1.53 ug/ml e) 0.44-0.72 ug/ml	a) 0.25 ug/ml b) 0.43 ug/ml c) 0.80 ug/ml d) 1.22 ug/ml e) 0.58 ug/ml	a) Peaks, 13-15 hr after 250-mg tablet b) Peaks, 11-15 hr after two 250-mg tablets c) Peaks, 28-48 hr after four 250-mg tablets d) Peaks, 12-28 hr after six tablets e) Peaks, 8-12 hr after 500 mg in aqueous suspension. Volunteers, 21-45 yr old, dosed 2-3 hr after liquid, 360-calorie breakfast. DRUGS; ANTIBIOTICS; ADULTS; BLOOD; DISTRICT OF COLUMBIA; COMPARATIVE EVALUATIONS; INFECTION	Desjardins, R.E. Pamplin, C.L. von Bredow, J. Barry, K.G. Canfield, C.J. 1979 Clinical Pharmacology and Therapeutics 26(3):372-379

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 3,3-dimethyl-6-(((((3-(methylsulfonyl)-2-oxo-1-imidazolidinyl)carbonyl)amino)phenylacetyl)amino)-7-oxo-, (2S-(2alpha,5alpha,6beta(S*)))-
51481-65-3
C21-H25-N5-O8-S2
MW 539.63

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5192 Blood, plasma	Injection	Microbiological	27	a) <1-253 + or - 129 mg/l b) <1-204 + or - 81 mg/l c) <1-252 + or - 75.4 mg/l d) <1-234 + or - 66.4 mg/l	a) Not given b) Not given c) Not given d) Not given	a) Subjects with creatinine clearance greater than or equal to 60 ml/min b) Subjects with creatinine clearance 30-59 ml/min c) Subjects with creatinine clearance 10-29 ml/min d) Subjects with creatinine clearance <10 ml/min Range of means over 24.5 hr After 30 min IV of 3 g Adults with varying renal function, age 32.4 + or - 11.5 to 57.7 + or - 21.5 yr, Indiana. INDIANA; ADULTS; KIDNEY DISEASES; BLOOD PLASMA; ANTIBIOTICS; DRUGS; COMPARATIVE EVALUATIONS	Aronoff, G.R. Sloan, R.S. Luft, F.C. Nelson, P.L. Maxwell, D.R. Kleit, S.A. 1980 Clinical Pharmacology and Therapeutics 28(4):523-528
5193 Blood, serum	Injection	Microbiological	10	a) Not given b) Not given c) Not given d) Not given	a) 304.4 + or - 56.2 mg/l b) 78.3 + or - 7.1 mg/l c) 7.2 + or - 2.5 mg/l d) 0.22 + or - 0.17 mg/l	a) 0 hr b) 1 hr c) 4 hr d) 10 hr After 30 min IV of 4000 mg. Values adjusted to 70 kg body weight. Healthy 20-49 yr olds, wt 66.9 + or - 6.0 kg. DRUGS; DRUG THERAPY; ANTIBIOTICS; BLOOD SERUM; URINE; GERMANY; INFECTION; COMPARATIVE EVALUATIONS; ADULTS	Lode, H. Tomas, W. Koeppe, P. Wagner, J. 1980 Chemotherapy 26:81-90
5194 Urine	Injection	Microbiological	10	Not given	53.9 + or - 8.50% of dose	0-24 hr excretion after 30 min IV of 4000 mg. Healthy 20-49 yr olds, wt 66.9 + or - 6.0 kg. DRUGS; DRUG THERAPY; ANTIBIOTICS; BLOOD SERUM; URINE; GERMANY; INFECTION; COMPARATIVE EVALUATIONS; ADULTS	Lode, H. Tomas, W. Koeppe, P. Wagner, J. 1980 Chemotherapy 26:81-90

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 3,3-dimethyl-7-oxo-6-(((((2-oxo-1-imidazolidinyl)carbonyl)amino)phenylacetyl)amino)-, (2S-(2alpha,5alpha,6beta(S*)))-
37091-66-0
C20-H23-N5-O6-S
MW 461.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5195 Blood, serum	Injection	Microbiological	7	260-17 ug/ml	Not given	Means, 5 min and 4 hr after 2.0 g, IV. Continuous biexponential decline. Estimated from graph. 22-72 yr old hemodialysis patients, most with end-stage renal disease. New York. DRUGS; ANTIBIOTICS; BLOOD SERUM; KIDNEY DISEASES; HEMODIALYSIS; NEW YORK	Aletta, J.M. Francke, E.F. Neu, H.C. 1980 Clinical Pharmacology and Therapeutics 27(4):563-566

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(((((3-((2-furanylmethylene)amino)-2-oxo-1-imidazolidinyl)carbonyl)amino)(4-hydroxyphenyl)acetyl)amino)-3,3-dimethyl-7-oxo-(2S-(2alpha,5alpha,6beta(S*)))-
66327-51-3
C25-H26-N6-O8-S
MW 570.63

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5196 Blood, serum	Injection	Microbiological	10	a) Not given b) Not given c) Not given d) Not given	a) 345.0 + or - 65.5 mg/l b) 102.5 + or - 21.8 mg/l c) 10.6 + or - 4.3 mg/l d) 0.92 + or - 0.50 mg/l	a) 0 hr b) 1 hr c) 4 hr d) 10 hr After 30 min IV of 4000 mg. Values adjusted to body wt of 70 kg. Healthy 20-49 yr olds, wt 66.9 + or - 6.0 kg. Patients, 24-74 yr old, with serious infections caused by Bay K-sensitive organisms. Germany. Soft stool, diarrhea, nausea, emesis, headache, vertigo, exanthematous rash, decreased thrombocytes, exhaustion, tachycardia, meteorism. DRUGS; DRUG THERAPY; ANTIBIOTICS; BLOOD SERUM; URINE; GERMANY; INFECTION; COMPARATIVE EVALUATIONS; ADULTS	Lode, H. Tomas, W. Koeppe, P. Wagner, J. 1980 Chemotherapy 26:81-90
5197 Urine	Injection	Microbiological	10	Not given	32.6 + or - 4.34% of dose	0-24 hr excretion in healthy subjects after 30 min IV of 4000 mg. Healthy 20-49 yr olds, wt 66.9 + or - 6.0 kg. 24-74 yr old patients, with serious infections caused by Bay K-sensitive organisms. Germany. Soft stool, diarrhea, nausea, emesis, headache, vertigo, exanthematous rash, decreased thrombocytes, exhaustion, tachycardia, meteorism. DRUGS; DRUG THERAPY; ANTIBIOTICS; BLOOD SERUM; URINE; GERMANY; INFECTION; COMPARATIVE EVALUATIONS; ADULTS	Lode, H. Tomas, W. Koeppe, P. Wagner, J. 1980 Chemotherapy 26:81-90

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(((((4-ethyl-2,3-dioxo-1-piperazinyl)carbonyl)amino)phenylacetyl)amino)-3,3-dimethyl-7-oxo-, (2S-(2alpha,5alpha,6beta(S*)))-
61477-96-1
C23-H27-N5-O7-S
MW 517.61

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5198 Blood, serum	Injection	Microbiological	a) 6 b) 6	a) 248-15 ug/ml b) 353-22 ug/ml	a) Not given b) Not given	a) Means, 0 and 270 min after end of 30 min IV of 4g/8 hr, day 1. Day 4 peaks significantly higher b) Means, 0 and 270 min after end of 30 min IV of 6g/6 hr on day 1. Day 4 peak, 420 ug/ml Administered as sodium salt Healthy 18-50 yr olds, within 10% of ideal wt DRUGS; ANTIBIOTICS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS	Patra, V.K. Morrison, J.A. Iasseter, K.C. Jov, V.A. 1979 Clinical Pharmacology and Therapeutics 26(1):41-53

(NEXT PAGE)

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(((((4-ethyl-2,3-dioxo-1-piperazinyl)carbonyl)amino)phenylacetyl)amino)-3,3-dimethyl-7-oxo-, (2S-(2alpha,5alpha,6beta(S*)))-
61477-96-1
C23-H27-N5-O7-S
MW 517.61

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5199 Urine	Injection	Microbiological	6	a) 69.73-80.05% of dose b) 66.92-86.95% of dose	a) 76.03 + or - 8.98% of dose b) 73.02 + or - 7.15% of dose	a) Day 1 b) Day 4 0-8 hr cumulative excretions after 30 min IV of 4g/8 hr Healthy 18-50 yr olds, within 10% of ideal wt DRUGS; ANTIBIOTICS; BLOOD SERUM; URINE; COMPARATIVE EVALUATIONS	Batra, V.K. Morrison, J.A. Lasseter, K.C. Joy, W.A. 1979 Clinical Pharmacology and Therapeutics 26(1):41-53

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(2-amino-2-(p-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-, D- (8 CI)
4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-((amino(4-hydroxyphenyl)acetyl)amino)-3,3-dimethyl-7-oxo, (2S-(2alpha,5alpha,6beta(S*)))- (9 CI)
26787-78-0
C16-H19-N3-O5-S
MW 365.41, MP 194 C (beta-Naphthalenesulfonate trihydrate)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5200 Blood, plasma	Ingestion			a) 0.9-0.1 ug/ml b) 1.8-0.15 ug/ml c) 3-0.1 ug/ml	a) Not given b) Not given c) Not given	a) Intact prodrug, methoxymethyl ester, at 0.5 and 1.5 hr. Initial value, 0.12 ug/ml. Unspecified dose of prodrug b) Amoxicillin, at 1.2 and 8 hr. Initial value 0.3 ug/ml. Unspecified dose of prodrug c) Amoxicillin, 1.4 and 8 hr. Initial value, 0.1 ug/ml, unspecified dose of amoxicillin Estimated from graph. ANTIBIOTICS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLISM; DOGS	Smyth, R.D. Rottendorf, G.H. 1980 Toxicology and Applied Pharmacology 53:179-195
5201 Blood, serum	Injection	Microbiological	8	a) 86-332 ug/ml b) 57.7-19.3 ug/ml c) 45.6-14.8 ug/ml	a) 141 + or - 26 ug/ml b) Not given c) Not given	a) Peaks. Peak time near 5 min b) 30 and 240 min levels, arterial serum c) 30 and 240 min levels, venous serum After 1 g Na amoxicillin IV at start of 5 hr dialysis 17-74 yr olds, wt 43-68 kg, with renal insufficiency. DRUGS; ANTIBIOTICS; DISEASES; BLOOD SERUM; ADULTS	Francke, E.L. Appel, G.B. Neu, H.C. 1979 Clinical Pharmacology and Therapeutics 26(1):31-35
5202 Blood, serum	Ingestion	Microbiological	6	7.0-14.6 ug/ml	Not given	1 and 2 hr after 1 g. Final measurement, 9.3 ug/ml at 3 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5203 Milk	Ingestion		6	0.10-0.81 ug/ml	Not given	1 and 5 hr after 1 g. Final measurement, 0.40 ug/ml at 6 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(2-amino-2-phenylacetamido)-3,3-dimethyl-7-oxo, D-(-)- (8 CI)
4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-((aminophenylacetyl)amino)-3,3-dimethyl-7-oxo-, (2S-(2alpha,5alpha,6beta(S*)))- (9 CI)
69-53-4
C16-H19-N3-O4-S
MW 349.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5204 Ascites fluid	Injection	Microbiological	3	a) 2.0-6.7 ug/ml b) 1.3-6.2 ug/ml	a) 3.6 ug/ml b) 3.2 ug/ml	a) About 2.5 hr b) About 6 hr After 592-639 mg IV. Fluid volumes, 7.89-13.2 l (mean, 11.36 l). Very slow disappearance. Chronic cirrhosis patients DRUGS; DRUG THERAPY; LIVER DISEASES; CIRRHOSIS; BLOOD SERUM; ANTIBIOTICS; ADULTS; ASCITES FLUID; COMPARATIVE EVALUATIONS	Lewis, G.P. Jusko, W.J. 1975 Clinical Pharmacology and Therapeutics 18(4):475-484
5205 Blood, serum	Injection	Microbiological	a) 1 b) 1 c) 1	a) 22.4-0.32 ug/ml b) 15.12-0.65 ug/ml c) 45-5.0 ug/ml	a) Not applicable b) Not applicable c) Not applicable	a) Patient 1 b) Patient 2 c) Patient 3 Initial measurement and 6 hr after 592-625 mg IV. Biexponential decline Estimated from graph. Data also for oral doses. Chronic cirrhotics, renal function not unusually impaired. DRUGS; DRUG THERAPY; LIVER DISEASES; CIRRHOSIS; BLOOD SERUM; ANTIBIOTICS; ADULTS; ASCITES FLUID; COMPARATIVE EVALUATIONS	Lewis, G.P. Jusko, W.J. 1975 Clinical Pharmacology and Therapeutics 18(4):475-484
5206 Blood, serum	Injection	Microbiological	24	9.4-92 mg/l	Not given	Day 5 of 150 mg/kg/day by continuous IV 14-76 yr olds, with spontaneous bacterial meningitis. ANTIBIOTICS; SEX; AGE; BLOOD SERUM; FRANCE; DRUGS	Bouvet, E. Gilbert, C. Gaudebout, C. Vachon, F. 1980 British Medical Journal 280(6224):1164-1165
5207 Urine	Injection	Microbiological	a) 9 b) 8	a) 51.7-80.8% of dose b) Not given	a) 65.7% of dose b) 92.4% of dose	a) Cirrhotics, 592-639 mg IV b) Controls, about 600 mg IV 24 hr urines. a) and b) different, P<0.001. Chronic cirrhotics, renal function not unusually impaired. Young, healthy controls, fasted before dose. DRUGS; DRUG THERAPY; LIVER DISEASES; CIRRHOSIS; BLOOD SERUM; ANTIBIOTICS; ADULTS; ASCITES FLUID; COMPARATIVE EVALUATIONS	Lewis, G.P. Jusko, W.J. 1975 Clinical Pharmacology and Therapeutics 18(4):475-484

4,4'-Bipyridinium, 1,1'-dimethyl-, dichloride
1910-42-5
C12-H14-N2.2Cl
MW 408, MP 300 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5208 Blood	Ingestion	Colorimetry	a) 1 b) 1 c) 1	a) Not applicable b) Not applicable c) Not applicable	a) 1.6 ppm b) 3.7 ppm c) 19.4 ppm	a) 25 yr old man 3 hr after ingestion b) 62 yr old woman 24 hr after ingestion c) 45 yr old woman 5 hr after ingestion PESTICIDES; BLOOD; URINE; SUICIDE; CASE HISTORIES; NETHERLANDS	van Dijk, A. Maes, F.A.A. Drost, P.H. Douze, J.M.C. van Heyst, A.F.P. 1975 Archives of Toxicology 34:129-136

(NEXT PAGE)

4,4'-Bipyridinium, 1,1'-dimethyl-, dichloride
1910-42-5
C12-H14-N2.2Cl
MW 408, MP 300 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5209 Urine	Ingestion	Colorimetry	a) 1 b) 1 c) 1	a) Not applicable b) Not applicable c) Not applicable	a) 63.8 ppm b) 86.3 ppm c) 1766 ppm	a) 25 yr old man 3 hr after ingestion b) 62 yr old woman 24 hr after ingestion c) 45 yr old woman 5 hr after ingestion Values given for days 1-7 for a). PESTICIDES; BLOOD; URINE; SUICIDE; CASE HISTORIES; NETHERLANDS	van Dijk, A. Maes, R.A.A. Drost, R.H. Douze, J.M.C. van Heyst, A.N.P. 1975 Archives of Toxicology 34:129-136

4'-Demethylepipodophyllotoxin ethylidene-beta-D-glucoside
33419-42-0
C29-H32-O14
MW 604.61

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5210 Blood, plasma	Injection	Radiometry	9	28.31-45.88 ug/ml	34.11 ug/ml	Peaks, after 1 hr IV of 363-550 mg, tritiated dose. Biexponential decay. Nonresponding cancer patients, ages 41-63 yr, with adequate renal function, 2-8 wk after previous chemotherapy. White blood cell count decreased 0-63% at day 8. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; CEREBROSPINAL FLUID; FECES	Creaven, P.J. Allen, L.M. 1975a Clinical Pharmacology and Therapeutics 18(2):221-226
5211 Cerebrospinal fluid	Injection	Radiometry	5	0.015-0.13 ug/ml	Not applicable	2-26 hr after 1 hr IV of 363-430 mg, tritiated dose. Nonresponding cancer patients, ages 41-63 yr, with adequate renal function, 2-8 wk after previous chemotherapy. White blood cell count decreased 0-63% at day 8. DRUGS; DRUG THERAPY; CHEMOTHERAPY; NEOPLASMS; BLOOD PLASMA; CEREBROSPINAL FLUID; FECES	Creaven, P.J. Allen, L.M. 1975a Clinical Pharmacology and Therapeutics 18(2):221-226

4H-s-Triazolo(4,3-a)(1,4)benzodiazepine, 8-chloro-6-(o-chlorophenyl)-1-methyl- (8 CI)
4H-(1,2,4)Triazolo(4,3-a)(1,4)benzodiazepine, 8-chloro-6-(2-chlorophenyl)-1-methyl- (9 CI)
28911-01-5
C17-H12-Cl2-N4
MW 343.2

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5212 Blood, plasma	Ingestion	TLC Radiometry GC/MS	6	a) 5.52-16.71 ng/ml b) 2.68-10.22 ng/ml c) 2.06-9.17 ng/ml	a) 8.72 + or - 1.64 ng/ml b) 6.13 + or - 1.34 ng/ml c) 6.14 + or - 1.05 ng/ml (SE)	a) Peaks b) Peaks, alpha-Hydroxytriazolam glucuronide (metabolite) c) Peaks, 4-Hydroxytriazolam glucuronide (metabolite) Dose, single 0.88 mg tablet and 71.1 uCi C14-labelled drug 21-46 yr olds, Michigan MICHIGAN; ADULTS; BLOOD PLASMA; DRUGS; HYPNOTICS; COMPARATIVE EVALUATIONS	Eberts, F.S., Jr. Philopoulos, B.S. Reineke, L.M. Vlick, R.W. 1981 Clinical Pharmacology and Therapeutics 29(1):81-93

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-(2-(1H-tetrazol-1-yl)acetamido)- (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-((1H-tetrazol-1-ylacetyl)amino)-, (6R-trans)- (9 CI)
25953-19-9
C14-H14-N8-O4-S3
MW 454.5, MP 198-200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5213 Blood, plasma	Injection			150-9.2 ug/ml	Not given	0.5 and 6 hr after 14.3 mg/kg IV Estimated from graph Data also for dogs, rabbits. ANTIBIOTICS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLISM; DOGS	Smyth, R.D. Hottendorf, G.H. 1980 Toxicology and Applied Pharmacology 53:179-195
5214 Blood, serum	Injection	Microbiological	16	a) 42.9-4.9 ug/ml b) 49.7-6.9 ug/ml	a) Not given b) Not given	a) Range of means 1 and 8 hr after 500 mg IM, controls. Clearance by 12 hr b) Range of means 1 and 48 hr after 500 mg IM, uremic subjects. 28.3 ug/ml at 8 hr Data also for multiple doses. Normal 25-40 yr olds. 40-73 yr old uremic men with cardiac and renal diseases. DRUGS; ANTIBIOTICS; BLOOD SERUM; URINE; ADULTS; DISEASES; COMPARATIVE EVALUATIONS	Welling, P.G. Craig, W.A. Amidon, G.L. Kunin, C.M. 1974 Clinical Pharmacology and Therapeutics 15(4):344-353
5215 Blood, serum	Injection	HPLC	1	300-18 ug/ml	Not applicable	5C and 350 min after 1 or 2 g IV (exact dose not given), preoperative period. Biexponential decline. Estimated from graph. 48 yr old, wt 107.5 kg, with cardiopulmonary bypass surgery. DRUGS; ANTIBIOTICS; MEASUREMENT METHODS; URINE; BLOOD SERUM; ADULTS; SURGERY; HEART DISEASES; COMPARATIVE EVALUATIONS	Miller, K.W. McCoy, H.G. Chan, K.F.H. Fischer, R.P. Lindsay, W.G. Seifert, R.D. Zaske, D.E. 1980 Clinical Pharmacology and Therapeutics 27(4):550-556

(NEXT PAGE)

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-(2-(1H-tetrazol-1-yl)acetamido)- (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-((1H-tetrazol-1-ylacetyl)amino)-, (6R-trans)- (9 CI)
25953-19-9
C14-H14-N8-O4-S3
MW 454.5, MP 198-200 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5216 Urine	Injection	Microbiological	16	a) 41-74% of dose b) 17.3-56.2% of dose	a) Not applicable b) Not applicable	a) Controls b) Uremics Cumulative excretions 4-48 hr after 500 mg IM. Data also for multiple doses. Normal 25-40 yr olds. 40-73 yr old uremic men with cardiac and renal diseases. DRUGS; ANTIBIOTICS; BLOOD SERUM; URINE; ADULTS; DISEASES; COMPARATIVE EVALUATIONS	Welling, P.G. Craig, W.A. Amidon, G.L. Kunin, C.M. 1976 Clinical Pharmacology and Therapeutics 15(4):344-353
5217 Urine	Injection	HPLC	6	a) Not given b) Not given c) Not given	a) 80% of dose b) 51 + or - 8% of dose c) 83 + or - 16% of dose	a) Preoperative, 1 subject b) During surgery c) Postoperative 5 hr cumulative excretion after 7-10 min IV of 1 or 2 g (exact dose not given). 48-71 yr olds, 52.7-107.5 kg, with cardiopulmonary bypass surgery. DRUGS; ANTIBIOTICS; MEASUREMENT METHODS; URINE; BLOOD SERUM; ADULTS; SURGERY; HEART DISEASES; COMPARATIVE EVALUATIONS	Miller, K.W. McCoy, H.G. Chan, K.K.H. Fischer, R.P. Lindsay, W.G. Seifert, R.D. Zaske, D.E. 1980 Clinical Pharmacology and Therapeutics 27(4):550-556

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(2-thienyl)acetamido)- acetate (ester) (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-((2-thienylacetyl)amino)-, (6R-trans)- (9 CI)
153-61-7
C16-H16-N2-O6-S2
MW 396.44

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5218 Blood, serum	Injection	HPLC	1	a) 60-12 ug/ml b) 100-23 ug/ml c) 30-3.7 ug/ml d) 14.5-7.7 ug/ml e) 68-14.5 ug/ml f) 9.0-1.4 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Cephalothin, day before surgery b) Cephalothin, day of surgery c) Cephalothin, day after surgery d) Deacetylcephalothin, day before surgery e) Deacetylcephalothin, day of surgery f) Deacetylcephalothin, day after surgery 30 and 120 min after 2 g cephalothin, IV. Other patient data available. 54 yr old patient, wt 84 kg, cardiopulmonary bypass surgery. DRUGS; DRUG THERAPY; ANTIBIOTICS; BLOOD SERUM; MEASUREMENT METHODS; SURGERY; METABOLITES	Miller, K.W. Chan, K.K.H. McCoy, H.G. Fischer, R.P. Lindsay, W.G. Zaske, D.E. 1979 Clinical Pharmacology and Therapeutics 26(1):54-62
5219 Blood, serum	Injection	Microbiological	6	5.9-0.7 ug/ml	Not given	1 and 3 hr after 1 g Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

(NEXT PAGE)

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(2-thienyl)acetamido)- acetate (ester) (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-((2-thienylacetyl)amino)-, (6R-trans)- (9 CI)
153-61-7
C16-H16-N2-O6-S2
MW 396.44

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5220 Milk	Injection	Microbiological	6	0.47-0.16 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.27 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(4-pyridylthio)acetamido)-, acetate (ester) (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-(((4-pyridinylthio)acetyl)amino)-, (6R-trans)- (9 CI)
21593-23-7
C17-H17-N3-O6-S2
MW 423.49

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5221 Blood, plasma	Injection	HPLC	5	a) 19.3-59.9 ug/ml b) 0.5-2.1 ug/ml	a) 30.53 ug/ml b) 1.12 ug/ml	a) After 5 min b) After 4 hr Dose, 10 min IV of 1 g Healthy 27-47 yr olds DRUGS; ANTIBIOTICS; SWEDEN; URINE; BLOOD PLASMA; ADULTS	Arvidsson, A. Borga, O. Alvan, G. 1979 Clinical Pharmacology and Therapeutics 25(6):870-876
5222 Blood, serum	Injection	Microbiological	6	6.1-0.47 ug/ml	Not given	1 and 3 hr after 1 g Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5223 Milk	Injection	Microbiological	6	0.43-0.16 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.26 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5224 Urine		HPLC	5	Not given	46.6 + or - 10.4% of dose	12 hr excretions after 10 min IV of 1 g Healthy 27-47 yr olds DRUGS; ANTIBIOTICS; SWEDEN; URINE; BLOOD PLASMA; ADULTS	Arvidsson, A. Borga, O. Alvan, G. 1979 Clinical Pharmacology and Therapeutics 25(6):870-876

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-(((2-(aminomethyl)phenyl)acetyl)amino)-3-(((1-(carboxymethyl)-1-H-tetrazol-5-yl)thio)methyl)-8-oxo-, (6R-trans)-
60925-61-3
C20-H21-N7-O6-S2
MW 519.60

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5225 Blood, plasma	Injection			210-8 ug/ml	Not given	0.5 and 12.5 hr after 32.3 mg/kg IV Estimated from graph Data also for dogs, rabbits. ANTIBIOTICS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METABOLISM; DOGS	Smyth, R.D. Mottendorf, G.H. 1980 Toxicology and Applied Pharmacology 53:179-195

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((amino(4-hydroxyphenyl)acetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*)))-
5C370-12-2
C16-H17-N3-O5-S
MW 363.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5226 Blood, serum	Ingestion	Microbiological	13	a) 8.981-0.298 ug/ml b) 17.861-0.619 ug/ml	a) Not given b) Not given	a) Means, 1.5 and 7 hr after 250 mg. Initial value, 3.282 ug/ml at 0.5 hr b) Means, 1.5 and 7 hr after 500 mg. Initial value, 6.369 ug/ml at 0.5 hr. Healthy 20-29 yr olds, wt 62-85 kg, fasted before and during study. DRUGS; ANTIBIOTICS; BLOOD SERUM; ADULTS; ITALY; URINE	Prenna, M. Ripa, S. 1980 Chemotherapy 26:98-102
5227 Blood, serum	Ingestion	Microbiological	20	a) 0.3-33.8 mg/l b) 12.0-56.5 mg/l c) 0.1-38.8 mg/l	a) 5.92 mg/l b) 27.38 mg/l c) 10.84 mg/l	a) 0.5 hr after 1 g b) 2 hr after 1 g c) 12 hr after 1 g Peak within 2 hr in 70% of patients. 26-77 yr olds, wt 43.8-130.2 kg, fasted overnight-4 hr after dose. DRUGS; ANTIBIOTICS; ADULTS; URINE; BLOOD PLASMA	Cutter, R.E. Blair, A.D. Kelly, M.R. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):514-521
5228 Blood, serum	Ingestion	Microbiological	6	11.6-21.6 ug/ml	Not given	1 and 3 hr after 1 g Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Fafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5229 Milk	Ingestion	Microbiological	6	0.10-1.64 ug/ml	Not given	1 and 6 after 1 g. Final measurement, 1.16 ug/ml at 8 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Fafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5230 Urine	Ingestion	Microbiological	13	a) Not given b) Not given	a) 89.92% of dose (224.8 mg) b) 86.34% of dose (431.7 mg)	a) 250-mg dose b) 500-mg dose 0-24 hr excretions Healthy 20-29 yr olds, wt 62-85 kg, fasted before and during study. DRUGS; ANTIBIOTICS; BLOOD SERUM; ADULTS; ITALY; URINE	Prenna, M. Ripa, S. 1980 Chemotherapy 26:98-102

(NEXT PAGE)

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((amino(4-hydroxyphenyl)acetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*)))-
50370-12-2
C16-H17-N3-O5-S
MW 363.42

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5231 Urine	Ingestion	Microbiological	19	10.6-105.8% of dose	68.3% + or - 26.8% of dose	0-48 hr cumulative excretions after 1 g 26-77 yr olds, wt 43.8-130.2 kg, fasted overnight-4 hr after dose. DRUGS; ANTIBIOTICS; ADULTS; URINE; BIOD PLASMA	Cutter, R.E. Blair, A.D. Kelly, M.R. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):514-521

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((amino-1,4-cyclohexadien-1-ylacetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*)))-
38821-53-3
C16-H19-N3-O4-S
MW 349.41, MP 140-142 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5232 Blood, serum	Injection	Microbiological	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 11.08 ug/ml b) 4.30 ug/ml c) 11.68 ug/ml d) 10.25 ug/ml e) 9.84 ug/ml f) 9.41 ug/ml	a) Mean peaks at 0.63 hr, males, gluteus maximus b) Mean peaks at 2.05 hr, females, gluteus maximus c) Mean peaks at 0.58 hr, males, deltoid d) Mean peaks at 0.65 hr, females, deltoid e) Mean peaks at 0.54 hr, males, vastus lateralis f) Mean peaks at 0.99 hr, females, vastus lateralis Dose, 475 mg IM at sites indicated e) and b) significantly different. Healthy Caucasian 19-28 yr olds. No strenuous exercise. DRUGS; ANTIBIOTICS; ADULTS; SEX; BIOD SERUM; COMPARATIVE EVALUATIONS; URINE	Vukovich, R.A. Brannick, L.J. Sugerman, A.A. Weiss, E.S. 1975 Clinical Pharmacology and Therapeutics 18(2):215-220
5233 Urine	Injection	Microbiological	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 88% of dose (418 mg) b) 73% of dose (347 mg) 87% of dose (413 mg) d) 77% of dose (366 mg) e) 80% of dose (380 mg) f) 70% of dose (332.5 mg)	a) Males, gluteus maximus b) Females, gluteus maximus c) Males, deltoid d) Females, deltoid e) Males, vastus lateralis f) Females, vastus lateralis Doses-475 mg IM at sites indicated 24-hr cumulative excretions Healthy Caucasian 19-28 yr olds. No strenuous exercise. DRUGS; ANTIBIOTICS; ADULTS; SEX; BIOD SERUM; COMPARATIVE EVALUATIONS; URINE	Vukovich, R.A. Brannick, L.J. Sugerman, A.A. Weiss, E.S. 1975 Clinical Pharmacology and Therapeutics 18(2):215-220

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((hydroxyphenylacetyl)amino)-3-(((1-methyl-1H-tetrazol-5-yl)thio)methyl)-8-oxo-, (6R-(6alpha,7beta(R*)))-
34444-01-8
C18-H18-N6-O5-S2
MW 462.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5234 Blood, plasma	Injection	HPLC	12	a) 70-126 ug/ml b) 46-80 ug/l c) 21-37 ug/ml d) Not given e) Not given	a) Not given b) Not given c) Not given d) 81.68 + or - 16.54 ug/ml e) 3.53 + or - 1.24 ug/ml	a) After 10 min, during dialysis, 6 patients b) After 30 min, during dialysis, 6 patients c) After 4.5 hr of dialysis, 6 patients d) 28 hr mean, interdialysis, 3 patients e) 28 hr mean, 6 controls Dose, 15 mg/kg. 22-52 yr olds, wt 54-68 kg, with chronic renal failure, on hemodialysis. Healthy controls. DRUGS; ANTIBIOTICS; BLOOD PLASMA; DISEASES; URINE; COMPARATIVE EVALUATIONS; ADULTS	Gambertoglio, J.G. Aziz, M.S. Lin, E.T. Grausz, H. Naughton, J.L. Benet, L.Z. 1979 Clinical Pharmacology and Therapeutics 26(5):592-599
5235 Urine	Injection	HPLC	a) 1 b) 1	a) 600-100 ug/ml b) 350-100 ug/ml	a) Not given b) Not given	a) 22 yr old with urine output of 600 ml/day, 2-hr and 12-24 hr excretions after 15 mg/kg b) 52 yr old with urine output of <100 ml/day, 4-hr and 15-20 hr excretions after 15 mg/kg 63.6 and 68.2 kg patients, with chronic renal failure. DRUGS; ANTIBIOTICS; BLOOD PLASMA; DISEASES; URINE; COMPARATIVE EVALUATIONS; ADULTS	Gambertoglio, J.G. Aziz, M.S. Lin, E.T. Grausz, H. Naughton, J.L. Benet, L.Z. 1979 Clinical Pharmacology and Therapeutics 26(5):592-599

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-(2-amino-2-phenylacetamido)-3-methyl-8-oxo-, D- (8 CI)
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((aminophenylacetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*)))- (9 CI)
15686-71-2
C16-H17-N3-O4-S
MW 347.4

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5236 Blood, serum	Ingestion	Microbiological	6	22.9-13.6 ug/ml	Not given	1 and 2 hr after 1 g. Final measurement, 2.7 ug/ml at 3 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288
5237 Milk	Ingestion	Microbiological	6	0.20-0.50 ug/ml	Not given	1 and 4 hr after 1 g. Final measurement 0.32 ug/ml at 6 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5H-Dibenz(b,f)azepine-5-carboxamide
298-46-4
C15-H12-N2-O
MW 236.26, MP 204-206 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5238 Blood			2	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given	a) 13.5 u mol/l b) 4.5 u mol/l c) 2.8 u mol/l d) 1.0 u mol/l e) 8.5 u mol/l f) 5.5 u mol/l g) 3.0 u mol/l h) 0.0 u mol/l i) 13.0 u mol/l j) 7.5 u mol/l	a) Carbamazepine, mother, 2nd day b) Carbamazepine, child, 2nd day c) 10,11-epoxy carbamazepine (metabolite), mother, 2nd day d) 10,11-epoxy carbamazepine, child, 2nd day e) Carbamazepine, mother, 3rd day f) Carbamazepine, child, 3rd day g) 10,11-epoxy carbamazepine, mother, 3rd day h) 10,11-epoxy carbamazepine, child, 3rd day i) Carbamazepine, mother, 30th day j) Carbamazepine, child, 30th day Values for after delivery. Patient took 8 mg/kg carbamazepine and 6 mg/kg diphenylhydantoin daily during gestation and lactation. Newborn breast-fed from 6th day. DRUGS; BLOOD; LACTATION; NEWBORN; METABOLITES; MILK	Pynnonen, S. Sillanpaa, M. 1975 Lancet 2(7934):563
5239 Blood, plasma	Ingestion	MS	5	7.80-3.70 ug/ml	5.55 ug/ml	Steady state levels (area under the curve/t) after 100 or 200 mg labelled dose. 25-34 yr old epileptics on long-term carbamazepine and 1 or more additional anticonvulsants. Fasted overnight to 2 hr after dose. DRUGS; METABOLISM; ENZYMES; GERMANY; METABOLITES; ANTICONVULSANTS; BLOOD PLASMA; URINE; ADULTS	Eichelbaum, M. Kothe, K.W. Hoffmann, F. von Unruh, G.H. 1979 Clinical Pharmacology and Therapeutics 26(3):366-371
5240 Blood, plasma		GC	10	a) 4.6-7.7 mg/l b) 0.31-1.01 mg/l	a) 5.7 mg/l b) 0.77 mg/l	a) After daily doses of 5.3-21.0 mg/kg (mean 10.2 mg/kg). Saliva and plasma levels r=0.991, 7 patients b) Epoxide metabolite-after daily doses of 5.3-11.8 mg/kg, 6 patients. 17-63 yr olds on long-term treatment for epilepsy. DRUGS; ANTICONVULSANTS; BLOOD PLASMA; SALIVA; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES; DISEASES; NERVOUS SYSTEM DISEASES; NETHERLANDS	Westenberg, H.G.M. Van der Kleijn, E. Oei, T.T. de Zeeuw, P.A. 1978 Clinical Pharmacology and Therapeutics 23(3):320-328
5241 Blood, serum		GC/MS	6	a) 1.55-3.12 ug/ml b) 1.79-2.40 ug/ml c) 1.33-2.10 ug/ml	a) 2.23 ug/ml b) 2.02 ug/ml c) 1.72 ug/ml	a) Day 11 b) Day 18 c) Day 22 Minimum steady-state levels, day 11-22 of 250 mg 2X/day oral valproic acid and 200 mg/day carbamazepine starting on day 5. Day 22 value different from day 11, P<0.05. Normal 22-33 yr olds, no other drugs or alcohol. DRUGS; DRUG INTERACTION; ANTICONVULSANTS; BLOOD SERUM; ADULTS	Powdle, T.A. Levy, R.H. Cutler, R.E. 1979 Clinical Pharmacology and Therapeutics 26(5):629-634

(NEXT PAGE)

5H-Dibenz(b,f)azepine-5-carboxamide
298-46-4
C15-H12-N2-O
MW 236.26, MP 204-206 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5242 Milk			1	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 7.5 u mol/l b) 2.6 u mol/l c) 5.5 u mol/l d) 1.8 u mol/l e) 7.5 u mol/l f) 4.4 u mol/l	a) Carbamazepine, 2nd day b) 10,11-epoxy carbamazepine (metabolite), 2nd day c) Carbamazepine, 3rd day d) 10,11-epoxy carbamazepine, 3rd day e) Carbamazepine, 30th day f) 10,11-epoxy carbamazepine, 30th day Patient took 8 mg/kg carbamazepine and 6 mg/kg diphenylhydantion daily during gestation and lactation. DRUGS; BLOOD; LACTATION; NEWBORN; METABOLITES; MILK	Pynnonen, S. Sillanpaa, M. 1975 Lancet 2(7934):563
5243 Saliva		CC	7	1.17-1.74 mg/l	1.37 mg/l	After daily doses of 5.3-21.0 mg/kg. Saliva and plasma levels r=0.991, ratio=0.26 + or - 0.01. 17-63 yr olds on long-term treatment for epilepsy. DRUGS; ANTICONVULSANTS; BLOOD PLASMA; SALIVA; COMPARATIVE EVALUATIONS; METABOLISM; METABOLITES; DISEASES; NERVOUS SYSTEM DISEASES; NETHERLANDS	Westenberg, H.G.M. Van der Kleijn, E. Gei, T.T. de Zeeuw, P.A. 1978 Clinical Pharmacology and Therapeutics 23(3):320-328
5244 Urine	Ingestion	CC	5	a) 0.35-0.87% of dose b) 1.02-1.41% of dose c) 32.7-60.6% of dose d) 5.17-8.80% of dose	a) 0.52% of dose b) 1.14% of dose c) 49.9% of dose d) 6.80% of dose	a) Carbamazepine b) 10,11-Epoxide c) Trans-diol d) 9-Hydroxy Drug + metabolites in 24-hr urines after 800-1300 mg/day carbamazepine. 25-34 yr old epileptics on long-term carbamazepine and 1 or more additional anticonvulsants. Fasted overnight to 2 hr after dose. DRUGS; METABOLISM; ENZYMES; GERMANY; METABOLITES; ANTICONVULSANTS; BLOOD PLASMA; URINE; ADULTS	Fichelbaum, M. Wothe, K.W. Hoffmann, F. von Unruh, G.E. 1979 Clinical Pharmacology and Therapeutics 26(3):366-371

5H-Dibenz(b,f)azepine, 10,11-dihydro-5-(3-(methylamino)propyl)- (8 CI)
5E-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N-methyl- (9 CI)
50-47-5
C18-H22-N2
MW 266.37, BP 172-174 C at 0.02 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5245 Blood, plasma	Ingestion	GC/MS	26	a) 13.4-379.4 ng/ml b) 17.2-489.0 ng/ml c) 27.6-882.2 ng/ml	a) 71.3 + or - 16.8 ng/ml b) 118.0 + or - 25.8 ng/ml c) 173.4 + or - 40.5 ng/ml (S.E.)	a) Week 1, 100 mg nightly, 24 subjects b) Week 2, 150 mg nightly c) Week 3, 200 mg nightly 10-12 hr after dose. Depressed 19-57 yr olds. ECG abnormalities, increased heart rate, and reduction in mean diastolic pressure in week 1 only. DRUGS; DRUG THERAPY; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; BLOOD PRESSURE; HEALTH HAZARDS; ADULTS; WASHINGTON	Veith, R.C. Friedel, R.O. Bloom, V. Bielski, R. 1980 Clinical Pharmacology and Therapeutics 27(6):796-802

(NEXT PAGE)

5H-Dibenz(b,f)azepine, 10,11-dihydro-5-(3-(methylamino)propyl)- (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N-methyl- (9 CI)
50-47-5
C18-H22-N2
MW 266.37, BP 172-174 C at 0.02 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5246 Blood, plasma	Ingestion	RIA	a) 1 b) 1 c) 1	a) 43-30 ng/ml b) 18-1.9 ng/ml c) 7-0.4 ng/ml	a) Not given b) Not given c) Not given	a) 7.5 and 72 hr, patient with low Beta phase values b) 7.5 and 72 hr, patient with medium Beta phase values c) 7.5 and 48 hr, patient with high Beta phase values After 50 mg as the hydrochloride. Estimated from graphs Beta phase, monoexponential terminal decline Depressed patients, in good physical health, fasted overnight and 4 hr after A.M. dose. DRUGS; DRUG THERAPY; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; METABOLITES	Brunswick, D.J. Amsterdam, J.D. Mendels, J. Stern, S.L. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):605-610

5H-Dibenz(b,f)azepine, 10,11-dihydro-5-(3-(methylamino)propyl)-, monohydrochloride (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N-methyl-, monohydrochloride (9 CI)
58-28-6
C18-H22-N2.Cl-H
MW 302.88, MP 214-218 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5247 Blood, plasma	Injection	GC	9	a) 12-30 ng/ml b) 10-28 ng/ml	a) 21.11 ng/ml b) 19.11 ng/ml	a) 3 hr after 50 mg dose b) 4 hr after 50 mg dose Healthy 20-59 yr olds, London, England. DRUGS; BLOOD PLASMA; ADULTS; COMPARATIVE EVALUATIONS; UNITED KINGDOM	Ehsanullah, P.S.B. Ghose, K. Kirby, M.J. Turner, P. Witts, D. 1977 Psychopharmacology 52:73-77
5248 Blood, plasma	Ingestion	GC	18	a) Not given b) Not given	a) 62 + or - 34 ng/ml b) 71 + or - 37 ng/ml	a) On imipramine b) On desmethylimipramine At 8 AM after 2 wk on 75 mg/day at bedtime. Enuretic boys, mean age 9.8 + or - 1.9 yr. Increase in plasma norepinephrine on standing. Rise in supine pulse rate. Dry mouth. DRUGS; CHILDREN; BLOOD PRESSURE; BLOOD PLASMA; DRUG THERAPY	Lake, C.R. Mikkelsen, E.J. Papoport, J.L. Zavadil, A.P. Kopin, I.J. 1979 Clinical Pharmacology and Therapeutics 26(5):647-653

(NEXT PAGE)

5H-Dibenz(b,f)azepine, 10,11-dihydro-5-(3-(methylamino)propyl)-, monohydrochloride (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N-methyl-, monohydrochloride (9 CI)
58-28-6
C18-H22-N2.C1-H
MW 302.88, MP 214-218 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5249 Blood, plasma	Ingestion	GC/MF	2	1560-1580 ng/ml	1570 ng/ml	Peaks. Data for mixed desipramine-HCl and imipramine-HCl overdose also available. Overdose patients, ages 17 and 22 yr. QRS interval of 100 msec or greater on routine ECG, and one or more of the following abnormal deep tendon reflexes, ventricular rate of 120 beats/min or greater, right bundle branch block, atrial and ventricular premature contractions, junctional and idioventricular arrhythmias, unconsciousness, respiratory support necessary, grand mal seizures, and death. DRUGS; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; DRUG ABUSE; MISSOURI	Biggs, J.T. Spiker, D.G. Petit, J.M. Ziegler, V.E. 1977 Journal of the American Medical Association 238(2):135-138

5H-Dibenz(b,f)azepine, 3-chloro-10,11-dihydro-5-(3-(methylamino)propyl)- (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 3-chloro-10,11-dihydro-N-methyl- (9 CI)
303-48-0
C18-H21-C1-N2
MW 300.86

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5250 Blood, plasma		GC/MS CC	a) 15 b) 3	a) 200-1250 nmoles/l b) 700-1100 nmoles/l	a) Not given b) Not given	a) Depressed patients b) Obsessive-compulsive patients before AM dose of 50 mg chlorimipramine 3x/day, 3 wk DRUGS; SWEDEN; BLOOD PLASMA; CEREBROSPINAL FLUID; METABOLITES; DRUG THERAPY; ANTIDEPRESSIVE AGENTS	Bertilsson, L. Braithwaite, R. Tybring, G. Garle, M. Borga, O. 1975 Clinical Pharmacology and Therapeutics 26(2):265-271
5251 Cerebrospinal fluid		GC/MS	a) 15 b) 3	a) 3-37 nmoles/l b) 12.5-85 nmoles/l	a) Not given b) Not given	a) Depressed patients b) Obsessive-compulsive patients Before AM dose of chlorimipramine, 50 mg 3x/day, 3 wk DRUGS; SWEDEN; BLOOD PLASMA; CEREBROSPINAL FLUID; METABOLITES; DRUG THERAPY; ANTIDEPRESSIVE AGENTS	Bertilsson, L. Braithwaite, R. Tybring, G. Garle, M. Borga, O. 1975 Clinical Pharmacology and Therapeutics 26(2):265-271

5H-Dibenz(b,f)azepine, 5-(3-(dimethylamino)propyl)-10,11-dihydro- (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N,N-dimethyl- (9 CI)
50-49-7
C19-H24-N2
MW 280.40, BP 160 C at 0.01 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5252 Blood, plasma	Ingestion	GC	18	Not given	28 + or - 21 ng/ml	At 8 AM after 2 wk on 75 mg/day at bedtime. Enuretic boys, mean age 9.8 + or - 1.9 yr. Dry mouth, increases in supine and standing pulse rate, diastolic blood pressure, and plasma norepinephrine. Dizziness on standing. Reduced enuresis. DRUGS; CHILDREN; BLOOD PRESSURE; BLOOD PLASMA; DRUG THERAPY	Lake, C.R. Mikkelsen, E.J. Rapoport, J.L. Zavadil, A.P. Fopin, I.J. 1979 Clinical Pharmacology and Therapeutics 26(5):647-653
5253 Blood, plasma	Ingestion	RIA	1	a) 20-0.8 ng/ml b) 13-4 ng/ml	a) Not given b) Not given	a) Imipramine. Biexponential decline b) Desmethylimipramine (metabolite). Monoexponential decline 7.5 and 80 hr after single dose of 50 mg as the hydrochloride Estimated from graph. Healthy volunteer fasted overnight and 4 hr after A.M. dose. DRUGS; DRUG THERAPY; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; METABOLITES	Brunswick, D.J. Amsterdam, J.D. Mendels, J. Stern, S.L. 1979 Clinical Pharmacology and Therapeutics 25(5 pt 1):605-610

5H-Dibenz(b,f)azepine, 5-(3-(dimethylamino)propyl)-10,11-dihydro-, monohydrochloride (8 CI)
5H-Dibenz(b,f)azepine-5-propanamine, 10,11-dihydro-N,N-dimethyl-, monohydrochloride (9 CI)
113-52-0
C19-H24-N2.Cl-H
MW 316.85, MP 174-175 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5254 Blood, plasma	Ingestion	GC/MP	1	Not applicable	1950 ng/ml	Peak. Data for mixed imipramine-HCl and desipramine-HCl overdose also available. Overdose patient, age 29 yr. QRS of 100 msec or greater on routine ECG, and one or more of the following abnormal deep tendon reflexes, ventricular rate of 120 beats/min or greater, right bundle branch block, atrial and ventricular premature contractions, junctional and idioventricular arrhythmias, unconsciousness, respiratory support necessary, grand mal seizures, and death. DRUGS; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; DRUG ABUSE; MISSOURI	Biggs, J.T. Spiker, D.G. Petit, J.M. Ziegler, V.E. 1977 Journal of the American Medical Association 238(2):135-138

5H-Dibenzo(a,d)cycloheptene-delta(5,gamma)-propylamine, 10,11-dihydro-N-methyl- (8 CI)
1-Propanamine, 3-(10,11-dihydro-5H-dibenzo(a,d)cyclohepten-5-ylidene)-N-methyl- (9 CI)
72-69-5
C19-H21-N
MW 263.37, MP 213-215 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5255 Blood, plasma	Ingestion	GC	12	a) 31-38 ng/ml b) 52-38 ng/ml	a) Not applicable b) Not applicable	a) 0 and 24 hr after 6 day regimen of 3 X 25 mg/day as tablets. 36 ng/ml at 7 hr b) 7 and 24 hr after 6 day regimen of 75 mg/day single tablet. Initial measurement, 41 ng/ml at 0 hr. Healthy 18-60 yr olds UNITED KINGDOM; BLOOD; BLOOD PLASMA; ADULTS; NERVOUS SYSTEM DISEASES; DRUG THERAPY; COMPARATIVE EVALUATIONS; ANTIDEPRESSIVE AGENTS	Hucker, H.B. Stauffer, S.C. Clayton, F.G. Nakra, B.R.S. Gaind, M.B. 1975 Journal of Clinical Pharmacology 15:168-172
5256 Blood, plasma	Ingestion Injection	Radiometry	6	a) 670-1500 hr ug/l b) 1430-3030 hr ug/l	a) Not given b) Not given	a) After 50 mg 14C-labelled dose, oral b) After 50 mg 14C-labelled dose, IV Area under the curve data Healthy, 21-28 yr olds on no other medication. Some sedative effect in most. DRUGS; DENMARK; BLOOD PLASMA; COMPARATIVE EVALUATIONS; ADULTS	Gram, L.F. Overo, K.F. 1975 Clinical Pharmacology and Therapeutics 18(3):305-314
5257 Blood, serum	Ingestion	GC	9	50-450 ng/ml	Not given	12 hr after last dose of 50 mg 3x/day for 2 wk. Values estimated from graph. Hospitalized patients. DRUGS; MEASUREMENT METHODS; DENMARK; BLOOD SERUM; ANTIDEPRESSIVE AGENTS	Jorgensen, A. 1975 Acta Pharmacologica et Toxicologica 36:79-90

5H-Dibenzo(a,d)cycloheptene-delta(5,gamma)-propylamine, 10,11-dihydro-N,N-dimethyl- (8 CI)
1-Propanamine, 3-(10,11-dihydro-5H-dibenzo(a,d)cyclohepten-5-ylidene)-N,N-dimethyl- (9 CI)
50-48-6
C20-H23-N
MW 277.39, MP Hydrochloride 196-197 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5258 Blood, plasma	Ingestion	GC/MS	12	a) 29-151 ng/ml b) 5-179 ng/ml c) 5-21 ng/ml d) 53-130 ng/ml e) 26-112 ng/ml f) 82-258 ng/ml	a) 81 + or - 40 ng/ml b) 71 + or - 57 ng/ml c) 12 + or - 5 ng/ml d) 91 + or - 30 ng/ml e) 82 + or - 27 ng/ml f) 176 + or - 64 ng/ml	a) Amitriptyline b) Nortriptyline c) 10-Hydroxyamitriptyline d) 10-Hydroxyamitriptyline conjugate e) 10-Hydroxynortriptyline f) 10-Hydroxynortriptyline conjugate Minimum steady state values on 50 mg amitriptyline, 3X/day. 61.4-104.1 kg men. DRUGS; METABOLITES; MEASUREMENT METHODS; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS	Garland, W.A. Muccino, R.R. Min, B.H. Cupano, J. Fann, W.E. 1979 Clinical Pharmacology and Therapeutics 25(6):844-856

(NEXT PAGE)

5H-Dibenzo(a,d)cycloheptene-delta(5,gamma)-propylamine, 10,11-dihydro-N,N-dimethyl- (8 CI)
1-Propanamine, 3-(10,11-dihydro-5H-dibenzo(a,d)cycloheptene-5-ylidene)-N,N-dimethyl- (9 CI)
50-48-6
C20-H23-N
MW 277.39, MP Hydrochloride 196-197 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5259 Blood, plasma	Ingestion	GC	12	a) 60-50 ug/ml b) 90-45 ng/ml	a) Not applicable b) Not applicable	a) 4 and 24 hr after 6 day regimen of 3 X 25 mg/day as tablets. Initial measurement, 50 ng/ml at 0 hr. b) 6 and 24 hr after 6 day regimen of 75 mg/day single tablet. Initial measurement, 50 ng/ml at 0 hr. Healthy 18-60 yr olds UNITED KINGDOM; BLOOD; BLOOD PLASMA; ADULTS; DRUG THERAPY; COMPARATIVE EVALUATIONS; ANTIDEPRESSIVE AGENTS	Hucker, H.B. Stauffer, S.C. Clayton, F.G. Nakra, B.R.S. Gaind, M.B. 1975 Journal of Clinical Pharmacology 15:168-172
5260 Blood, plasma	Ingestion	GC/MS	20	a) 25.6-58.6 ng/ml b) 11.4-27.4 ng/ml c) 29-151 ng/ml d) 5-179 ng/ml	a) 39.4 ng/ml b) 16.1 ng/ml c) 81 + or - 40 ng/ml d) 71 + or - 57 ng/ml	a) Peaks about 4 hr after 75 mg as HCl, 8 subjects b) Peaks, nortriptyline, 10 hr after 75 mg amitriptyline HCl, 8 subjects c) Amitriptyline before 1st daily dose of 50 mg 3x/day for month, 12 subjects d) Nortriptyline before 1st daily dose of 50 mg amitriptyline HCl 3x/day for month, 12 subjects Medical students and psychiatric outpatients. None on other drugs. DRUGS; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; METABOLITES; ADULTS	Garland, W.A. Min, B.H. Birkett, D.J. 1978 Research Communications in Chemical Pathology and Pharmacology 22(3):475-484
5261 Blood, serum	Ingestion	GC	a) 2 b) 9	a) 47.5-7 ng/ml b) 20-200 ng/ml	a) Not given b) Not given	a) Means 2 and 30 hr after 50 mg dose. Controls. Nortryptyline undetected b) 12 hr after last dose of 50 mg 3x/day for 2 wk Estimated from graph. Controls, ages 27 and 33 yr, and hospitalized patients. DRUGS; MEASUREMENT METHODS; DENMARK; BLOOD SERUM; ANTIDEPRESSIVE AGENTS	Jorgensen, A. 1975 Acta Pharmacologica et Toxicologica 36:79-90

5H-Dibenzo(a,d)cycloheptene-delta(5,gamma)-propylamine, 10,11-dihydro-N,N-dimethyl-, hydrochloride (8 CI)
1-Propanamine, 3-(10,11-dihydro-5H-dibenzo(a,d)cyclohepten-5-ylidene)-N,N-dimethyl-, hydrochloride (9 CI)
549-18-8
C20-H23-N.Cl-H
MW 313.85, MP 196-197 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5262 Blood, plasma	Ingestion	GC/MF	7	1148-2190 ng/ml	1689.43 ng/ml	Mean peaks. Data for mixed amitriptyline-HCl and doxepin-HCl overdose also available. Overdose patients ages 19-45 yr. QRS of 100 msec or greater on routine ECG, and one or more of the following abnormal deep tendon reflexes, ventricular rate of 120 beats/min or greater, right bundle branch block, atrial and ventricular premature contractions, junctional and idioventricular arrhythmias, unconsciousness, respiratory support necessary, grand mal seizures, and death. DRUGS; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; DRUG ABUSE; MISSOURI	Biggs, J.T. Spiker, D.G. Petit, J.M. Ziegler, V.E. 1977 Journal of the American Medical Association 238(2):135-138

6H-Dibenzo(b,d)pyran-1-ol, 3-(1,2-dimethylheptyl)-7,8,9,10-tetrahydro- 6,6,9-trimethyl-
32904-22-6
C25-H38-O2
MW 370.63

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5263 Blood, plasma	Injection	TLC Radiometry	3	a) 1800-30 dpm/ml b) 1400-11 dpm/ml	a) Not applicable b) Not applicable	a) Total radioactivity 0 and 72 hr after dose b) Unaltered drug 0 and 48 hr after dose Range of means after 200 ug 14C-labelled drug, IV. Estimated from graph. Normal 21-23 yr old casual marihuana smokers. No habitual drug usage. Tachycardia starting in 5-20 min and lasting 4-6 hr after dose. Hypotension peaking at 1 hr, lasting > 12 hr. Dizziness on standing. Dry mouth and drowsiness after 2 hr. Euphoria in 1 patient. DRUGS; METABOLISM; BLOOD PLASMA; INDIANA; URINE; FECES; NEUROLOGIC MANIFESTATIONS	Lemberger, L. McMahon, E. Archer, E. Matsumoto, K. Rowe, H. 1974 Clinical Pharmacology and Therapeutics 15(4):380-386

(NEXT PAGE)

6H-Dibenzo(b,d)pyran-1-ol, 3-(1,2-dimethylheptyl)-7,8,9,10-tetrahydro- 6,6,9-trimethyl-
32904-22-6
C25-H38-O2
MW 370.63

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5264 Urine	Injection	Radiometry	3	a) 2-3% of dose b) 5-8% of dose c) 9-16% of dose	a) Not given b) Not given c) Not given	a) 4 hr b) 24 hr c) 7 days Cumulative excretions as % of total radioactivity, after 200 ug IV 14C-labelled drug. Major excretion was in feces (53-61% in 7 days). Normal 21-23 yr old casual marihuana smokers. No habitual drug usage. Tachycardia starting in 5-20 min and lasting 4-6 hr after dose. Hypotension peaking at 1 hr, lasting > 12 hr. Dizziness on standing. Dry mouth and drowsiness after 2 hr. Euphoria in 1 patient. DRUGS; METABOLISM; BLOOD PLASMA; INDIANA; URINE; FECES; NEUROLOGIC MANIFESTATIONS	Lemberger, L. McMahon, R. Archer, R. Matsumoto, K. Rowe, H. 1974 Clinical Pharmacology and Therapeutics 15(4):380-386

6H-Purin-6-one, 2-amino-1,9-dihydro-9-((2-hydroxyethoxy)methyl)-
59277-89-3
C8-H11-N5-O3
MW 225.24

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5265 Blood, plasma	Injection	RIA	a) 3 b) 4 c) 2 d) 5	a) 6.48-0.07 umoles/l b) 12.1-0.09 umoles/l c) 14.9-0.09 umoles/l d) 33.7-0.51 umoles/l	a) Not given b) Not given c) Not given d) Not given	a) 1 and 19 hr means after 1 hr IV of 0.5 mg/kg. Initial measurement, 2.61 umoles/l at 0.5 hr b) 1 and 19 hr means after 1 hr IV of 1.0 mg/kg. Initial measurement, 4.48 umoles/l at 0.5 hr c) 1 and 19 hr means after 1 hr IV of 2.5 mg/kg. Initial measurement, 11.3 umoles/l at 0.5 hr d) 1 and 19 hr means after 1 hr IV of 5.0 mg/kg. Initial measurement, 18.5 umoles/l at 0.5 hr 49-82 yr olds, wt 41-117 kg, with advanced cancer DRUGS; CHEMOTHERAPY; BLOOD PLASMA; URINE; INFECTION; ADULTS; NEOPLASMS; METABOLISM; METABOLITES	de Miranda, P. Whitley, R.J. Blum, M.P. Keeney, R.E. Barton, N. Cocchetto, D.M. Good, S. Hemstreet, G.P. III Kirk, L.E. Page, D.A. Elion, G.B. 1979 Clinical Pharmacology and Therapeutics 26(6):718-728
5266 Urine	Injection	RIA	a) 2 b) 3 c) 2 d) 5	a) 63-69% of dose b) 51-66% of dose c) 46-64% of dose d) 30-65% of dose	a) Not given b) Not given c) Not given d) Not given	a) 0.5 mg/kg b) 1.0 mg/kg c) 2.5 mg/kg d) 5.0 mg/kg Cumulative 72 hr excretion of unchanged drug after 1 hr IV 49-82 yr olds, wt 41-117 kg, with advanced cancer DRUGS; CHEMOTHERAPY; BLOOD PLASMA; URINE; INFECTION; ADULTS; NEOPLASMS; METABOLISM; METABOLITES	de Miranda, P. Whitley, R.J. Blum, M.P. Keeney, R.E. Barton, N. Cocchetto, D.M. Good, S. Hemstreet, G.P. III Kirk, L.E. Page, D.A. Elion, G.B. 1979 Clinical Pharmacology and Therapeutics 26(6):718-728

7H-Furo(3,2-g)(1)benzopyran-7-one, 9-methoxy-
298-81-7
C12-H8-O4
MW 216.18, MP 148 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5267 Blood, plasma	Ingestion	GC-EC	5	a) 64-284 ng/ml b) 180-500 ng/ml	a) 177 ng/ml b) 324 ng/ml	a) Peaks, fasting. Peak times 1-2.5 hr b) Peaks, after intake of standard breakfast. Peak times 1-2.5 hr After 40 mg as 10 mg tablets. Peaks in a) and b) differed significantly. Healthy males with normal renal and hepatic function, fasting 10 hr before dose and on no other drugs. DRUGS; SKIN DISEASES; SWEDEN; ULTRAVIOLET RADIATION; FOODS; BLOOD PLASMA; COMPARATIVE EVALUATIONS	Ehrsson, H. Wilsson, S.-O. Ehrnebo, M. Wallin, I. Wennersten, G. 1979 Clinical Pharmacology and Therapeutics 25(2):167-171
5268 Blood, serum	Ingestion	GC-EC	5	250-700 ng/ml	Not given	Range of peaks 0.5-2 hr after about 0.6 mg/kg as fast-release tablets. All had < 30 ng/ml by 5 hr. Slightly pigmented, adults with psoriasis. Erythema in response to UV exposure. Sensitivity related to serum levels, r=0.78, p<0.001. DRUGS; DRUG THERAPY; BLOOD SERUM; SWEDEN; SKIN DISEASES; ULTRAVIOLET RADIATION; ADULTS	Swanbeck, G. Ehrsson, H. Ehrnebo, M. Wallin, I. Jonsson, L. 1979 Clinical Pharmacology and Therapeutics 25(4):478-480

9,10-Ethanoanthracene-9(10H)-propylamine, N-methyl- (8 CI)
9,10-Ethanoanthracene-9(10H)-propanamine, N-methyl- (9 CI)
10262-69-8
C20-H23-N
MW 277.41, MP 92-94 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5269 Blood, plasma		GC/MS	4	a) 353.4-1558.3 ng/ml b) 88.1-179.6 ng/ml	a) 937.5 ng/ml b) 146.8 ng/ml	a) Maprotiline b) Desmethylmaprotiline Steady state levels. Patients on normal therapeutic doses DRUGS; MEASUREMENT METHODS; SELFACTIVES; ANTIDEPRESSIVE AGENTS; BLOOD PLASMA; RABBITS; METABOLITES	Jindal, S.P. Lutz, T. Vestergaard, P. 1980 Journal of Pharmaceutical Sciences 69(6):684-687

9,10-Secocholesta-5,7,10(19)-triene-3beta,25-diol (8 CI)
9,10-Secocholesta-5,7,10(19)-triene-3,25-diol, (3beta,5Z,7E)- (9 CI)
19356-17-3
C27-H44-O2
MW 400.65

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
5270 Blood				a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 42.8 nmol/l b) 32.5 nmol/l c) 28.0 nmol/l d) 20.0 nmol/l e) 38.5 nmol/l f) 20.3 nmol/l	a) At delivery, from mothers on vitamin supplement b) From control mothers, at delivery c) From cord, with vitamin supplement d) From cord controls e) From infants-with vitamin supplement f) From infant controls Dose of 400 IU (10 ug). 506 pregnant women, 633 pregnant controls. Scotland. SCOTLAND; UNITED KINGDOM; ADULTS; INFANTS; BLOOD; UMBILICAL CORD; CALCIUM; HYDROXYCHOLECALCIFEROLS; MAGNESIUM; MINERALS; PHOSPHORUS; TRACE ELEMENTS; VITAMIN D; DIETS; MINERAL METABOLISM; PREGNANCY	Cockburn, F. Belton, N.R. Purvis, R.J. Giles, M.M. Brown, J.K. Turner, T.L. Wilkinson, E.M. Forfar, J.O. Barrie, W.J.M. McKay, G.S. Pocock, S.J. 1980 British Medical Journal 281(6232):11-14
5271 Blood, plasma		Competitive binding	8	a) 4.5-36 ug/l b) 21-8.1 ug/l c) 6.5-16.5 ug/l	a) 20 ug/l b) Not given c) Not given	a) Before rifampicin b) 0.5 wk after start and end of 2 wk of 600 mg rifampicin/day c) 0.5 and 2 wk after end of 2 wk rifampicin treatment Estimated from graphs Healthy 29-35 yr olds, no other drugs. DRUGS; UNITED KINGDOM; VITAMIN D; BONE DISEASES; ANTIBIOTICS; ENZYMES; ADULTS; BLOOD PLASMA; METABOLITES; HORMONES; MINERAL METABOLISM; METABOLISM; HYDROXYCHOLECALCIFEROLS	Brodie, M.J. Boobis, A.R. Dollery, C.T. Hillyard, C.J. Brown, D.J. MacIntyre, I. Park, B.K. 1980 Clinical Pharmacology and Therapeutics 27(6):810-814

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA 560/5-81-008 A and B	2. EIS-163/V3/ P1 and P2	3. Recipient's Accession No.

4. Title and Subtitle
Chemicals Identified in Human Biological Media, A Data Base, Third Annual Report, October 1981

5. Report Date

6.

7. Author(s)
M. Virginia Cone, Margaret F. Baldauf, and Fay M. Martin

8. Performing Organization Rept. No.

9. Performing Organization Name and Address
Chemical Effects Information Center
Information Center Complex/Information Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee 37830

10. Project/Task/Work Unit No.

11. Contract(C) or Grant(G) No.
(C) EPA IAG No. 78-D-X383
(G)

12. Sponsoring Organization Name and Address
U.S. Environmental Protection Agency
Office of Toxic Substances
Exposure Evaluation Division (TS-798)
Washington, D.C. 20460

13. Type of Report & Period Covered
Annual Report 9/80-9/81

14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

A comprehensive data base of chemicals identified in human biological media (tissues and body fluids) has been established under the direction of the Environmental Protection Agency's Office of Toxic Substances Exposure Evaluation Division. This centralized resource of body-burden information was inspired by the concern of government scientists over continuing reports of toxic chemicals in human tissues and body fluids.

Body burden is a reflection of exposures to food, air, and water contaminants, as well as pharmaceuticals. The systematic acquisition of body-burden data will facilitate a more relevant assessment of human exposure to toxic chemicals and xenobiotics than was previously possible using environmental contamination levels.

Data were obtained primarily from the open literature through manual searches of selected journals. Retrospective searching to 1974 is complete and has yielded over 3800 pertinent documents of which approximately 1600 have been entered into the data base as of this report. These sources identify over 800 chemicals which have been found in human biological media.

17. Document Analysis a. Descriptors

Body burden
Human tissues/body fluids
Residues

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report)	21. No. of Pages
RELEASE TO PUBLIC	UNCLASSIFIED	944
	20. Security Class (This Page) UNCLASSIFIED	22. Price

(See ANSI-Z39.18) *See Instructions on Reverse*

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce