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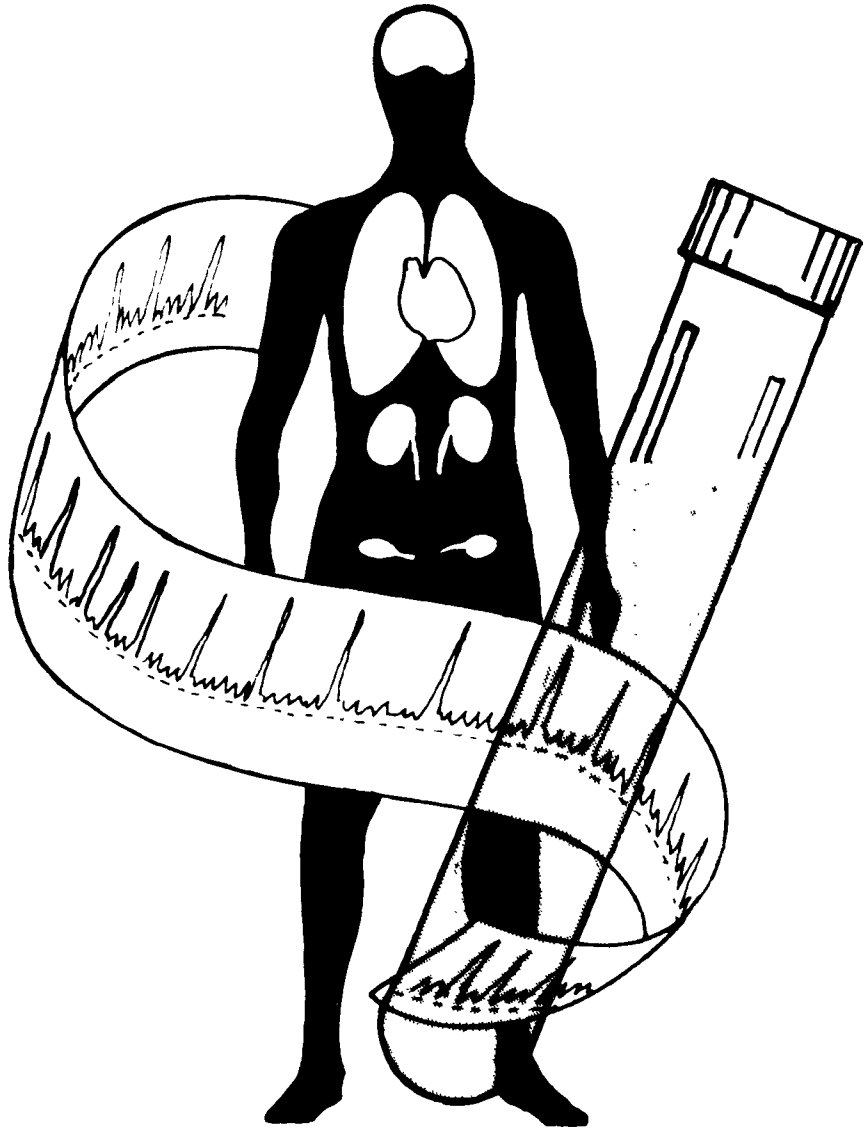
Chemicals Identified In Human Biological Media, A Data Base

Fourth Annual Report
October 1982



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CHEMICALS IDENTIFIED IN HUMAN BIOLOGICAL MEDIA, A DATA BASE

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NONDRUGS

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6012 Breath		GC/MS	28	2-15 ng/l	5.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetic acid ethyl ester
141-78-6
C4-H8-O2
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
6013 Breath		GC/MS	28	0.04-4 ng/l	0.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetic acid, (2,4-dichlorophenoxy)-
94-75-7
C8-H6-Cl2-O3
MW 221.04, MP 138 C, BP 160 C at 0.4 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6014 Urine		GC	18	a) None detected-0.00215 mg/kg b) None detected-0.0557 mg/kg c) 0.0011-0.0377 mg/kg d) None detected-0.00056 mg/kg e) None detected-0.0237 mg/kg f) None detected-0.0219 mg/kg	a) 0.00082 mg/kg b) 0.0128 mg/kg c) 0.0104 mg/kg d) 0.00024 mg/kg e) 0.0081 mg/kg f) 0.0046 mg/kg	a) Crew 1, 6 subjects b) Crew 2, 6 subjects c) Crew 3, 6 subjects d) Crew 1, 6 subjects e) Crew 2, 6 subjects f) Crew 3, 6 subjects a)-c) Customary clothing and normal precautions. Dermal exposure, none detected-0.0911 mg/kg d)-f) 1 wk later using protective clothing and special hygienic practices. Dermal exposure, none detected-0.0216 mg/kg Application 2 lb acid equivalent/acre to 100-acre tract requiring 41-78 min/treatment for loading and spraying Total excreted on spray day plus 5 days thereafter Air levels below limit of detection (0.05 ug) in 32 of 33 tests Values corrected for % recovery of laboratory procedures Helicopter crews (pilot, mechanic, batchman-loader, supervisor, and 2 observers), WA and OR, 1980 OREGON; WASHINGTON; URINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; CROP DUSTING; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Lavy, T.L. Walstad, J.D. Flynn, R.R. Mattice, J.D. 1982 Journal of Agricultural and Food Chemistry 30:375-381

Acetic acid, allyl ester (8 CI)
Acetic acid, 2-propenyl ester (9 CI)
591-87-7
C5-H8-O2
MW 100.13, BP 104 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6015 Breath		GC/MS	28	0.09-0.9 ng/l	0.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6016 Breath		GC/MS	28	0.028-0.48 ng/l	0.13 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetic acid, phenyl- (8 CI)
Benzeneacetic acid (9 CI)
103-82-2
C8-H8-O2
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
6017 Breath		GC/MS	28	0.065-0.64 ng/l	0.20 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetic acid, phenyl-, ethyl ester (8 CI)
Benzeneacetic acid, ethyl ester (9 CI)
101-97-3
C10-H12-O2
MW 164.2, MP 276 C, BP 227 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6018 Breath		GC/MS	28	0.4-1.5 ng/l	0.75 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6019 Breath		GC/MS	28	2.8-9 ng/l	4.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6020 Breath		GC/MS	28	2.3-8.2 ng/l	4.2 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetoacetic acid, butyl ester (8 CI)
Butanoic acid, 3-oxo-, butyl ester (9 CI)
591-60-6
C8-H14-O3
MW 158.20, MP -35.6 C, BP 214 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6021 Breath		GC/MS	28	0.1-0.75 ng/l	0.27 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6022 Breath		GC/MS	28	75-220 ng/l	150 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6023 Breath		GC/MS	28	7-100 ng/l	25 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Acetylene, dichloro- (8 CI)
Ethyne, dichloro- (9 CI)
7572-29-4
C2-Cl2
MW 94.94, MP -66 to -64.2 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6024 Breath		GC/MS	28	0.58-3.3 ng/l	1.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6025 Adrenal gland		ES	7	Not given	37 +or- 23 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6026 Aorta		ES	7	Not given	16 +or- 6.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6027 Blood		Polarography	8	56-125 ug/l	Not given	Hemodialysis patients receiving Al supplements, unknown amount-2600 g 32-69 yr olds FRANCE; BLOOD; BONES; MEASUREMENT METHODS; ALUMINUM; METALS	Burnel, D. Hutin, M.F. Netter, P. Kessler, M. Huriet, C. Gaucher, A. 1982 Pathologie Biologie 30(1):27-32
6028 Blood, plasma	Dialysis fluid	AAS	a) 8 b) 13 c) 14	a) 0.8-1.9 umol/l b) 1.8-3.1 umol/l c) 10-54 umol/l	a) Not given b) Not given c) Not given	a) Patients on continuous ambulatory peritoneal dialysis (CAPD). CAPD fluid containing 0.7 +or- 0.4 umol Al/l b) Patients on hemodialysis. Hemodialysis fluid <1 umol Al/l c) Same as a). CAPD fluid with 23-54 umol Al/l Estimated from graphs Patients with >18 umol Al/l had symptoms of anorexia, nausea, vomiting, cramp-like abdominal pain, weight loss and general malaise BLOOD PLASMA; HEMODIALYSIS; ALUMINUM; METALS	Cumming, A.D. Simpson, G. Bell, D. Cowie, J. Winney, R.J. 1982 Lancet 2(8263):103-104

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6029 Bone		ES	5	Not given	<15 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6030 Bone		Polarography	25	a) 10-31.5 ug/gl b) 10-17.5 ug/g c) 10-18.5 ug/g d) 6-130 ug/g	a) 18.8 +or- 5.8 ug/g b) 13.1 +or- 4.2 ug/g c) 13.8 +or- 4.5 ug/g d) Not given	a) Femoral bone, 13 orthopedic patients b) Cortical region of femoral bone, 4 subjects c) Trabecular region, same as b) d) 8 Hemodialysis patients receiving Al supplements 32-69 yr old hemodialysis patients, and 46-85 yr old orthopedic patients FRANCE; BLOOD; BONES; MEASUREMENT METHODS; ALUMINUM; METALS	Burnel, D. Hutin, M.F. Netter, P. Kessler, M. Huriet, C. Gaucher, A. 1982 Pathologie Biologie 30(1):27-32
6031 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 8.0-45 ppm c) 6.0-40 ppm d) Not applicable e) Not applicable Dry wt	a) 11 +or- 7.5 ppm b) 26 ppm c) 18.5 ppm d) 17 ppm e) 2.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6032 Intestine		ES	10	Not given	26 +or- 16 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6033 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 14-22 ppm c) 11-35 ppm d) Not applicable e) Not applicable Dry wt	a) 11 +or- 7.2 ppm b) 18 ppm c) 25 ppm d) 29 ppm e) 16 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6034 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 7.5-8.0 ppm c) 7.0-52 ppm d) Not applicable e) Not applicable Dry wt	a) 19 +or- 12 ppm b) 7.8 ppm c) 29.7 ppm d) 20 ppm e) 130 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6035 Liver		ASV LSV	30	1.6-2.6 ug/g Wet wt	Not given	Category 2 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (non-pollutant trace element monitored for "normal" levels) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6036 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 270-280 ppm c) 210-440 ppm d) Not applicable e) Not applicable Dry wt	a) 230 +or- 170 ppm b) 275 ppm c) 307 ppm d) 140 ppm e) 2000 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6037 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 300-1000 ppm d) Not applicable e) Not applicable Dry wt	a) 2000 +or- 600 ppm b) 500 ppm c) 627 ppm d) 1300 ppm e) 3200 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6038 Pancreas		ES	5	Not given	15 +or- 6.2 dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6039 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 8.0-100 ppm c) 10-48 ppm d) Not applicable e) Not applicable Dry wt	a) 22 +or- 18 ppm b) 54 ppm c) 23 ppm d) 52 ppm e) 520 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6040 Stomach		ES	10	Not given	26 +or- 16 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6041 Thyroid gland		ES	4	Not given	11 +or- 3.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6042 Tongue		ES	2	Not given	8.0 +or- 8.5 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6043 Trachea		ES	2	Not given	26 +or- 18 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Anthracene
120-12-7
C14-H10
MW 178.22, MP 218 C, BP 342 C, VP 1 mm Hg at 145.0 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6044 Adipose		HPLC	10	Not detected-575 ppt wet wt	270 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Ohana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6045 Liver		HPLC	6	110-240 ppt wet wt	173 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Ohana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6046 Bone		NA	a) 7 b) 5	a) <0.02-0.58 ppm b) 0.007-0.1 ppm	a) 0.015 ppm b) 0.007 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6047 Hair		NA	56	0.05X10(E-6)-80.69X10(E-6) g/cu cm	0.57X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6048 Hair		NA	54	160-400 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6049 Hair		NA		a) 0.03-1.63 ppm b) 0.05-0.42 ppm c) 0.02-1.16 ppm	a) 0.18 +or- 0.21 ppm b) 0.2 +or- 0.12 ppm c) 0.3 +or- 0.3 ppm	a) 12 cm length, 102 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6050 Liver		NA	30	0.01 ug/g Wet wt	Not given	Category 2 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (non-pollutant trace element monitored for "normal" levels) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6051 Nail		NA	64	260-750 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

Arochlor 1248
12672-29-6
Exact composition unknown or undetermined

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6052 Adipose		GC	26	a) 5-234 ppm b) 2-271 ppm	a) 36 ppm b) 24 ppm Median	a) Packed column gas chromatography, sum of peak areas b) High resolution gas chromatography, sum of individual peaks Total of peaks with retention time less than p,p'-DDE ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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Aroclor 1248
12672-29-6
Exact composition unknown or undetermined

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6053 Blood, plasma		GC	26	a) 18-1362 ppb b) 2-1412 ppb	a) 145 ppb b) 83 ppb Median	a) Packed column gas chromatography, sum of peak areas b) High resolution gas chromatography, sum of individual peaks Total of peaks with retention time less than p,p'-DDE ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Aroclor 1254
11097-69-1
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6054 Adipose		GC	26	a) 2-54 ppm b) 0.2-19 ppm	a) 14 ppm b) 6 ppm Median	a) Packed column gas chromatography, sum of peak areas b) High resolution gas chromatography, sum of individual peaks Sum of peaks with retention time greater than p,p'-DDE Capacitor manufacture workers. 1976 clinical health survey ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6055 Blood, plasma		GC	26	a) 1-180 ppb b) 1-60 ppb	a) 33 ppb b) 19 ppb Median	a) Packed column gas chromatography, sum of peak areas b) High resolution gas chromatography, sum of individual peaks Sum of peaks with retention time greater than p,p'-DDE Capacitor manufacture workers. 1976 clinical health survey ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Arsenenous acid, sodium salt
7784-46-5
As-H-O2.Na
MW 129.91

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6056 Urine	Ingestion	AAS	a) 3 b) 5	a) Not given b) Not given	a) 253.9 ug b) 272.5 ug	a) 4 day output after 500 ug dose (25% inorganic arsenic, 21.3% monomethylarsonate and 53.7% dimethylarsinate) b) 4 day output after 500 ug dose (after treatment with lipotropic agents)(22.6% inorganic arsenic, 14.5% monomethylarsonate, and 62.9% dimethylarsinate Healthy 27-42 yr olds ADULTS; URINE; COMPARATIVE EVALUATIONS; ARSENIC; ARSENIC ORGANIC COMPOUNDS; METABOLITES	Buchet, J.P. Lauwerys, R. Roels, H. 1981 International Archives of Occupational and Environmental Healta 48:71-79

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
6057 Blood	Ingestion		a) 1 b) 1 c) 1	a) 447-7 ug/l b) 785-7 ug/l c) 190-7 ug/l	a) Not given b) Not given c) Not given	a) 44 yr old man, 1 and 25 days after >1000 mg b) 40 yr old woman, 1 and 17 days after >1000 mg c) 11 yr old girl, 1 and 7 days after >500 mg Ate pudding mistakenly made with As2O3 BAL, 2.5-4 mg/kg IM given every 8 hr for 21 days (a), 17 days (b), and 9 days (c) Members of same family Diarrhea, dehydration, renal insufficiency, shock, delayed neuropathy ADULTS; CASE HISTORIES; CHILDREN; BLOOD; CEREBROSPINAL FLUID; URINE; ARSENIC; FOOD CONTAMINATION; METABOLISM; METABOLITES	Mahieu, P. Buchet, J.P. Roels, H.A. Lauwerys, R. 1981 Clinical Toxicology 18(9):1067-1075
6058 Bone		NA	a) 7 b) 5	a) 0.006-0.21 ppm b) <0.005-0.007 ppm	a) 0.014 ppm b) Not given Median	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted area. ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116

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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
6059 Cerebrospinal fluid	Ingestion		1	Not applicable	180 ug/l	4 days after eating pudding mistakenly made with As2O3. Intake >1000 mg BAL, 2.5-4 mg/kg IM given every 8 hr 44 yr old Diarrhea, dehydration, renal insufficiency, shock, delayed neuropathy ADULTS; CASE HISTORIES; CHILDREN; BLOOD; CEREBROSPINAL FLUID; URINE; ARSENIC; FOOD CONTAMINATION; METABOLISM; METABOLITES	Mahieu, P. Buchet, J.P. Roels, H.A. Lauwerys, R. 1981 Clinical Toxicology 18(9):1067-1075
6060 Hair		NA	57	37.4-48.3 ng/g	44.5 ng/g	Range of means, 5 localities Residents of Iceland ADULTS; HAIR; ARSENIC; CADMIUM; MERCURY; METALS; SELENIUM; ZINC	Johannesson, T. Lunde, G. Steinnes, E. 1981 Acta Pharmacologica et Toxicologica 48:185-189
6061 Hair	Ingestion			a) 0.03-0.15 ug/g b) 0.01-0.40 ug/g	a) Not applicable b) Not given	a) Current levels for head, pubic and axillary hair. Exposed to contaminated food in 1943, developed hyperkeratosis in 1951 (1 subject) b) Normals CASE HISTORIES; NEOPLASMS; SKIN DISEASES; HAIR; SKIN; ARSENIC; METALS	Renwick, J.H. Harrington, J.M. Waldron, H.A. Dissanaike, D.S. Lenihan, J.M.A. 1981 Journal of the Society of Occupational Medicine 31:144-147
6062 Hair	Ingestion	NA	3	a) 9.22-30.4 ppm b) 11.1-18.1 ppm c) 2.2-160 ppm d) 0.3-94 ppm	a) Not given b) Not given c) Not given d) Not given	a) 5 head hairs of Napoleon Bonaparte, 1.3-2.1 cm long, cut October 16, 1816 b) Segmental (3 mm) analysis of one hair from a). Indicates consistently high exposure over period of growth (2 mo) c) Segmental (3 mm) analysis of 60 mm hair from habitual user of As-containing tonic d) Segmental (3 mm) analysis of 39 mm hair from attempted suicide Reports of deteriorating health of Bonaparte consistent with chronic ingestion ADULTS; SUICIDE; METAL POISONING; HAIR; COMPARATIVE EVALUATIONS; FORENSIC MEDICINE; ARSENIC; METALS	Leslie, A.C.D. Smith, H. 1978 Archives of Toxicology 41:163-167
6063 Hair		NA	6	0.03X10(E-6)-12.97X10(E-6) g/cu cm	0.38X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289

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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
6064 Hair		NA		a) 0.01-0.89 ppm b) 0.01-0.55 ppm c) 0.01-0.97 ppm d) 0.01-0.63 ppm	a) 0.10 +or- 0.15 ppm b) 0.13 +or- 0.18 ppm c) 0.26 +or- 0.34 ppm d) 0.11 +or- 0.17 ppm	a) 12 cm length, 89 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 27 samples High levels in people near chemical industry. Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6065 Liver		NA	30	0.006-0.46 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6066 Skin	Ingestion			a) Not applicable b) Not applicable c) Not applicable d) 0.002-0.054 ug/g	a) 0.19 ug/g b) 0.01 ug/g c) 0.002 ug/g d) Not given	a) 1965 b) 1975 c) 1978 d) Normals Levels by year in skin lesions of individual exposed in 1943 to contaminated food CASE HISTORIES; NEOPLASMS; SKIN DISEASES; HAIR; SKIN; ARSENIC; METALS	Renwick, J.H. Harrington, J.M. Waldron, H.A. Dissanaike, D.S. Lenihan, J.M.A. 1981 Journal of the Society of Occupational Medicine 31:144-147

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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
6067 Urine	Ingestion		a) 1 b) 1 c) 1	a) Not applicable b) Not applicable c) Not applicable	a) 129 mg b) 73 mg c) 24 mg	a) 44 yr old man, 26 day total after >1000 mg, 10 mg/24 hr day 3-7 b) 40 yr old woman, 3 week total after >1000 mg, 16.7 mg/24 hr day 1 c) 11 yr old girl, 8 day total after >500 mg, 9 mg/24 hr on day 1 Ate pudding mistakenly made with As2O3 BAL, 2.5-4 mg/kg IM given every 8 hr for 21 days (a), 17 days (b), and 9 days (c) Primarily inorganic As excreted day 2-4, followed by progressive increase in organic metabolites to >95% after day 9 Members of same family Diarrhea, dehydration, renal insufficiency, shock, delayed neuropathy ADULTS; CASE HISTORIES; CHILDREN; BLOOD; CEREBROSPINAL FLUID; URINE; ARSENIC; FOOD CONTAMINATION; METABOLISM; METABOLITES	Mahieu, P. Buchet, J.P. Roels, H.A. Lauwerys, R. 1981 Clinical Toxicology 18(9):1067-1075
6068 Urine		AAS		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) 198 ug/l b) 197 ug/l c) 191 ug/l d) 177 ug/l e) 174 ug/l f) 153 ug/l g) 124 ug/l h) 108 ug/l i) 101 ug/l	a) 1970 b) 1971 c) 1972 d) 1973 e) 1974 f) 1975 g) 1976 h) 1977 i) 1978 Employee-weighted annual mean Exposure control program begun 1975-77 Time-weighted averages for full shift, breathing zone air, nondetectable-5310 ug/cu m (mean 154 ug/cu m) Employees, Cu smelter and As-trioxide production facility URINE; ARSENIC; AIR POLLUTION; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; SMELTERS	Cant, S.M. Legendre, L.A. 1982 American Industrial Hygiene Association Journal 43:223-226

Arsenic oxide [As2O3]
1327-53-3
As2-O3
MW 197.82, MP 313 C (claudetite), 275 C (arsenolite)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6069 Blood, whole	Ingestion		1	7-2 ug/dl	Not applicable	5 and 18.5 hr after accidential ingestion of 9-14 mg. Chelation therapy initiated 5 hr after exposure. 16 mo old Initial symptoms: vomiting, diarrhea, sinus tachycardia CASE HISTORIES; CHILDREN; METAL POISONING; BLOOD; URINE; DRUG THERAPY; ARSENIC; INSECTICIDES; HEALTH HAZARDS	Watson, W.D. Veltri, J.C. Metcalf, T.J. 1981 Veterinary and Human Toxicology 23(3):164-166
6070 Urine	Ingestion		1	560-40 ug/l	Not applicable	About 18 hr and 6 days after accidential ingestion of 9-14 mg. Chelation therapy initiated 5 hr after exposure. 16 mo old Initial symptoms: vomiting, diarrhea, sinus tachycardia CASE HISTORIES; CHILDREN; METAL POISONING; BLOOD; URINE; DRUG THERAPY; ARSENIC; INSECTICIDES; HEALTH HAZARDS	Watson, W.D. Veltri, J.C. Metcalf, T.J. 1981 Veterinary and Human Toxicology 23(3):164-166

Arsine oxide, hydroxydimethyl-, sodium salt (8 CI)
Arsinic acid, dimethyl-, sodium salt (9 CI)
124-65-2
C2-H7-As-O2.Na
MW 214.02, MP 82-86 C, also reported as 60 C and 200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6071 Urine	Ingestion	AAS	4	Not given	375.7 ug	0-96 hr total output, after 500 ug dose. 0% inorganic arsenic, 0% monomethylarsonate, and 100% dimethylarsinate Healthy 27-42 yr olds ADULTS; URINE; COMPARATIVE EVALUATIONS; ARSENIC; ARSENIC ORGANIC COMPOUNDS; METABOLITES	Buchet, J.P. Lauwerys, R. Roels, H. 1981 International Archives of Occupational and Environmental Health 48:71-79

Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6072 Lung	Inhalation	Microscopy	135	a) 1-5 asbestos bodies/1.5 cu cm b) 6-10 asbestos bodies/1.5 cu cm c) 11-20 asbestos bodies/cu cm d) > 20 asbestos bodies/1.5 cu cm	a) Not given b) Not given c) Not given d) Not given	a) 62 men and 45 women b) 11 men and 5 women c) 8 men and 2 women d) 10 men and 2 women Number of positive samples for 216 men and 178 women. Occurrence of positive cases related to occupation, industry, and area of residence. Positive association with carcinoma of stomach and breast, but not bronchus Nonoccupationally exposed residents of East London UNITED KINGDOM; ADULTS; AGE; AUTOPSIES; SEX; CARCINOMAS; LUNGS; ASBESTOS; FIBERS; HEALTH HAZARDS; INDUSTRIAL AREAS; POPULATION EXPOSURE; SMOKING; URBAN AREAS	Doniach, I. Swettenham, K.V. Hathorn, M.K.S. 1975 British Journal of Industrial Medicine 32:16-30
6073 Lung		EM	a) 6 b) 6 c) 6	a) 6.8X10(E+4)-4.3X10(E+6) fibers/cu cm b) 320-7800 fibers/cu cm c) 54-140 fibers/cu cm	a) 2X10(E+6) fibers/cu cm b) 2000 fibers/cu cm c) 100 fibers/cu cm	a) Asbestos workers with heavy exposure (0.5-34 yr). 25-250 coated fibers per pleural plaque (5 of 6) b) Asbestos workers with light exposure (10-37 yr). 0-20 coated fibers per pleural plaque (5 of 6) c) Controls, no known exposure, 0-8 coated fibers per pleural plaque (1 of 6) Autopsies 39-73 yr old residents of Le Havre, France ADULTS; AUTOPSIES; OCCUPATIONAL DISEASES; LUNGS; ASBESTOS; FIBERS; OCCUPATIONAL HAZARDS	Sebastien, P. Fondimare, A. Bignon, J. Monchaux, G. Desbordes, J. Bonnaud, G. 1977 Inhaled Particles IV, W.H. Walton, (ed.) Pergamon Press, 435-445
6074 Lung	Inhalation		a) 2 b) 2 c) 2 d) 2 e) 1 f) 5 g) 9	a) 0.1-4 ferruginous bodies/ml b) 11-17.5 ferruginous bodies/ml c) 0.3-11 ferruginous bodies/ml d) 10-6045 ferruginous bodies/ml e) 20,000 ferruginous bodies/ml f) 0.2-30,493 ferruginous bodies/ml g) 0 ferruginous bodies/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) Occasional asbestos workers b) Automobile workers c) Asbestos cement plant workers d) Asbestos textile plant workers e) Asbestos worker f) Insulation workers g) Controls Specimens obtained by bronchoalveolar lavage a)-f) had suspected or confirmed asbestosis. 0-28 yr since last of 4-30 yr exposure. 33-60 yr olds, occupationally exposed to asbestos. Controls, 29-65 yr old volunteers (4) or patients with no bronchopulmonary disease (5) Number of alveolar macrophages decreased and proportion of polymorphonuclear neutrophiles increased with high lung asbestos content. Macrophages in exposed subjects had greater lactic dehydrogenase and N-acetyl-beta-D-glucosaminidase activities than did controls. ADULTS; OCCUPATIONAL DISEASES; LUNGS; INDUSTRIAL MEDICINE; LAVAGE; ASBESTOS; AUTOMOTIVE; FIBERS; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Jaurand, M.C. Gaudichet, A. Atassi, K. Sebastien, P. Bignon, J. 1980 Bulletin Europeen de Physiopathologie Respiratoire 16:595-606

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Asbestos
1332-21-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6075 Respiratory secretion			176 workers 76 controls	a) 30+ ferruginous bodies b) 15-30 ferruginous bodies c) 1-4 ferruginous bodies d) 0 ferruginous bodies	a) Not given b) Not given c) Not given d) Not given	a) 35% of workers with 5-<16 yr exposure, 23% of workers with 1-<5 yr exposure, 3% of workers with <1 yr exposure, and 0% of controls b) 17% of workers with 5-<16 yr exposure, 19% of workers with 1-<5 yr exposure, 4% of workers with <1 yr exposure, and 0% of controls c) 24% of workers with 5-<16 yr exposure, 46% of workers with 1-<5 yr exposure, 29% of workers with <1 yr exposure, 0% of controls d) 24% of workers with 5-<16 yr exposure, 12% of workers with 1-<5 yr exposure, 64% of workers with <1 yr exposure, and 100% of controls Former asbestos workers (all men). Healthy volunteers with no known asbestos exposure, Tyler, TX. Immunoglobulin A, cellular atypia, x-ray abnormalities, rales, and pulmonary restriction were significantly different between workers and controls. TEXAS; ADULTS; INDUSTRIAL DISEASES; INDUSTRIAL MEDICINE; ASBESTOS; INHALATION; OCCUPATIONAL HAZARDS; RESPIRATORY SECRETIONS	Nash, D.R. Portson, N.G. McLarty, J.W. Hurst, G.A. 1981 Journal of Toxicology and Environmental Health 7:733-744

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
6076 Adrenal gland		ES	7	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6077 Aorta		ES	7	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6078 Bone		ES	5	Not given	<15 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6079 Bone		MS	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 12 ppm b) 11 ppm c) 1.9 ppm d) 2.2 ppm e) 18 ppm f) 0.85 ppm Dry wt	a) Mandible, Hauca Negra site, recently exposed, pre-ceramic, pre-metallurgical, date 4500-3000 yr before present (bp) b) Femur, Guanape cemetery, specimens exposed on surface 30 yr, post-ceramic, proto-metallurgical, date 3000-2500 yr bp c) Mandible, Hauca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Mandible, another person, site c) e) Mandible, another person, site c) f) Vertebra, mummy of wealthy female Egyptian, Ptolemic period, 2200 yr bp Ratio of Ba to Ca 2-3X10(E-6) in bones of ancient Peruvians and present-day Americans Specimens from Viru Valley, Peru and Egypt EGYPT; PERU; UNITED KINGDOM; UNITED STATES; BONES; TEETH; BARIUM; CALCIUM; LEAD; BIOACCUMULATION	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6080 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <1.3-<1.3 ppm c) <1.3-<1.3 ppm d) Not applicable e) Not applicable Dry wt	a) <1.3 ppm b) <1.3 ppm c) <1.3 ppm d) <1.3 ppm e) <1.3 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6081 Intestine		ES	10	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6082 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <1.3-<1.3 ppm c) <1.3-<1.3 ppm d) Not applicable e) Not applicable Dry wt	a) <1.3 ppm b) <1.3 ppm c) <1.3 ppm d) <1.3 ppm e) <1.3 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6083 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <1.3-<1.3 ppm c) <1.3-1.3 ppm d) Not applicable e) Not applicable Dry wt	a) <1.3 ppm b) <1.3 ppm c) Not given d) <1.3 ppm e) 1.6 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6084 Liver			30	0.01 ug/g Wet wt	Not given	Category 3 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (trace element of environmental importance not included in first priority list) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6085 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) <1.3-1.5 ppm c) 1.7-2.6 ppm d) Not applicable e) Not applicable Dry wt	a) 1.6 +or- 0.37 ppm b) Not given c) 2.1 ppm d) 3.3 ppm e) 11 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6086 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 2.0-5.8 ppm d) Not applicable e) Not applicable Dry wt	a) 18 +or- 6.7 ppm b) 2.5 ppm c) 4.2 ppm d) 7.6 ppm e) 27 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6087 Pancreas		ES	5	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6088 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <1.3-<1.3 ppm c) <1.3-<1.3 ppm d) Not applicable e) Not applicable Dry wt	a) <1.3 ppm b) <1.3 ppm c) <1.3 ppm d) 1.8 ppm e) 3.3 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6089 Stomach		ES	10	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6090 Teeth		MS	a) 1 b) 1 c) 1 d) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 1.7 ppm b) 2.9 ppm c) 1.5 ppm d) 3.1 ppm Dry wt	a) Hauca Negra site, recently exposed, pre-ceramic, pre-metallurgical, date 4500-3000 yr before present (bp) b) Guanape cemetery, specimens exposed on surface 30 yr, post-ceramic, proto-metallurgical, date 3000-2500 yr bp c) Huaca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Another person, site c) Enamel Specimens from Viru Valley, Peru EGYPT; PERU; UNITED KINGDOM; UNITED STATES; BONES; TEETH; BARIUM; CALCIUM; LEAD; BIOACCUMULATION	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951
6091 Thyroid gland		ES	4	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6092 Tongue		ES	2	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6093 Trachea		ES	2	Not given	<1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Benz(e)acephenanthrylene
205-99-2
C20-H12
MW 252.32, MP 168 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6094 Adipose		HPLC	10	56-260 ppt wet wt	156 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6095 Liver		HPLC	6	33-88 ppt wet wt	68 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

Benzene
71-43-2
C6-H6
MW 78.11, MP 5.5 C BP 80.093-80.094 C, VP 10 cm Hg at 26.1 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6096 Blood		GC	6	a) Not applicable b) 1.14-1.86 ug/l c) Not applicable d) < 0.35-0.42 +or- 0.07 ug/l e) Not applicable f) Not applicable g) Not applicable h) Not applicable	a) 0.1 ug/l b) Not given c) 186.6 +or- 1.4 ug/l d) Not given e) 0.28 +or- 0.06 ug/l f) < 0.34 ug/l g) 1.30 +or- 0.34 ug/l h) 1.93 +or- 0.12 ug/l S.E.	a) Laboratory worker, non-smoker, workday measurement, air level 8.2 ug/cu m b) 2 filling station attendants, smokers, workday measurement, air level 190-260 ug/cu m c) Filling station attendant, smoker, had direct contact with gasoline. Workday measurement, air level 153 ug/cu m d) Non-workday measurement b) plus c), air levels 1.4-13 ug/cu m e) Filling station attendant, non-smoker, workday measurement f) Non-workday measurement of e), air level 13 ug/cu m g) Gasoline tanker driver, non-smoker, workday measurement, air level 54 ug/cu m h) Non-workday measurement of g), air level 85 ug/cu m BREATH; INDUSTRIAL CHEMICALS; MISSOURI; TEXAS; AGE; SEX; BLOOD; URINE; BENZENES; DIETS; DRINKING WATER; GASOLINE; INDUSTRIAL EMISSIONS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMOKING	Zweidinger, R.A. Cooper, S.D. Harris, B.S.H., III Hartwell, T.D. Folsom, R.E., Jr. Pellizzari, E.D. Sherdon, A.W. Wong, T.K. Zelon, H.S. 1980 EPA 560/13-80-028, 194 pp.
6097 Breath		GC/MS	28	2.4-7.5 ng/l	4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244
6098 Breath		Spirometer	117	a) 1-26 ug/cu m b) 0-14 ug/cu m c) 1.1-18 ug/cu m d) 2.2-26 ug/cu m e) 0-14 ug/cu m f) 0-9 ug/cu m	a) 8.5 +or- 1.5 ug/cu m b) 2.9 +or- 0.48 ug/cu m c) 6.33 ug/cu m d) 8.76 ug/cu m e) 3.18 ug/cu m f) 3.11 ug/cu m S.E.	a) 68 St. Louis, MO residents, air levels 3-125 ug/cu m, mean 26.8 ug/cu m b) 49 Houston, TX residents, air levels 2-45 ug/cu m, mean 16.1 ug/cu m c) 29 St Louis, MO residents, air levels < 20 ug/cu m d) 13 St. Louis, MO residents, air levels > 20 ug/cu m e) 30 Houston, TX residents, air levels < 20 ug/cu m f) 11 Houston, TX residents, air levels > 20 ug/cu m Air sampled in individual homes Breath samples 60 l or 15 min breathing time Data also by sex, race, habits, health, diet, drinking water source, food source, age, wt, ht, yr at present address Healthy, 20-50 yr old nonsmokers, nonoccupationally exposed MISSOURI; TEXAS; AGE; SEX; BLOOD; URINE; BENZENES; DIETS; DRINKING WATER; GASOLINE; INDUSTRIAL EMISSIONS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMOKING; BREATH; INDUSTRIAL CHEMICALS	Zweidinger, R.A. Cooper, S.D. Harris, B.S.H., III Hartwell, T.D. Folsom, R.E., Jr. Pellizzari, E.D. Sherdon, A.W. Wong, T.K. Zelon, H.S. 1980 EPA 560/13-80-028, 194 pp.

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6099 Breath		Spirometer	9	a) 1.1-3.7 ug/cu m b) Not applicable c) Not applicable d) Not applicable e) 17-27 ug/cu m f) Not applicable g) 6.8-15.0 ug/cu m h) Not applicable i) Not applicable	a) Not given b) 9.3 ug/cu m c) 7.2 ug/cu m d) 1.3 ug/cu m e) Not given f) 432 ug/cu m g) Not given h) 19 ug/cu m i) 58 ug/cu m j) 28 ug/cu m	a) 2 laboratory workers, non-smokers, workday measurement, air level 8.2 ug/cu m b) 1 laboratory worker, smoker, workday measurement, air level 8.2 ug/cu m c) Filling station attendant, non-smoker, workday measurement d) Non-workday measurement of c), air level 13 ug/cu m e) 2 filling station attendants, smokers, workday measurement, air level 190-260 ug/cu m f) Filling station attendant, smoker, direct contact with gasoline. Workday measurement, air level 153 ug/cu m g) Non-workday measurements e) plus f), air levels 1.4-13 ug/cu m h) Shop worker, smoker, workday measurement, air level 8.2 ug/cu m i) Gasoline tanker driver, non-smoker, workday measurement, air level 54 ug/cu m j) Non-workday measurement of i), air level 85 ug/cu m BREATH; INDUSTRIAL CHEMICALS; MISSOURI; TEXAS; AGE; SEX; BLOOD; URINE; BENZENES; DIETS; DRINKING WATER; GASOLINE; INDUSTRIAL EMISSIONS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMOKING	Zweidinger, R.A. Cooper, S.D. Harris, B.S.H., III Hartwell, T.D. Folsom, R.E., Jr. Pellizzari, E.D. Sherdon, A.W. Wong, T.K. Zelon, H.S. 1980 EPA 560/13-80-028, 194 pp.
6100 Urine			3	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) 0.72 +or- 0.14 ug/l b) 0.93 +or- 0.14 ug/l c) 0.41 +or- 0 ug/l d) 2.4 +or- 0.4 ug/l e) 1.6 +or- 0 ug/l S.E.	a) Laboratory worker, non-smoker, workday measurement, air level 8.2 ug/cu m b) Filling station attendant, smoker, workday measurement, air level 190 ug/cu m c) Non-workday measurement of b), air level 1.4 ug/cu m d) Gasoline tanker driver, non-smoker, workday measurement, air level 54 ug/cu m e) Non-workday measurement of d), air level 85 ug/cu m BREATH; INDUSTRIAL CHEMICALS; MISSOURI; TEXAS; AGE; SEX; BLOOD; URINE; BENZENES; DIETS; DRINKING WATER; GASOLINE; INDUSTRIAL EMISSIONS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMOKING	Zweidinger, R.A. Cooper, S.D. Harris, B.S.H., III Hartwell, T.D. Folsom, R.E., Jr. Pellizzari, E.D. Sherdon, A.W. Wong, T.K. Zelon, H.S. 1980 EPA 560/13-80-028, 194 pp.

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
6101 Milk		GC/MS	42	a) 0.1-0.2 ng/ml b) 0.1-0.3 ng/ml c) Trace-0.4 ng/ml d) 0.1-0.3 ng/ml e) 0.1-10 ng/ml f) Trace-10 ng/ml	a) 0.12 +or- 0.1 ng/ml b) 0.16 +or- 0.089 ng/ml c) 0.12 +or- 0.11 ng/ml d) 0.16 +or- 0.096 ng/ml e) 1.20 +or- 3.30 ng/ml f) 0.37 +or- 1.53 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies near chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

Benzene, dichloro-
25321-22-6
C6-H4-Cl2
MW 147.01, BP 173-180 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6102 Milk		GC/MS	42	a) 0.2-66 ng/ml b) 0.9-68 ng/ml c) 0.2-8.9 ng/ml d) 0.2-44 ng/ml e) 0.04-26 ng/ml f) 0.04-68 ng/ml	a) 19.37 +or- 25.54 ng/ml b) 24.48 +or- 31.69 ng/ml c) 1.71 +or- 2.41 ng/ml d) 8 +or- 13.98 ng/ml e) 4.30 +or- 8.25 ng/ml f) 9.15 +or- 17.3 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies vicinity of chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

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
6103 Breath		GC/MS	28	0.6-6 ng/l	2.1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6104 Adipose		GC-EC	a) 12 b) 28 c) 40	a) 0.273-1.614 ppm b) 0.516-1.723 ppm c) 0.273-1.723 ppm	a) 0.837 +or- 0.360 ppm b) 1.080 +or- 0.321 ppm c) 1.007 +or- 0.347 ppm	a) Rural residents b) Urban residents c) Combined, rural and urban residents Spain SPAIN; ADIPOSE TISSUE; COMPARATIVE EVALUATION; CHLORINE COMPOUNDS; FUNGICIDES; HEXACHLOROBENZENE; HEALTH HAZARDS; RURAL AREAS; URBAN AREAS	Pozolora, R. Herrera Marteache, A. Polo Villar, L.M. Jordral Villarejo, M. Mallol Escobar, J. Polo Villar, G. 1978 Revista de Sanidad e Higiene Publica 52(Sept/Oct)
6105 Milk		GC-EC	a) 21 b) 24 c) 45	a) 0.161-10.388 ppm b) 1.146-9.445 ppm c) 0.161-10.388 ppm	a) 3.735 +or- 0.694 ppm b) 3.322 +or- 0.528 ppm c) 3.515 +or- 0.425 ppm	a) Rural residents b) Urban residents c) Combined, rural and urban residents Spain SPAIN; MILK; COMPARATIVE EVALUATIONS; FUNGICIDES; HEXACHLOROBENZENE; HEALTH HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Polo Villar, L.M. Herrera Marteache, A. Pozolora, R. Lopez Gimmenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(207-208):271-274

Benzene, o-dichloro- (8 CI)
Benzene, 1,2-dichloro- (9 CI)
95-50-1
C6-H4-Cl2
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
6106 Breath		GC/MS	28	0.08-1.2 ng/l	0.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6107 Breath		GC/MS	28	0.2-2 ng/l	0.65 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Benzene, p-dichloro- (8 CI)
Benzene, 1,4-dichloro- (9 CI)
106-46-7
C6-H4-Cl2
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
6108 Breath		GC/MS	28	0.6-5.7 ng/l	1.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Benzidine (8 CI)
(1,1'-Biphenyl)-4,4'-diamine (9 CI)
92-87-5
C12-H12-N2
MW 184.23, MP 127.5-128.7 C at 740 mm Hg, BP 401.7 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6109 Urine		GC/MS	5	1.0-25.4 nmol/mmol creatinine	Not given	After acid hydrolysis. No free benzidine or monoacetylbenzidine found in 200 samples during 15 mo period Textile dye workers, England. INDUSTRIAL CHEMICALS; UNITED KINGDOM; ADULTS; URINE; BENZIDINE; OCCUPATIONAL HAZARDS	Neal, P.F. Cocker, J. Wilson, H.K. Gilmour, J.M. 1981 British Journal of Industrial Medicine 38:191-193

Benzilic acid, 4,4'-dichloro-, ethyl ester (8 CI)
Benzeneacetic acid, 4-chloro-alpha-(4-chlorophenyl)-alpha-hydroxy-, ethyl ester (9 CI)
510-15-6
C16-H14-Cl2-O3
MW 325, BP 148 C at 0.04 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6110 Urine		GC	5	0.07-6.2 ppm	1.3 ppm	Measured as p,p'-dichlorobenzophenone from oxidation of parent compound and metabolites. Part of data analyzed in terms of mg creatinine. Exact exposure level unknown. Citrus grove workers, Florida FLORIDA; ADULTS; URINE; PESTICIDES; FARMS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; RURAL AREAS	Levy, K.A. Brady, S.S. Pfaffenberger, C.D. 1981 Bulletin of Environmental Contamination and Toxicology 27:235-238

Benzo(a)pyrene
50-32-8
C20-H12
MW 252.3, MP 179 C, BP 372 C at 10 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6111 Adipose		HPLC	10	12-59 ppt wet wt	22 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6112 Liver		HPLC	6	10-32 ppt wet wt	18 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

Benzo(e)pyrene
192-97-2
C20-H12
MW 252.30, MP 178-179 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6113 Adipose		HPLC	10	30-150 ppt wet wt	80 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

Benzo(ghi)perylene
191-24-2
C22-H12
MW 276.34, MP 277-279 C, BP >500 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6114 Adipose		HPLC	10	13-110 ppt wet wt	48 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHANGES; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6115 Liver		HPLC	6	17-59 ppt wet wt	38 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

Benzo(k)fluoranthene
207-08-09
C20-H12
MW 252.32, MP 217 C, BP 480 C at 760 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6116 Adipose		HPLC	10	Not detected-48 ppt wet wt	26 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6117 Liver		HPLC	6	6-23 ppt wet wt	13 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

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)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6118 Blood, plasma			a) 84 b) 67 c) 41 d) 40	a) 130-700 pg/ml b) 40-650 pg/ml c) 130-600 pg/ml d) 170-650 pg/ml	a) 304 +or- 20 pg/ml b) 339 +or- 23 pg/ml c) 279 +or- 20 pg/ml d) 385 +or- 31 pg/ml	a) Normotensive b) Hypertensive c) Normotensive, 16-30 yr old d) Hypertensive, > 40 yr old Mean increments on standing for 10 min, a-d, 239, 256, 380 and 279 pg/ml No significant differences in age-corrected data. Range estimated from graph ADULTS; AGE; HYPERTENSION; BLOOD PLASMA; AUTONOMIC DRUGS; COMPARATIVE EVALUATIONS	Lake, C.R. Ziegler, M.G. Coleman, M.D. Kopin, I.J. 1977 New England Journal of Medicine 296(4):208-209

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
6119 Breath		GC/MS	28	0.18-0.44 ng/l	0.28 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

BHC, total (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
6120 Blood		GC	100	a) 8.5-850.0 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 49.9 +or- 25.6 ppb b) 43.0 +or- 46.2 ppb c) 63.7 +or- 60.5 ppb d) 52.4 +or- 28.2 ppb e) 61.3 +or- 117.5 ppb f) 55.0 +or- 91.0 ppb g) 60.5 +or- 32.6 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Maternal blood, collected 8-12 hr before parturition Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6121 Blood, fetal		GC	100	a) 2.0-507.8 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 43.1 +or- 26.4 ppb b) 32.9 +or- 125.2 ppb c) 45.7 +or- 30.6 ppb d) 38.3 +or- 43.7 ppb e) 35.6 +or- 20.2 ppb f) 27.0 +or- 13.6 ppb g) 47.3 +or- 92.0 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6122 Blood, serum		GC	a) 32 b) 27 c) 81 d) 68 e) 40	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) 0.077 +or- 0.0623 ppm b) 0.100 +or- 0.0688 ppm c) 0.294 +or- 0.2134 ppm d) 0.323 +or- 0.1526 ppm e) 0.171 +or- 0.0812 ppm f) 0.365 +or- 0.1122 ppm g) 0.449 +or- 0.1257 ppm h) 0.380 +or- 0.1411 ppm i) 0.497 +or- 0.1623 ppm j) 0.302 +or- 0.1121 ppm	a) No previous exposure b) 1 season of prior exposure c) 2 seasons of prior exposure d) 3 seasons of prior expsure e) >3 seasons of prior exposure f) Group a), post-exposure g) Group b), post-exposure h) Group c), post-exposure i) Group d), post-exposure j) Group e), post-exposure a)-e) Pre-exposure f)-j) After 16 wk spraying technical grade HCH (3.1% alpha, .7% beta, and 1% gamma), applied with pump (20 mg/sq ft) 19-49 yr old malaria spraymen with 0-4 seasons prior occupational exposure ADULTS; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Gupta, S.K. Parikh, J.R. Shah, M.P. Chatterjee, S.K. Kashyap, S.K. 1982 Archives of Environmental Health 37(1):41-44

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BHC, total (No postings in CHEMLINE).
58-89-9
C6-H6-C16
MW 290.85

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6123 Placenta		GC	100	a) 4.2-390.7 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 45.4 +or- 21.0 ppb b) 41.8 +or- 7.0 ppb c) 50.9 +or- 29.3 ppb d) 38.5 +or- 65.4 ppb e) 52.7 +or- 34.9 ppb f) 48.0 +or- 27.8 ppb g) 57.7 +or- 61.9 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery b) and c), d) and e) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDE; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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
6124 Adipose		TLC GC	a) 1778 b) 1120 c) 926 d) 793 e) 684	a) > zero > 3 ppm b) > zero > 3 ppm c) > zero > 3 ppm d) > zero > 3 ppm e) > zero 3 ppm	a) 84.58% positive b) Not given c) Not given d) Not given e) 96 54% positive	a) 1972 89 77% were positive, 5.85% were >3 ppm b) 1973 78.57% were positive, 5.80% were >3 ppm c) 1974 90 75% were positive, 5.08% were >3 ppm d) 1975 94 20% were positive 10 74% were >3 ppm e) 1976 97.97% were positive 9.29% were >3 ppm Data also presented by racial groupings Over study years (1972-76) nonwhites averaged 7 15 percentage points higher than whites for percent PCB > 3 ppm. Over study years, increasing trend in % all people with detectable PCB in adipose from 84.58% (1972) to 96.54% (1976). The National Human Monitoring Program, started 1967, monitors pesticide residues in general US population and assesses changes all trends. For more information, contact US Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20460 Autopsies, whites and nonwhites from cities with populations of >25,000 AUTOPSIES, RACIAL STUDIES, ADIPOSE TISSUE POLYCHLORINATED BIPHENYLS	Lucas, R.M. Erickson, M.D. Piserchia, P.V. Williams, S.R. 1980 EPA 560/13-79-015, 101 pp.

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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
6125 Blood	Ingestion	GC	a) 23 b) 41	a) 1-800 ppb b) 1-30 ppb	a) 99 +or- 163 ppb b) 6.7 +or- 5.3 ppb	a) Taiwan, 1979-80, few months after ingestion. 19 cases with levels >10 ppb b) Japan, 1973, 5 yr after ingestion. 7 cases with levels >10 ppb Poisoning by contaminated rice oil Similar intake in a) and b) Only PCBs with long retention time remaining in b) TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6126 Milk		GC/MS	1	a) 6.6-8.6 ng/g b) 578-647 ng/g	a) Not given b) Not given	a) Whole milk b) Fat Range for 4-6 extraction techniques. Of total by wt in milk, 4-10% was trichlorobiphenyl, 15-28% tetrachlorobiphenyl, 10-16% pentachlorobiphenyl, 12-15% hexachlorobiphenyl, 27-49% heptachlorobiphenyl, and 7-9% octachlorobiphenyl INDUSTRIAL CHEMICALS; CANADA; ADULTS; MILK; MEASUREMENT METHODS; FATS; POLYCHLORINATED BIPHENYLS	Mes, J. Davies, D.J. Lau, P.-Y. 1980 Chemosphere 9:763-769

Biphenyl, 2,2',4,4'-tetrachloro- (8 CI)
1,1'-Biphenyl, 2,2',4,4'-tetrachloro- (9 CI)
2437-79-8
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6127 Adipose		GC	26	0.09-11 ug/g	0.6 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6128 Blood, plasma		GC	26	0.2-24 ng/ml	3 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,3,',4,4'-tetrachloro- (8 CI)
1,1'-Biphenyl, 2,3',4,4'-tetrachloro-(9 CI)
32598-10-0
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6129 Adipose		GC	26	0.2-18 ug/g	2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6130 Blood, plasma		GC	26	0.3-113 ng/ml	7 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,3,3',4,4'-pentachloro- (8 CI)
1,1'-Biphenyl, 2,3,3',4,4'-pentachloro- (9 CI)
32598-14-4
C12-H5-Cl5
MW 316

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6131 Adipose		GC	26	0.2-4 ug/g	1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6132 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 1.20 +or- 1.03 ppb b) <0.01 ppb c) 0.05 +or- 0.02 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6133 Blood, plasma		GC	26	0.6-20 ng/ml	2 ug/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,3,4,4'-tetrachloro- (8 CI)
1,1'-Biphenyl, 2,3,4,4'-tetrachloro- (9CI)
33025-41-1
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6134 Adipose		GC	26	0.03-6 ug/g	0.9 ug/g Median	Analytically indistinguishable from 3,4,3',5'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6135 Blood, plasma		GC	26	0.7-29 ng/ml	3 ng/ml Median	Analytically indistinguishable from 3,4,3',5'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,3',4,4',5-pentachloro- (8 CI)
1,1'-Biphenyl, 2,3',4,4',5-pentachloro- (9 CI)
31508-00-6
C12-H5-Cl5
MW 316

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6136 Adipose		GC	26	0.09-5 ug/g	2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6137 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given b) Not given c) Not given	a) 3.46 +or- 2.37 ppb b) 0.13 +or- 0.05 ppb c) 0.22 +or- 0.09 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6138 Blood, plasma		GC	26	0.7-41 ng/ml	8 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,3',4',5-tetrachloro- (8 CI)
1,1'Biphenyl, 2,3',4',5-tetrachloro- (9 CI)
32598-11-1
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6139 Adipose		GC	26	0.1-2 ug/g	0.4 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6140 Blood, plasma		GC	26	0.2-27 ng/ml	2 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,4,4',5-tetrachloro- (8 CI)
1,1'-Biphenyl, 2,4,4',5-tetrachloro- (9CI)
32690-93-0
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6141 Adipose		GC	26	0.5-36 ug/g	7 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6142 Blood, plasma		GC	26	0.7-180 ng/ml	26 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 2,4',5-trichloro- (8 CI)
1,1'-Biphenyl, 2,4',5-trichloro- (9 CI)
16606-02-3
C12-H7-Cl3
MW 257.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6143 Blood, plasma		GC	26	1-850 ng/ml	27 ng/ml Median	Analytically indistinguishable from 2,4,4'-trichlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 3,3',4,4'-tetrachloro- (8 CI)
1,1'-Biphenyl, 3,3',4,4'-tetrachloro- (9 CI)
32598-13-3
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6144 Adipose		GC	26	0.07-0.3 ug/g	0.1 ug/g Median	Analytically indistinguishable from 2,3,6,3',4'-pentachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6145 Blood, plasma		GC	26	0.3-3 ng/ml	0.5 ng/ml Median	Analytically indistinguishable from 2,3,6,3',4'-pentachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 3,3',5,5'-tetrachloro- (8 CI)
1,1'-Biphenyl, 3,3',5,5'-tetrachloro- (9 CI)
33284-52-5
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6146 Adipose		GC	26	0.04-3 ug/g	0.3 ug/g Median	Analytically indistinguishable from 2,3,4,2'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6147 Blood, plasma		GC	26	0.2-42 ng/ml	1 ng/ml Median	Analytically indistinguishable from 2,3,4,2'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein. A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

Biphenyl, 4,4'-dichloro- (8 CI)
1,1'-Biphenyl, 4,4'-dichloro- (9 CI)
2050-68-2
C12-H8-Cl2
MW 223.11, MP 148-149 C, BP 315-319 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6148 Adipose		GC	26	0.002-0.2 ug/g	0.08 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6149 Blood, plasma		GC	26	0.03-2 ng/ml	0.7 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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
6150 Aorta		NA	a) 9 b) 9 c) 9 d) 9 e) 9 f) 9	a) 42.9-101 ug/g b) 67.5-110 ug/g c) 37.9-70.5 ug/g d) 21.0-127 ug/g e) 85.8-139 ug/g f) 29.0-80.9 ug/g Dry wt	a) 70.6 +or- 20.8 ug/g b) 86.2 +or- 15.1 ug/g c) 52.3 +or- 10.9 ug/g d) 64.8 +or- 38.8 ug/g e) 104 +or- 17.1 ug/g f) 60.8 +or- 15.8 ug/g Dry wt	a) Normal intima, median 69.7 ug/g dry wt b) Normal media, median 90.6 ug/g dry wt c) Normal adventitia 50.5 ug/g dry wt d) Atheroma intima, median 48.8 ug/g dry wt e) Atheroma media, median 103 ug/g dry wt f) Atheroma adventitia, median 61.4 ug/g dry wt No correlation with age. Significantly higher in media. No known bromine exposure 1 day-79 yr olds, autopsies AGE; AUTOPSIES; AORTA; BROMINE	Cross, J.D. Raie, R.M. Smith, H. 1981 Journal of Clinical Pathology 34:393-395
6151 Hair		NA	56	0.47X10(E-6)-7991X10(E-6) g/cu cm	4.25X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6152 Hair		NA		a) 0.05-9.0 ppm b) 0.57-4.4 ppm c) 0.11-1.89 ppm d) 0.19-9 ppm	a) 2.1 +or- 1.8 ppm b) 1.65 +or- 1.26 ppm c) 0.86 +or- 0.51 ppm d) 2.1 +or- 2.1 ppm	a) 12 cm length, 99 samples b) Root section, 10 samples c) Distal section, 18 samples d) Students in a), 30 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Dhara, K.R. Arunachalam, J Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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
6153 Breath		GC/MS	28	1.3-9.5 ng/l	3.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

C-26 Sterol (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6154 Blood, cells	Ingestion	TLC GC/MS	3	1.0-1.7 ug/g	1.4 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterolemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284
6155 Blood, plasma	Ingestion	TLC GC/MS	9	1.0-6.2 ug/ml	2.04 ug/ml	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 447 mg/day or 634 mg/day. 8 normal 23-47 yr old men, 1 hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

C-29 Sterol (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6156 Blood, cells	Ingestion	TLC GC/MS	3	1.5-2.3 ug/g	1.8 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterolemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284
6157 Blood, plasma	Ingestion	TLC GC/MS	9	Not detectable-4.4 ug/ml	1.5 ug/ml	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 447 mg/day or 634 mg/day 8 normal 23-47 yr old men, one hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6158				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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given t) Not given	a) 0.43 ppm b) 0.54 ppm c) 0.54 ppm d) 0.59 ppm e) 0.40 ppm f) 0.42 ppm g) 0.36 ppm h) 0.68 ppm i) 0.48 ppm j) 0.52 ppm k) 0.27 ppm l) 0.79 ppm m) 0.47 ppm n) 0.54 ppm o) 0.69 ppm p) 1.04 ppm q) 0.65 ppm r) 0.64 ppm s) 0.38 ppm t) 0.46 ppm Geometrics	a) Mothers (103) b) Infants (100) c) Mothers, 16-24 yr old (48) d) Infants of c) e) Mothers, 25-30 yr old (31) f) Infants of e) g) Mothers, 31-42 yr old (29) h) Infants of g) i) Normotensive mothers (75) j) Infants of i) k) Hypertensive mothers (13) l) Infants of k) m) Mothers with preterm births (7) n) Infants of m) o) Mothers with small-for-date infants (9) p) Infants of o) q) Mothers with malformed infants (8) r) Infants of q) s) Mothers with normal infants (66) t) Infants of s) j) and h) significantly different, also p) and t). No correlation with parity Residents of eastern France Inverse relationship between Cd in infants' hair and birthweight. Cd levels in infants of hypertensive mothers 3 times > than for mothers, and significantly > than in infants of normotensive mothers. Positive association of Cd levels in mothers and infants FRANCE; ADULTS; AGE; NEWBORN; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; LEAD; METALS; BIOACCUMULATION; BLOOD PRESSURE, PREGNANCY; RURAL AREAS	Huel, G. Boudene, C. Ibrahim, M.A. 1981 Archives of Environmental Health 36(5):221-227

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6159 Adrenal gland		ES	7	Not given	2.7 +or- 1.5 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6160 Aorta		ES	7	Not given	2.1 +or- 0.96 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6161 Blood		AAS	a) 66 23 59	a) 0.18-3.48 ug/100 ml b) 0.73-3.11 ug/100 ml c) 0.02-1.92 ug/100 ml	a) 1.42 +or- 0.10 ug/100 ml b) 1.70 +or- 0.16 ug/100 ml c) 0.36 +or- 0.04 ug/100 ml	a) Cd workers, no renal dysfunction b) Cd workers with renal dysfunction c) Non-Cd workers at same Zn-Cd plant Mean employment 17 (a), 27 (b) and 18 yr (c). Mean exposure period 7.5 (a) and 21.2 yr (b). Exposure levels 168 ug/cu m (static sampler) or 1192 ug/cu m (personal air monitor) for a) and b), and 0.1-15 ug/cu m for c) 148 of 264 workers with liver and renal cortical Cd levels above detection limits (10 and 50 ppm, respectively) Blood levels not correlated with body burden. Active and retired workers at Zn-Cd plant, Belgium Renal dysfunction unlikely if urine level of 10 ug/g creatinine (180 mg body burden) is not regularly exceeded. Critical liver level 30-60 ppm. Critical renal cortical level 215-385 ppm BELGIUM; ADULTS; KIDNEY DISEASES; BLOOD; BODY; KIDNEYS; LIVER; URINE; IN VIVO ANALYSIS; CADMIUM; METALS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Roels, H.A. Lauwerys, R.R. Buchet, J.P. Bernard, A. Chettle, D.R. Harvey, T.C. Al-Haddad, I.K. 1981 Environmental Research 26:217-240

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6162 Blood		AAS	a) 9 b) 12 c) 14 d) 12	a) Not given b) Not given c) Not given d) Not given	a) 25.7 +or- 3.0 ng/ml b) 41.7 +or- 3.8 ng/ml c) 37.7 +or- 3.3 ng/ml d) 50.6 +or- 2.7 ng/ml S.E.	a) Normotensive nonsmokers b) Normotensive smokers c) Hypertensive nonsmokers d) Hypertensive smokers Age-adjusted values also given. 36-51 yr old hypertensives, systolic pressures of 158-166. 34-50 yr old controls, systolic pressures of 114-124, Romania ROMANIA; AGE; HYPERTENSION; BLOOD; SMOKING; CADMIUM; METALS; BLOOD PRESSURE	Revis, N.W. Zinsmeister, A.R. 1981 Proceedings of the Society for Experimental Biology and Medicine 167:254-260
6163 Blood			1	Not applicable	28.3 ug/l	37 yr old worker, Ni/Cd battery factory No glomerular or tubular proteinuria BLOOD; KIDNEYS; LIVER; URINE; UNITED KINGDOM; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ghose, R.R. Morgan, W.D. Cummins, P.E. 1981 British Journal of Industrial Medicine 38:185-186
6164 Blood		AAS	16	a) 0.6-2.4 ug/100 ml b) 1.8-5.4 ug/100 ml c) 0.8-2.5 ug/100 ml	a) 1.4 +or- 0.6 ug/100 ml b) 3.5 +or- 1.5 ug/100 ml c) 1.5 +or- 0.7 ug/100 ml	a) 11 subjects, exposed 1.8-12 mo b) 5 subjects, exposed 3-19 yr c) Same as b), 2 yr later Workers, Cd-pigment manufacturing plant, Australia Dyspnea, emphysema Renal tubular damage BLOOD; URINE; AUSTRALIA; CASE HISTORIES; INDUSTRIAL DISEASES; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	De Silva, P.E. Donnan, M.B. 1981 British Journal of Industrial Medicine 38:76-86
6165 Blood		AAS	72	a) Not given b) Not given c) Not given d) Not given	a) 2.2 +or- 0.8 ng/g b) 3.5 +or- 1.7 ng/g c) 1.9 +or- 0.6 ng/g d) 2.2 +or- 0.9 ng/g	a) Maternal blood, 31 nonsmokers b) Maternal blood, 41 smokers c) Cord blood, 31 nonsmokers d) Cord blood, 31 nonsmokers d) Cord blood, 41 smokers a) and b) during active labor c) and d) immediately after delivery b) significantly greater than a) b) significantly greater than d) Mean age 22 and 23 yr, mean infant birth wt 3094 and 3436 g, mean gestation time 39.0 and 39.4 wk for smokers and nonsmokers, respectively, OH OHIO; ADULTS; NEWBORN; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CADMIUM; METALS; THIOCYANATES; BIOACCUMULATION; HEALTH HAZARDS; PREGNANCY; SMOKING	Kuhnert, P.M. Kuhnert, B.R. Bottoms, S.F. Erhard, P. 1982 American Journal of Obstetrics and Gynecology 142:1021

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6166 Blood		AAS	a) 39 b) 42 c) 43	a) 1.50-26.50 ug/1000 ml b) 2.5-37.0 ug/1000 ml b) 1.4-3.0 ug/1000 ml	a) Not given b) Not given c) Not given	a) Workers at Ni-Cd battery plant, average workplace time 1.5 yr b) Workers at Zn-Cd smelter, average time 14.5 yr c) Controls. Median 1.6 ug/1000 ml 5-95 percentile range GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335
6167 Blood, cells		AAS	a) 20 b) 20 c) 10 d) 10 e) 30 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 23 +or- 11 ng/g b) 24 +or- 22 ng/g c) 6.2 +or- 3.9 ng/g d) 4.1 +or- 3.8 ng/g e) 9.3 +or- 4.7 ng/g f) 4.4 +or- 3.0 ng/g Dry wt	a) Adults, cardiovascular disease, urban area b) Controls for a) c) Adults, cardiovascular disease, rural area d) Controls for c) e) High school seniors, hypertensives, urban area f) Controls for e) Erythrocytes Adults, mean age 55 yr, and students, Chatham and Evans counties, GA Depressed erythrocyte glutathione peroxidase CADMIUM; METALS; SELENIUM; RURAL AREAS; URBAN AREAS; GEORGIA; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD; BLOOD PLASMA; ERYTHROCYTES	Andrews, J.W. Hames, C.G. Metts, J.C., Jr. Davis, J.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:33-42
6168 Blood, plasma		AAS	a) 20 b) 20 c) 10 d) 10 e) 30 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 95 +or- 47 ng/g b) 119 +or- 163 ng/g c) 35 +or- 27 ng/g d) 28 +or- 14 ng/g e) 15 +or- 26 ng/g f) 11 +or- 10 ng/g Dry wt	a) Adults, cardiovascular disease, urban area b) Controls for a) c) Adults, cardiovascular disease, rural area d) Controls for c) e) High school seniors, hypertensives, urban area f) Controls for e) Adults, mean age 55 yr, and students, Chatham and Evans counties, GA Depressed erythrocyte glutathione peroxidase CADMIUM; METALS; SELENIUM; RURAL AREAS; URBAN AREAS; GEORGIA; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD; BLOOD PLASMA; ERYTHROCYTES	Andrews, J.W. Hames, C.G. Metts, J.C., Jr. Davis, J.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:33-42

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6169 Blood, whole		AAS	a) 20 b) 20 c) 10 d) 10 e) 30 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 6.5 +or- 3.4 ng/ml b) 7.0 +or- 3.1 ng/ml c) 1.9 +or- 0.7 ng/ml d) 1.2 +or- 0.8 ng/ml e) 1.8 +or- 1.1 ng/ml f) 1.0 +or- 0.7 ng/ml	a) Adults, cardiovascular disease, urban area b) Controls for a) c) Adults, cardiovascular disease, rural area d) Controls for c) e) High school seniors, hypertensives, urban area f) Controls for e) Adults, mean age 55 yr, and students, Chatham and Evans counties, GA Elevated blood Cd levels depressed erythrocyte glutathione peroxidase levels CADMIUM; METALS; SELENIUM; RURAL AREAS; URBAN AREAS; GEORGIA; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD; BLOOD PLASMA; ERYTHROCYTES	Andrews, J.W. Hames, C.G. Metts, J.C., Jr. Davis, J.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:33-42
6170 Body		NA	a) 66 b) 23 c) 59	a) 64-300 mg b) 134-556 mg c) 62-224 mg	a) 171.5 +or- 7.33 mg b) 284.5 +or- 25.7 mg c) 104.6 +or- 4.48 mg	a) Cd workers, no renal dysfunction b) Cd workers with renal dysfunction c) Non-Cd workers at same Zn-Cd plant Mean employment 17 (a), 27 (b) and 18 yr (c). Mean exposure period 7.5 (a) and 21.2 yr (b). Exposure levels 168 ug/cu m (static sampler) or 1192 ug/cu m (personal air monitor) for a) and b), and 0.1-15 ug/cu m for c) 148 of 264 workers with liver and renal cortical Cd levels above detection limits (10 and 50 ppm, respectively) Estimated from kidney and liver levels Active and retired workers at Zn-Cd plant, Belgium Renal dysfunction unlikely if urine level of 10 ug/g creatinine (180 mg body burden) is not regularly exceeded. Critical liver level 30-60 ppm. Critical renal cortical level 215-385 ppm BELGIUM; ADULTS; KIDNEY DISEASES; BLOOD; BODY; KIDNEYS; LIVER; URINE; IN VIVO ANALYSIS; CADMIUM; METALS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Roels, H.A. Lauwerys, R.R. Buchet, J.P. Bernard, A. Chettle, D.R. Harvey, T.C. Al-Haddad, I.K. 1981 Environmental Research 26:217-240
6171 Bone		ES	5	Not given	<4.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6172 Bone		NA	7	0.038-0.043 ppm	Not given	Autopsies, femur 45-75 yr old factory workers, Sweden ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6173 Hair		NA	55	0.61-0.85 ug/g	0.71 ug/g	Range of means, 5 localities Residents of Iceland ADULTS; HAIR; ARSENIC; CADMIUM; MERCURY; METALS; SELENIUM; ZINC	Johannesson, T. Lunde, G. Steinnes, E. 1981 Acta Pharmacologica et Toxicologica 48:185-189
6174 Hair		NA	55	0.12-1.1 ug/g	Not given	Range of means, estimated from graph Aswan, Fl Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6175 Hair		NA		a) 0.06-5.0 ppm b) 0.06-1.54 ppm c) 0.09-1.23 ppm d) 0.06-5.0 ppm	a) 0.86 +or- 0.83 ppm b) 0.9 +or- 0.45 ppm c) 0.62 +or- 0.36 ppm d) 0.93 +or- 1.02 ppm	a) 12 cm length, 99 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 31 samples Levels higher in people near fossil fuel power station or chemical industry. Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6176 Hair		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.18 ug/g b) 0.87 ug/g c) 1.03 ug/g d) 0.18 ug/g e) 5.11 ug/g f) 0.43 ug/g	a) Subject 1, unwashed hair b) Subject 1, after 12 successive acetone washes c) Subject 2, unwashed hair d) Subject 2, after 12 successive acetone washes e) Subject 3, unwashed hair f) Subject 3, after 12 successive washes in sodium lauryl sulfate a), c), e), 6-10 determinations, each subject. Data also for other procedures and washing agents. HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; IRON; MANGANESE; ZINC	Salmela, S. Vuori, E. Kilpio, J.O. 1981 Analytica Chimica Acta 125:131-137

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6177 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.45-1.7 ppm c) 5.7-20 ppm d) Not applicable e) Not applicable Dry wt	a) 0.67 +or- 0.32 ppm b) 1.07 ppm c) 12.6 ppm d) 1.5 ppm e) 2.7 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6178 Intestine		ES	10	Not given	2.6 +or- 0.73 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6179 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 17-76 ppm c) 25-130 ppm d) Not applicable e) Not applicable Dry wt	a) 49 +or- 23 ppm b) 46 ppm c) 66 ppm d) 3.9 ppm e) 7.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6180 Kidney		NA	a) 66 b) 23 c) 59	a) 51.7-310.3 ppm b) 103.4-300.0 ppm c) 51.7-248.3 ppm	a) 167.4 +or- 8.17 ppm b) 175.4 +or- 13.7 ppm c) 112.9 +or- 6.36 ppm	a) Cd workers, no renal dysfunction b) Cd workers with renal dysfunction c) Non-Cd workers at same Zn-Cd plant Mean employment 17 (a), 27 (b) and 18 yr (c). Mean exposure period 7.5 (a) and 21.2 yr (b). Exposure levels 168 ug/cu m (static sampler) or 1192 ug/cu m (personal air monitor) for a) and b), and 0.1-15 ug/cu m for c) 148 of 264 workers with liver and renal cortical Cd levels above detection limits (10 and 50 ppm, respectively) Analysis based on mean kidney depth of 5 cm, values should be increased 35% for mean depth of 8 cm Active and retired workers at Zn-Cd plant, Belgium Renal dysfunction unlikely if urine level of 10 ug/g creatinine (180 mg body burden) is not regularly exceeded. Critical liver level 30-60 ppm. Critical renal cortical level 215-385 ppm BELGIUM; ADULTS; KIDNEY DISEASES; BLOOD; BODY; KIDNEYS; LIVER; URINE; IN VIVO ANALYSIS; CADMIUM; METALS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Roels, H.A. Lauwerys, R.R. Buchet, J.P. Bernard, A. Chettle, D.R. Harvey, T.C. Al-Haddad, I.K. 1981 Environmental Research 26:217-240
6181 Kidney		NA	1	Not applicable	39 +or- 4 mg	Mean of 3.8 mg in 60 non-exposed subjects 37 yr old worker, Ni/Cd battery factory No glomerular or tubular proteinuria BLOOD; KIDNEYS; LIVER; URINE; UNITED KINGDOM; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ghose, R.R. Morgan, W.D. Cummins, P.E. 1981 British Journal of Industrial Medicine 38:185-186
6182 Kidney		NA	a) 7 b) 7 c) 4 d) 12	a) Not given b) Not given c) Not given d) Not given	a) 3.1 mg b) 4.6 mg c) 6.0 mg d) 23.6 mg	a) Controls, mean age 40.3 yr, no occupational exposure b) Office workers, mean age 44.0 yr, employed 0.7-34.0 yr c) Smelter workers, mean age 26.3 yr, employed 0.1-0.3 yr d) Smelter workers, mean age 50.3 yr, employed 8.0-29.0 yr Content left kidney d) significantly higher than a), b), and c) Group d) excreted significantly more metallothionein in urine than a), b), and c) Employees, Cd production plant and water plant employees (controls) ADULTS; KIDNEYS; LIVER; CADMIUM; METALS; PROTEINS; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS; SMELTERS	Tohyama, C. Shaikh, Z.A. Ellis, K.J. Cohn, S.H. 1981 Toxicology 22:181-191

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6183 Kidney		AAS	123	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	a) 14.8 +or- 12.2 ug/g b) 11.1 +or- 9.5 ug/g c) 21.0 +or- 8.0 ug/g d) 9.8 +or- 7.7 ug/g e) 15.0 +or- 9.8 ug/g f) 20.3 +or- 17.3 ug/g g) 21.2 +or- 10.2 ug/g h) 22.4 +or- 21.9 ug/g i) 16.7 +or- 6.2 ug/g j) 9.0 +or- 10.5 ug/g k) 22.0 +or- 14.8 ug/g	a) All cases 123 b) Non-smokers, 75 cases c) Smokers, 48 cases d) Cigar smokers, 4 cases e) Cancer, non-smokers, 21 cases f) Cancer, smokers, 11 cases g) Cancer and metastases, non-smokers, 10 cases h) Cancer and metastases, smokers, 6 cases i) Brain tumors, 4 cases j) Other, non-smokers, 16 cases k) Other, smokers, 12 cases Autopsies Smoking and nonsmoking patients CADMIUM; METALS; SELENIUM; ZINC; CADAVERS; CARCINOMAS; HYPERTENSION; KIDNEY DISEASES; LEUKEMIA; KIDNEYS; SMOKING	Shamberger, R.J. Bratush, C.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:203-210
6184 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 3.0-17 ppm c) 23-43 ppm d) Not applicable e) Not applicable Dry wt	a) 7.1 +or- 4.1 ppm b) 10.0 ppm c) 32 ppm d) 6.6 ppm e) 8.4 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6185 Liver		ASV LSV NA	30	0.5-4.9 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6186 Liver		NA	a) 66 b) 23 c) 59	a) 10-61 ppm b) 28-158 ppm c) 10-39 ppm	a) 32.8 +or- 1.67 ppm b) 66.5 +or- 7.57 ppm c) 18.7 +or- 0.92 ppm	a) Cd workers, no renal dysfunction b) Cd workers with renal dysfunction c) Non-Cd workers at same Zn-Cd plant Mean employment 17 (a), 27 (b) and 18 yr (c). Mean exposure period 7.5 (a) and 21.2 yr (b). Exposure levels 168 ug/cu m (static sampler) or 1192 ug/cu m (personal air monitor) for a) and b), and 0.1-15 ug/cu m for c) 148 of 264 workers with liver and renal cortical Cd levels above detection limits (10 and 50 ppm, respectively) Active and retired workers at Zn-Cd plant, Belgium BELGIUM; ADULTS; KIDNEY DISEASES; BLOOD; BODY; KIDNEYS; LIVER; URINE; IN VIVO ANALYSIS; CADMIUM; METALS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Roels, H.A. Lauwerys, R.R. Buchet, J.P. Bernard, A. Chettle, D.R. Harvey, T.C. Al-Haddad, I.K. 1981 Environmental Research 26:217-240
6187 Liver		NA	1	Not applicable	8 +or- 3 ug/g	37 yr old worker, Ni/Cd battery factory No glomerular or tubular proteinuria BLOOD; KIDNEYS; LIVER; URINE; UNITED KINGDOM; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ghose, R.R. Morgan, W.D. Cummins, P.E. 1981 British Journal of Industrial Medicine 38:185-186
6188 Liver		NA	a) 7 b) 7 c) 4 d) 12	a) Not given b) Not given c) Not given d) Not given	a) 3.2 ug/g b) 8.6 ug/g c) 2.9 ug/g d) 39.2 ug/g Geometric mean	a) Controls, mean age 40.3 yr, no occupational exposure b) Office workers, mean age 44.0 yr, employed 0.7-34.0 yr c) Smelter workers, mean age 26.3 yr, employed 0.1-0.3 yr d) Smelter workers, mean age 50.3 yr, employed 8.0-29.0 yr d) Significantly higher than a), b), and c) b) significantly higher than a) Group d) excreted significantly more metallothionein in urine than a), b), or c) Employees, Cd production plant and water plant employees (controls) ADULTS; KIDNEYS; LIVER; CADMIUM; METALS; PROTEINS; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS; SMELTERS	Tohyama, C. Shaikh, Z.A. Ellis, K.J. Cohn, S.H. 1981 Toxicology 22:181-191

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6189 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.6-6.3 ppm c) 3.3-23 ppm d) Not applicable e) Not applicable Dry wt	a) 1.6 +or- 0.97 ppm b) 3.4 ppm c) 11.1 ppm d) 5.1 ppm e) 7.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6190 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 2.5-31 ppm d) Not applicable e) Not applicable Dry wt	a) 2.5 +or- 0.70 ppm b) 0.8 ppm c) 12.8 ppm d) 9.4 ppm e) 24 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6191 Nail		NA	63	0.08-0.53 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6192 Pancreas		ES	5	Not given	5.8 +or- 2.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6193 Placenta		AAS	a) 31 b) 41	Not given	a) 13.7 +or- 6.4 ng/g b) 18.1 +or- 7.3 ng/g	a) Nonsmokers b) Smokers After perfusion with sucrose buffer to remove excess blood b) significantly greater than a) Levels 7 and 9 times corresponding cord blood levels respectively Mean age 22 and 23 yr for smokers and nonsmokers, respectively, OH OHIO; ADULTS; NEWBORN; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CADMIUM; METALS; THIOCYANATES; BIOACCUMULATION; HEALTH HAZARDS; PREGNANCY; SMOKING	Kuhnert, P.M. Kuhnert, B.R. Bottoms, S.F. Erhard, P. 1982 American Journal of Obstetrics and Gynecology 142:1021
6194 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.3-7.3 ppm c) 6.3-48 ppm d) Not applicable e) Not applicable Dry wt	a) 2.3 +or- 1.7 ppm b) 3.8 ppm c) 21.3 ppm d) 3.9 ppm e) 7.6 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6195 Stomach		ES	10	Not given	2.6 +or- 0.73 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6196 Thyroid gland		ES	4	Not given	3.9 +or- 1.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6197 Tongue		ES	2	Not given	0.80 +or- 0.24 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6198 Trachea		ES	2	Not given	0.95 +or- 0.22 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6199 Urine		AAS	a) 66 b) 23 c) 59	a) 0.65-61.6 ug/g creatinine b) 4.23-46.3 ug/g creatinine c) 0.33-12.3 ug/g creatinine	a) 13.8 +or- 1.36 ug/g creatinine b) 21.4 +or- 2.34 ug/g creatinine c) 3.1 +or- 0.34 ug/g creatinine	a) Cd workers, no renal dysfunction b) Cd workers with renal dysfunction c) Non-Cd workers at same Zn-Cd plant Mean employment period 17 (a), 27 (b) and 18 yr (c). Mean exposure period 7.5 (a) and 21.2 yr (b). Exposure levels 168 ug/cu m (static sampler) or 1192 ug/cu m (personal air monitor) for a) and b), and 0.1-15 ug/cu m for c) 148 of 264 workers with liver and renal cortical Cd levels above detection limits (10 and 50 ppm, respectively) Good correlation with body burden Active and retired workers at Zn-Cd plant, Belgium Renal dysfunction unlikely if urine level of 10 ug/g creatinine (180 mg body burden) is not regularly exceeded. Critical liver level 30-60 ppm. Critical renal cortical level 215-385 ppm BELGIUM; ADULTS; KIDNEY DISEASES; BLOOD; BODY; KIDNEYS; LIVER; URINE; IN VIVO ANALYSIS; CADMIUM; METALS; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; SMELTERS	Roels, H.A. Lauwerys, R.R. Buchet, J.P. Bernard, A. Chettle, D.R. Harvey, T.C. Al-Haddad, I.K. 1981 Environmental Research 26:217-240
6200 Urine			1	Not applicable	14.4 ug/g cretinine	37 yr old worker, Ni/Cd battery factory No glomerular or tubular proteinuria BLOOD; KIDNEYS; LIVER; URINE; UNITED KINGDOM; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	Ghose, R.R. Morgan, W.D. Cummins, P.E. 1981 British Journal of Industrial Medicine 38:185-186

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6201 Urine		AAS	16	a) <0.5-6.5 ug/l b) 10-32 ug/l c) 7.3-21 ug/l	a) Not given b) 20.2 +or- 10.4 ug/l c) 14.5 +or- 5.8 ug/l	a) 11 subjects, exposed 1.8-12 mo b) 5 subjects, exposed 3-19 yr c) Same as b), 2 yr later Workers, Cd-pigment manufacturing plant, Australia Dyspnea, emphysema Renal tubular damage BLOOD; URINE; AUSTRALIA; CASE HISTORIES; INDUSTRIAL DISEASES; CADMIUM; METALS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE	De Silva, P.E. Donnan, M.B. 1981 British Journal of Industrial Medicine 38:76-86
6202 Urine			41	48-25 ug/l	Not given	Levels 1-9 yr after removal from exposure. Mean level during exposure 75 ug/l Range of means estimated from graph Patients with proteinuria following Cd exposure in factory KIDNEY DISEASES; UNITED KINGDOM; ADULTS; OCCUPATIONAL DISEASES; URINE; INDUSTRIAL MEDICINE; CADMIUM	Adams, R.G. 1981 Lancet 1(8224):845
6203 Urine		AAS	a) 39 b) 42 c) 43	a) 1.95-11.80 ug/g creatinine b) 1.3-29.6 ug/g creatinine c) 1.0-3.1 ug/g creatinine	a) Not given b) Not given c) Not given	a) Workers at Ni-Cd battery plant, average workplace time 1.5 yr b) Workers at Zn-Cd smelter, average time 14.5 yr c) Controls. Median 1.9 ug/g creatinine 5-95 percentile range GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten urd Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335

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
6204 Adrenal gland		ES	7	Not given	560 +or- 430 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6205 Aorta		ES	7	Not given	7700 +or- 4200 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6206 Blood, plasma	Ingestion	AAS	2	a) Not applicable b) Not applicable c) Not applicable d) 8.8-9.0 mg/100 ml	a) 8.8 mg/100 ml b) 9.6 mg/100 ml c) 8.8 mg/100 ml d) Not given	a) Subject 1, beginning of study b) Subject 1, intake 733 mg/24 hr, low fiber diet c) Subject 1, intake 784 mg/24 hr, high fiber diet d) Subject 2, fluctuation during study period, intake 772 mg/24 hr low fiber diet, 841 mg/24 hr high fiber diet Total dietary intake during two 20 day study periods with 50% of caloric intake from either white bread or local, high fiber, moderate phytate bread. 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6207 Blood, plasma		AAS	a) 20 b) 20	a) Not given b) Not given	a) 2.3 +or- 0.16 umol/l b) 2.3 +or- 0.2 umol/l	a) Limited care dialysis patients b) Home dialysis patients Clinically stable patients on intermittent dialysis >9 months HEMODIALYSIS; KIDNEY DISEASES; CALCIUM; METALS; PHOSPHORUS; BLOOD; BLOOD PLASMA; ALUMINUM	Zumkley, H. Bertram, H.P. Graefe, U. Langer, K. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:299-303
6208 Blood, serum		AAS	a) 26 b) 21 c) 52 d) 11 e) 10 f) 21 g) 10 h) 10 i) 10	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) 86 +or- 6 ppm b) 84 +or- 1 ppm c) 86 +or- 9 ppm d) 85 +or- 2 ppm e) 88 +or- 0.5 ppm f) 90 +or- 8 ppm g) 87 +or- 0.4 ppm h) 90 +or- 6 ppm i) 130 +or- 38.1 ppm	a) Lung and respiratory tract b) Gastrointestinal tract c) Breast d) Cervix e) Lymphatic leukemia f) Malignant melanomas g) Hodgkin's lymphoma h) Healthy volunteers i) Geriatric patients a)-g) type of cancer b), c), and d) significantly lower than h) and i) Cancer patients (15-81 yr olds), geriatric patients (65-81 yr olds), healthy volunteers (20-44 yr olds), UK UNITED KINGDOM; CARCINOMAS; LEUKEMIA; MELANOMAS; NEOPLASMS; SARCOMAS; BLOOD SERUM; CALCIUM; COPPER; MAGNESIUM; MANGANESE; METALS; ZINC; BIOINDICATORS	Capel, I.D. Pinnock, M.H. Williams, D.C. Hanham, I.W.F. 1982 Oncology 39:38-41
6209 Bone		ES	5	Not given	92000 +or- 9200 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	INFORMATION	REFERENCE
6210 Bone		MS	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 24% b) 38% c) 25% d) 23% e) 26% f) 31% Dry wt	a) [illegible], Hauca Negra site, re[illegible]xcised, pre-ceramic, pre[illegible]rgical, date 4500-3000 yr before [illegible]nt (bp) b) [illegible], [illegible]uenape cemetery, specimens exposed on surface 30 yr, post ceramic, proto-metallurgical, date 3000-2500 yr bp c) Mandible, Hauca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Mandible, another person, site c) e) Mandible, another person, site c) f) Vertebra, mummy of wealthy female Egyptian, Ptolemic period, 2200 yr bp Ratio atomic Pb to atomic Ca in bones Peruvians was 3X10(E-8), compared to 2100-3500X10(E-8) in bones of present-day residents of England and the United States Ratio of Ba to Ca was 2-3X10(E-6) in bones of ancient Peruvians and present-day Americans Specimens from Viru Valley, Peru and Egypt EGYPT; PERU; UNITED KINGDOM; UNITED STATES; BONES; TEETH; BARIUM; CALCIUM; LEAD; BIOACCUMULATION	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951
6211 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1400-2100 ppm c) 1900-4000 ppm d) Not applicable e) Not applicable Dry wt	a) 660 +or- 530 ppm b) 1750 ppm c) 2767 ppm d) 2200 ppm e) 1100 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6212 Intestine		ES	10	Not given	1300 +or- 420 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6213 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1700-3100 ppm c) 2200-4100 ppm d) Not applicable e) Not applicable Dry wt	a) 1500 +or- 1200 ppm b) 2400 ppm c) 3367 ppm d) 2900 ppm e) 1000 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE: ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6214 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1400-2500 ppm c) 2500-4700 ppm d) Not applicable e) Not applicable Dry wt	a) 610 +or- 380 ppm b) 1950 ppm c) 3667 ppm d) 2300 ppm e) 740 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE: ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6215 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1700-1900 ppm c) 1900-13000 ppm d) Not applicable e) Not applicable Dry wt	a) 1300 +or- 860 ppm b) 1800 ppm c) 6033 ppm d) 2400 ppm e) 850 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE: ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6216 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 1300-3400 ppm d) Not applicable e) Not applicable Dry wt	a) 1000 +or- 250 ppm b) 2700 ppm c) 2033 ppm d) 2100 ppm e) 5600 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6217 Pancreas		ES	5	Not given	180 +or- 74 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6218 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1400-2700 ppm c) 1200-6200 ppm d) Not applicable e) Not applicable Dry wt	a) 720 +or- 500 ppm b) 2050 ppm c) 3267 ppm d) 3500 ppm e) 730 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6219 Stomach		ES	10	Not given	1300 +or- 420 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6220 Teeth		MS	a) 1 b) 1 c) 1 d) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 34% b) 28% c) 34% d) 32% Dry wt	a) Hauca Negra site, recently exposed, pre-ceramic, pre-metallurgical, date 4500-3000 yr before present (bp) b) Guanape cemetery, specimens exposed on surface 30 yr, post-ceramic, proto-metallurgical, date 3000-2500 yr bp c) Huaca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Another person, site c) Enamel Specimens from Viru Valley, Peru	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951
6221 Thyroid gland		ES	4	Not given	2600 +or- 850 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6222 Tongue		ES	2	Not given	700 +or- 71 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6223 Trachea		ES	2	Not given	5000 +or- 2500 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6224 Urine	Ingestion	AAS	2	a) Not given b) Not given c) Not given d) Not given	a) 154 mg/24 hr b) 99 mg/24 hr c) 187 mg/24 hr d) 128 mg/24 hr	a) Subject 1, intake 733 mg/24 hr, low fiber diet b) Subject 1, intake 784 mg/24 hr, high fiber diet c) Subject 2, intake 772 mg/24 hr, low fiber diet d) Subject 2, intake 841 mg/24 hr, high fiber diet Total dietary intake Means of 10 2-day periods 50% caloric intake from white bread in a) and c) and from high fiber, moderate phytate local bread in b) and d) Both subjects in negative balance on high fiber diet 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

Carbanilide, trichloro- (8 CI)
Urea, N,N'-diphenyl-, trichloro deriv. (9 CI)
1332-40-3
C13-H9-Cl3-N2-O
MW 315.6

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6225 Blood, plasma	Ingestion	HPLC Radiometry	3	a) 0.18-3.7 nmole Eq/g b) 0.27-<0.003 nmol Eq/g	a) Not given b) Not given	a) Total TCC - derived compounds. 1 and 2.8 hr after 2.2-2.4 umol/kg. Final measurement 1.1 nmol Eq/g at about 32 hr b) TCC, at 1 and 24 hr after 2.2-2.4 umol/kg Range of means, estimated from graph Data also for individual metabolites Healthy 20-40 yr olds ADULTS; BLOOD PLASMA; URINE; COSMETICS; METABOLITES; RADIOISOTOPES	Hiles, R.A. Birch, C.G. 1978 Drug Metabolism and Disposition 6(2):177-183

(NEXT PAGE)

Carbanilide, trichloro- (8 CI)
Urea, N,N'-diphenyl-, trichloro deriv. (9 CI)
1332-40-3
C13-H9-Cl3-N2-O
MW 315.6

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6226 Urine	Ingestion	Radiometry HPLC	6	22.7-41% of labelled dose	27.0 +or- 2.8% of labelled dose S.E.	Maximum cumulative excretion 80 hr after 1.9-2.4 umol/kg Healthy 20-40 yr olds ADULTS; BLOOD PLASMA; URINE; COSMETICS; METABOLITES; RADIOISOTOPES	Hiles, R.A. Birch, C.G. 1978 Drug Metabolism and Disposition 6(2):177-183

Carbon disulfide
75-15-0
C-S2
MW 76.14, MP -110.8 C, BP 46.5 C, VP 400 mm Hg at 28 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6227 Urine	Inhalation	Colorimetry		a) 3.8-4.1 mmol/mol creatinine b) 4.4-6.7 mmol/mol creatinine c) 8.7-20.8 mmol/mol creatinine d) 5.7-6.2 mmol/mol creatinine e) 6.4-13.4 mmol/mol creatinine f) 9.3-24.1 mmol/mol creatinine	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) Chemical plant workers not exposed to CS2, 69 samples b) Viscose plant A workers, closed process spinning, 56 samples c) Viscose plant B workers, open process spinning, 78 samples d) Workers exposed to 10 mg CS2/cu m at plant B, 6 samples e) Workers exposed to 50 mg CS2/cu m at plant B, 12 samples f) Workers exposed to 100 mg CS2/cu m at plant B, 60 samples Total valid samples. Levels for pre-workshift and end of workshift. Measured as thio compounds (metabolites) Range of means Rayon plant workers, The Netherlands NETHERLANDS; URINE; CARBON INORGANIC COMPOUNDS; SULFUR; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; METABOLITES; OCCUPATIONAL HAZARDS	van Doorn, R. Leijdekkers, C.P.M.J.M. Henderson, P.T. Vanhoorne, M. Vertin, P.G. 1981 Archives of Environmental Health 36(6):289-297

Carbon monoxide
630-08-0
C-O
MW 28.01, MP -205 C, BP -191.5 C, VP 10 mm Hg at -215 C, 100 mm Hg at -205.7 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6228 Blood	Inhalation	GC	a) 104 b) 144 c) 1 d) 1	a) 0.05-2.00 ml/dl b) 0.10-1.70 ml/dl c) Not applicable d) Not applicable	a) Not given b) Not given c) 0.130 +or- 0.0066 ml/dl d) 1.303 +or- 0.022 ml/dl	a) Vortex method. Smokers and nonsmokers exposed to various levels of CO to produce range of expected carboxyhemoglobin values b) Manometric method. Exposed as in a) c) Nonsmoker d) Smoker c), d) mean of 10 determinations CARBON MONOXIDE; BLOOD; MEASUREMENT METHODS; CARBON INORGANIC COMPOUNDS; SMOKING	Dahms, T.E. Horvath, S.M. 1974 Clinical Chemistry 20(5):533-537

Carotenes and Carotenoids
36-88-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6229 Blood, serum			6	a) 1.50-6.90 ug/ml b) 1.60-6.10 ug/ml	a) 3.88 +or- 1.00 IU/ml b) 3.70 +or- 0.90 IU/ml	a) Before hemodialysis b) After 8 hr hemodialysis Normal level, (1.93 ug/ml No significant change after hemodialysis Patients with chronic uremia CAROTENOIDS; KIDNEY DISEASES; BLOOD SERUM; HEMODIALYSIS; VITAMIN A; ISRAEL	Gotlorb, L. Sklan, D. Mines, M. 1978 Journal of the American Medical Association 239(8):751

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
6230 Hair		NA	30	5-32 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6231 Nail		NA	35	16-72 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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
6232 Hair		NA		a) 52-2280 ppm b) 31-1540 ppm c) 47-992 ppm	a) 532 +or- 454 ppm b) 472 +or- 432 pp. c) 247 +or- 228 ppm	a) 12 cm length, 94 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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
6233 Milk		GC/MS	42	a) Not detected-1.3 ng/ml b) 1.7-65 ng/ml c) 0.6-6.7 ng/ml d) 0.3-21 ng/ml e) 5.0-12 ng/ml f) Not detected-65 ng/ml	a) 0.52 +or- 0.48 ng/ml b) 23.34 +or- 24.3 ng/ml c) 1.53 +or- 1.74 ng/ml d) 3.09 +or- 6.34 ng/ml e) 7.21 +or- 3.55 ng/ml f) 5.57 +or- 10.9 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies near chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

Cholesta-5,22-dien-3beta-ol (8 CI)
Cholesta-5,22-dien-3-ol, (3beta)- (9 CI)
566-89-2
C27-H44-O
MW 384.71

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6234 Blood, cells	Ingestion	TLC GC/MS	3	1.3-2.7 ug/g	2.2 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterolemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284
6235 Blood, plasma	Ingestion	TLC GC/MS	9	1.0-18.5 ug/ml	6.4 ug/ml	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subjects). Total sterols in diet, 447 mg/day or 634 mg/day 8 normal 23-47 yr old men, 1 hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

Cholesterol (8 CI)
Cholest-5-en-3-ol (3beta)- (9 CI)
57-88-5
C27-H46-O
MW 386.64, MP 148.5 C (anhydrous), BP 233 C at 0.5 mm Hg, 360 C at 760 mm Hg (some decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6236 Blood, cells	Ingestion	TLC GC/MS	3	898-987 ug/g	948 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterolemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284
6237 Blood, plasma	Ingestion	TLC GC/MS	9	1346-4287 ug/ml	2076 ug/ml	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 447 mg/day or 634 mg/day 8 normal 23-47 yr old men, 1 hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

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
6238 Aorta		ES	7	Not given	3.2 +or- 2.8 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6239 Blood	Dermal	AAS	1	a) Not applicable b) Not applicable	a) 220 ug/100 ml b) 110 ug/100 ml	a) 4 days after falling in vat of chromic acid at 62 C b) After 85 hr of peritoneal dialysis, 8 days after accident 19 yr old industrial worker 2nd and 3rd degree burns on 20% body surface, severe vomiting, episodes of hypotension, complete anuria, pulmonary edema, mild hepatic damage, severe anemia, low grade fever METAL POISONING; BLOOD; CHROMIUM; METALS; INDUSTRIAL ACCIDENTS	Schiffl, H. Weidmann, P. Weiss, M. Massry, S.G. 1982 Mineral and Electrolyte Metabolism 7:28-35
6240 Bone		ES	5	Not given	<4.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6241 Hair		NA	37	0.25-0.95 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6242 Hair		NA		a) 0.09-3.3 ppm b) 0.17-3.3 ppm c) 0.18-4.6 ppm d) 0.1-1.7 ppm	a) 0.63 +or- 0.56 ppm b) 1.03 +or- 0.97 ppm c) 0.94 +or- 1.08 ppm d) 0.47 +or- 0.38 ppm	a) 12 cm length, 94 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 24 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6243 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.5-2.9 ppm c) 0.76-2.6 ppm d) Not applicable e) Not applicable Dry wt	0.73 +or- 0.58 ppm b) 2.2 ppm c) 1.5 ppm d) 0.58 ppm e) 0.20 ppm Dry wt	Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6244 Intestine		ES	10	Not given	1.3 +or- 0.89 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6245 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.82-1.7 ppm c) 0.29-1.8 ppm d) Not applicable e) Not applicable Dry wt	a) 0.45 +or- 0.42 ppm b) 1.26 ppm c) .80 ppm d) 0.61 ppm e) 0.19 ppm Dry wt	Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6246 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 3.2-4.6 ppm c) 1.0-1.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.53 +or- 0.34 ppm b) 3.9 ppm c) 1.3 ppm d) 0.41 ppm e) 0.43 ppm Dry wt	Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6247 Liver		NA	30	0.005-0.27 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6248 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 220-1400 ppm c) 40-110 ppm d) Not applicable e) Not applicable Dry wt	a) 1.4 +or- 0.70 ppm b) 810 ppm c) 69 ppm d) 12 ppm e) 2.3 ppm Dry wt	Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6249 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 57-220 ppm d) Not applicable e) Not applicable Dry wt	a) 8.2 +or- 2.5 ppm b) 2400 ppm c) 152 ppm d) 33 ppm e) 4.2 ppm Dry wt	Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6250 Nail		NA	53	0.95-3.25 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6251 Pancreas		ES	5	Not given	0.54 +or- 0.34 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6252 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.9-4.2 ppm c) 0.31-1.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.52 +or- 0.43 ppm b) 3.0 ppm c) .94 ppm d) 0.71 ppm e) 0.82 ppm Dry wt	Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6253 Stomach		ES	10	Not given	1.3 +or- 0.89 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6254 Thyroid gland		ES	4	Not given	0.54 +or- 0.34 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6255 Tongue		ES	2	Not given	0.62 +or- 0.42 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6256 Trachea		ES	2	Not given	1.7 +or- 1.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6257 Urine	Inhalation		a) 13 b) 7 c) 9 d) 7 e) 14 f) 4 g) 14 h) 15 i) 83	a) 4-11 ug/l b) 4-5 ug/l c) 4-60 ug/l d) 7-110 ug/l e) 4-40 ug/l f) 10-15 ug/l g) 4-130 ug/l h) 6-190 ug/l i) 4-190 ug/l	a) 4.8 +or- 1.5 ug/l b) 4.3 +or- 1.1 ug/l c) 9 +or- 2.6 ug/l d) 11 +or- 2.9 ug/l e) 11 +or- 2.0 ug/l f) 13 +or- 1.2 ug/l g) 13 +or- 2.9 ug/l h) 24 +or- 2.6 ug/l i) 10 +or- 2.7 ug/l Geometric	a) Tungsten inert gas welders. 10% or less of work time during previous 10 yr spent on manual metal arc (MMA) welding, nonsmokers b) Same as a), smokers c) 11-49% MMA welders, nonsmokers d) Same as c), smokers e) 50-87% MMA welders, nonsmokers f) Same as e), smokers g) >or= 90% MMA welders, nonsmokers h) Same as g), smokers i) All welders Correlation between MMA exposure level and remanent magnetic field of chest area. Significantly higher values for smokers Stainless steel welders, Finland FINLAND; URINE; CHROMIUM; METALS; NICKEL; FUMES; INDUSTRIAL PLANTS; INDUSTRIES; OCCUPATIONAL HAZARDS; SMOKING	Kalliomaki, P.-L. Rahkonen, E. Vaaranen, V. Kalliomaki, K. Aittoniemi, K. 1981 International Archives of Occupational and Environmental Health 49:67-75

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
6258 Adrenal gland		ES	7	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6259 Aorta		ES	7	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6260 Bone		ES	5	Not given	<2.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6261 Hair		NA	59	135-210 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6262 Hair		NA		a) 0.02-0.95 ppm b) 0.04-0.4 ppm c) 0.08-0.5 ppm d) 0.04-0.95 ppm	a) 0.15-0.07 ppm b) 0.14 +or- 0.09 ppm c) 0.19 +or- 0.13 ppm d) 0.18 +or- 0.25 ppm	a) 12 cm length, 105 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 32 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6263 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-<0.2 ppm c) <0.2-0.31 ppm d) Not applicable e) Not applicable Dry wt	a) 0.22 +or- 0.06 ppm b) <0.2 ppm c) Not given d) 0.28 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1991 Archives of Environmental Health 36(4):155-165
6264 Intestine		ES	10	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6265 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-<0.2 ppm c) <0.2-0.60 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) <0.2 ppm c) Not given d) 0.35 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6266 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.22-0.33 ppm c) 0.31-0.39 ppm d) Not applicable e) Not applicable Dry wt	a) 0.31 +or- 0.10 ppm b) 0.28 ppm c) 0.34 ppm d) 0.46 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6267 Liver		NA	30	0.017-0.16 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6268 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-<0.2 ppm c) <0.2-<0.2 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) <0.2 ppm c) <0.2 ppm d) 1.4 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6269 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) <0.6-1.1 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) <0.6 ppm c) Not given d) 0.76 ppm e) <0.6 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6270 Nail		NA	62	85-600 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6271 Pancreas		ES	5	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6272 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-<0.2 ppm c) <0.2-0.41 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) <0.2 ppm c) Not given d) 0.45 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6273 Stomach		ES	10	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6274 Thyroid gland		ES	4	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6275 Tongue		ES	2	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6276 Trachea		ES	2	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6277 Urine		AAS		0.1-0.75 ug/l	0.38 ug/l	Subjects not occupationally exposed, Germany GERMANY; URINE; MEASUREMENT METHODS; COBALT; METALS	Schumacher-Wittkopf, E. Angerer, J. 1981 International Archives of Occupational and Environmental Health 49:77-81

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
6278 Adrenal gland		ES	7	Not given	10 +or- 8.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6279 Aorta		ES	7	Not given	6.6 +or- 2.6 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6280 Blood, plasma		AAS	26	a) Not given b) Not given	a) 20.78 +or- 6.7 umol/l b) 21.7 +or- 6.9 umol/l	a) 19 healthy controls b) 7 patients with acute myocardial infarction BLOOD PLASMA; CARDIOVASCULAR DISEASES; HEART DISEASES; COPPER; MAGNESIUM; MANGANESE; ZINC	Zumkley, H. Bertram, H.P. Vetter, H. Tank, B. Wirth, W. 1980 Trace Substances in Environmental Health VIV, D.D. Hemphill, ed. pp 211-216

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6281 Blood, serum		AAS	171	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) 1.5 +or- 0.13 ppm b) 1.4 +or- 0.13 ppm c) 1.8 +or- 1.5 ppm d) 1.4 +or- 0.54 ug/ml e) 2.0 +or- 0.26 ug/ml f) 2.6 +or- 1.4 ug/ml g) 1.4 +or- 0.32 ppm h) 1.9 +or- 0.10 ppm i) 1.3 +or- 0.27 ppm j) 1.8 +or- 0.07 ppm k) 1.4 +or- 0.2 ppm l) 1.3 +or- 0.3 ppm	a) Respiratory tract, 26 cases b) Gastrointestinal tract, 21 cases c) Breast, 52 cases d) Breast, stage I and II, 19 cases e) Breast, stage III, 6 cases f) Breast, stage IV, 14 cases g) Cervix, 11 cases h) Leukemia, 10 cases i) Melanoma, 21 cases j) Hodgkin's lymphoma, 10 cases k) Healthy volunteers, 10 cases l) Geriatric patients, 10 cases a)-j) type of cancer c), h), and j) significantly higher than k) and l) e) and f) significantly higher than d) level varied with stage of breast cancer, highest in advanced stages level increased over 5 mo in radiotherapy patients with poorest prognosis Cancer patients (15-81 yr olds), geriatric patients (65-81 yr olds), healthy volunteers (20-44 yr olds), UK UNITED KINGDOM; CARCINOMAS; LEUKEMIA; MELANOMAS; NEOPLASMS; SARCOMAS; BLOOD SERUM; CALCIUM; COPPER; MAGNESIUM; MANGANESE; METALS; ZINC; BIOINDICATORS	Capel, I.D. Pinnock, M.H. Williams, D.C. Hanham, I.W.F. 1982 Oncology 39:38-41
6282 Blood, whole		X-ray Spectrometry	27	Not given	1.2 ppm	Precision 18% BLOOD; MEASUREMENT METHODS; COPPER; IRON; METALS; RUBIDIUM; SELENIUM; ZINC	Bearse, R.C. Close, D.A. Malanify, J.J. Umbarger, C.J. 1974 Analytical Chemistry 46(4):499-503
6283 Bone		ES	5	Not given	4.6 +or- 1.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6284 Bone		NA	a) 7 b) 5	a) 2-8 ppm b) 2-4 ppm	a) 3 ppm b) 3 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted area ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6285 Hair		NA	56	3.2X10(E-6)-3237X10(E-6) g/cu cm	22.19X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6286 Hair		NA		a) 7-53 ppm b) 7-39 ppm c) 8-75 ppm d) 7-52 ppm	a) 21 +or- 9.7 ppm b) 22 +or- 7.0 ppm c) 22.7 +or- 9.3 ppm d) 22 +or- 11 ppm	A) 12 cm length, 10% samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 22 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6287 Hair		AAS	2	a) Not given b) Not given c) Not given d) Not given	a) 40.6 ug/g b) 40.3 ug/g c) 12.8 ug/g d) 10.4 ug/g	a) Subject 2, unwashed hair b) Subject 2, after 12 successive acetone washes acetone c) Subject 3, unwashed hair d) Subject 3, after 12 successive washes in sodium lauryl sulfate a), c) 6-10 determinations, 2 of 3 subjects. Data also for other procedures and washing agents. HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; IRON; MANGANESE; ZINC;	Salmela, S. Vuori, E. Kilpio, J.O. 1981 Analytica Chimica Acta 125:131-137

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6288 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 5.0-13 ppm c) 7.1-10 ppm d) Not applicable e) Not applicable Dry wt	a) 8.8 +or- 2.8 ppm b) 9 ppm c) 8.8 ppm d) 7.7 ppm e) 4.5 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6289 Intestine		ES	10	Not given	6.0 +or- 2.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6290 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 6.0-11 ppm c) 6.0-21 ppm d) Not applicable e) Not applicable Dry wt	a) 12 +or- 5.9 ppm b) 8.5 ppm c) 15.3 ppm d) 8.2 ppm e) 5.8 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6291 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 13-19 ppm c) 14-21 ppm d) Not applicable e) Not applicable Dry wt	a) 18 +or- 7.7 ppm b) 16 ppm c) 18 ppm d) 17 ppm e) 11 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6292 Liver		ASV LSV NA	30	3.2-14.7 ug/g Wet wt	Not given	Category 3 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (trace element of environmental importance not included in first priority list) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6293 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 8.0-10 ppm c) 8.3-13 ppm d) Not applicable e) Not applicable Dry wt	a) 9.5 +or- 3.8 ppm b) 9 ppm c) 10.2 ppm d) 7.2 ppm e) 7.5 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6294 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 6.6-9.3 ppm d) Not applicable e) Not applicable Dry wt	a) 7.6 +or- 2.3 ppm b) 9.0 ppm c) 7.6 ppm d) 8.2 ppm e) 3.3 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6295 Pancreas		ES	5	Not given	5.0 +or- 1.7 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6296 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 9.0-6.8 ppm c) 3.8-8.6 ppm d) Not applicable e) Not applicable Dry wt	a) 6.1 +or- 1.2 ppm b) 7.9 ppm c) 5.5 ppm d) 15 ppm e) 4.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromium refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6297 Stomach		ES	10	Not given	6.0 +or- 2.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6298 Thyroid gland		ES	4	Not given	3.4 +or- 1.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6299 Tongue		ES	2	Not given	7.4 +or- 5.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6300 Trachea		ES	2	Not given	3.2 +or- 0.07 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Coumarin (9 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
6301 Breath		GC/MS	28	0.07-0.63 ng/l	0.22 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6302 Breath		GC/MS	28	0.08-2 ng/l	0.35 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Curium
7440-51-9
Cm
AtW 247, MP 1340 + or - 40 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6303 Urine	Dermal		a) 1 b) 1 c) 1 d) 1	a) 16.3-0.07 dpm/day b) 84-0.15 dpm/day c) 9.06-1.94 dpm/day d) 26.2-1.41 dpm/day	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) Day 1 and day 149 after uptake through puncture wound in finger b) Day 1 and day 145 after acid burn c) Normalized data for (a) d) Normalized data for (b) ADULTS; CASE HISTORIES; URINE; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIOISOTOPES; RADIONUCLIDES	Parkinson, W.W. Henley, L.C. Nestor, C.W., Jr. 1980 Health Physics 39:977-980

Cyanide
57-12-5
C-N
MW 26.02

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6304 Blood	Inhalation	GC	53	a) 0.5-13 umol/liter b) 2.2-13 umol/liter c) 0.5-3.9 umol/liter d) 2.0-126 umol/liter	a) 5.0 umol/liter b) 6.6 umol/liter c) 2.1 umol/liter d) 25.8 umol/liter	a) 17 fire survivors, no clinical evidence of smoke inhalation. Mean carboxyhemoglobin, 3.8% b) 11 smokers from a) Mean carboxyhemoglobin, 4.7% c) 6 non-smokers from a). Mean carboxyhemoglobin, 2.1% d) 36 fire survivors, clinical evidence of smoke inhalation. Mean carboxyhemoglobin, 14.5%. Blood carboxyhemoglobin confirmed severe smoke inhalation in absence of conclusive clinical evidence SMOKE INHALATION; SCOTLAND; BLOOD; CYANIDE; FUMES; HEALTH HAZARDS; INHALATION; SMOKING	Clark, C.J. Campbell, D. Reid, W.H. 1981 Lancet 1(8234):1332-1335

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
6305 Breath		GC/MS	28	2.3-8.5 ng/l	4.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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-Cl6
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
6306 Adipose		GC	a) 8 b) 3	a) 1-15 mg/kg b) 0.01-0.2 mg/kg Extractable lipid basis	a) 5.8 +or- 5.0 mg/kg b) Not given Extractable lipid basis	a) Hexachlorocyclohexane workers b) Controls Subcutaneous tissue taken from abdomen Males employed in lindane production, and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; INDUSTRIAL MEDICINE; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127
6307 Adipose		GC	a) 19 b) 9 c) 9	a) Not detected-0.08 ug/g b) Not detected-0.08 ug/g c) Not detected	a) 0.02 +or- 0.02 ug/g b) 0.02 +or- 0.02 ug/g c) Not given	a) Torreon, Mexico. Agricultural region with high pesticide use (10 samples >0.01 ug/g) b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (7 samples >0.01 ug/g) c) Puebla. Industrial and traditional agricultural region with low pesticide use Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269
6308 Blood, serum		GC	77	a) 13-273 ug/l b) 50-183 ug/l c) 25-142 ug/l d) 10-138 ug/l e) 10-273 ug/l f) None detected	a) 79.5 +or- 67.0 ug/l b) 116.8 +or- 55.3 ug/l c) 56.2 +or- 32.8 ug/l d) 52.5 +or- 29.7 ug/l e) 69.6 +or- 51.5 ug/l f) None detected	a) 18 working in HCH synthesis b) 7 working in alpha-HCH extraction c) 11 working in alpha-HCH decomposition d) 21 working in gamma-HCH purification by fractional methanolic crystallization e) 57 total of a)-d) f) 20 controls Samples at end of working week Air level at work places, 0.002-1.99 mg/cu m Males (mean age 42 +or- 10 yr) employed in lindane production for 1-30 yr (mean exposure, 10 +or- 9 yr), and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; INDUSTRIAL MEDICINE; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127

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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-Cl6
MW 290.83, MP 159.5-160 C, BP 288 C, VP 0.02 mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6309 Blood, serum		GC	a) 32 b) 27 c) 81 d) 68 e) 40	a) 0.0-0.04 ppm b) 0.002-0.057 ppm c) 0.003-0.046 ppm d) 0.001-0.085 ppm e) 0.0-0.034 ppm f) 0.021-0.131 ppm g) 0.018-0.160 ppm h) 0.017-0.215 ppm i) 0.034-0.165 ppm j) 0.012-0.175 ppm	a) 0.01 +or- 0.0068 ppm b) 0.010 +or- 0.0086 ppm c) 0.021 +or- 0.0151 ppm d) 0.018 +or- 0.0165 ppm e) 0.016 +or- 0.008 ppm f) 0.078 +or- 0.028 ppm g) 0.096 +or- 0.039 ppm h) 0.063 +or- 0.037 ppm i) 0.077 +or- 0.0284 ppm j) 0.051 +or- 0.0327 ppm	a) No previous exposure b) 1 season of prior exposure c) 2 seasons of prior exposure d) 3 seasons of prior expsure e) >3 seasons of prior expcsure f) Group a), post-exposure g) Group b), post-exposure h) Group c), post-exposure i) Group d), post-exposure j) Group e), post-exposure a)-e) Pre-exposure f)-j) After 16 wk spraying technical grade HCH (3.1% alpha, .7% beta, and 1% gamma), applied with pump (20 mg/sq ft) 19-49 yr old malaria spraymen with 0-4 seasons prior occupational exposure ADULTS; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Gupta, S.K. Parikh, J.R. Shah, M.P. Chatterjee, S.K. Kashyap, S.K. 1982 Archives of Environmental Health 37(1):41-44

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6310 Adipose		GC	a) 8 b) 3	a) 18-103 mg/kg b) 0.3-2.4 mg/kg Extractable lipid basis	a) 45.6 +or- 24.4 mg/kg b) Not given Extractable lipid basis	a) Hexachlorocyclohexane workers b) Controls Subcutaneous tissue from abdomen Levels about 300-fold higher than in serum Males employed in lindane production, and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; *INDUSTRIAL MEDICINE*; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6311 Adipose		GC	a) 19 b) 9 c) 9	A) Not detected-1.57 ug/g b) Not detected-0.46 ug/g c) Not detected-0.25 ug/g	a) 0.33 +or- 0.48 ug/g b) 0.04 +or- 0.05 ug/g c) Not given	a) Torreon, Mexico. Agricultural region with high pesticide use (11 samples >0.01 ug/g) b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (4 samples >0.01 ug/g) c) Peubla. Industrial and traditional agricultural region with low pesticide use (2 samples >0.01 ug/g) levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269
6312 Blood, serum		GC	77	a) 17-305 ug/l b) 117-496 ug/l c) 114-760 ug/l d) 17-434 ug/l e) 17-760 ug/l f) None detected	a) 144.5 +or- 97.3 ug/l b) 245.6 +or- 140.0 ug/l c) 344.2 +or- 187.0 ug/l d) 130.5 +or- 121.5 ug/l e) 190.3 +or- 153.4 ug/l f) None detected	a) 18 working in HCH synthesis b) 7 working in alpha-HCH extraction c) 11 working in alpha-HCH decomposition d) 21 working in gamma-HCH purification by fractional methanolic crystallization e) 57 total of a)-d) f) 20 controls Samples at end of working week Air level at work places, 0.001-0.38 mg/cu m Significant increase with time of employment Males (mean age 42 +or- 10 yr) employed in lindane production for 1-30 yr (mean exposure, 10 +or- 9 yr), and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; INDUSTRIAL MEDICINE; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6313 Blood, serum		GC	a) 32 b) 27 c) 81 d) 68 e) 40	a) 0.0-0.250 ppm b) 0.013-0.033 ppm c) 0.014-0.689 ppm d) 0.087-0.699 ppm e) 0.044-0.421 ppm f) 0.065-0.402 ppm g) 0.122-0.444 ppm h) 0.087-0.635 ppm i) 0.130-0.673 ppm j) 0.089-0.445 ppm	a) 0.058 +or- 0.0544 ppm b) 0.086 +or- 0.0635 ppm c) 0.266 +or- 0.2005 ppm d) 0.294 +or- 0.1418 ppm e) 0.146 +or- 0.0781 ppm f) 0.250 +or- 0.0814 ppm g) 0.315 +or- 0.0971 ppm h) 0.289 +or- 0.1072 ppm i) 0.385 +or- 0.1324 ppm j) 0.225 +or- 0.0723 ppm	a) No previous exposure b) 1 season of prior exposure c) 2 seasons of prior exposure d) 3 seasons of prior expsure e) >3 seasons of prior expcsure f) Group a), post-exposure g) Group b), post-exposure h) Group c), post-exposure i) Group d), post-exposure j) Group e), post-exposure a)-e) Pre-exposure f)-j) After 16 wk spraying technical grade HCH (3.1% alpha, .7% beta, and 1% gamma), applied with pump (20 mg/sq ft) 19-49 yr old malaria spraymen with 0-4 seasons prior occupational exposure ADULTS; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Gupta, S.K. Parikh, J.R. Shah, M.P. Chatterjee, S.K. Kashyap, S.K. 1982 Archives of Environmental Health 37(1):41-44

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6314 Adipose		GC	a) 8 b) 3	a) 0-11 mg/kg b) 0-0.1 mg/kg Extractable lipids basis	a) 3.1 +or- 3.1 mg/kg b) Not given Extractable lipid basis	a) Hexachlorocyclohexane workers b) Controls Subcutaneous tissue taken from abdomen Males employed in lindane production and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; INDUSTRIAL MEDICINE; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127

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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
6315 Blood		GC	100	a) 2.4-135.0 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 19.0 +or- 12.4 ppb b) 14.7 +or- 19.2 ppb c) 27.4 +or- 28.8 ppb d) 19.1 +or- 11.8 ppb e) 21.7 +or- 21.5 ppb f) 18.4 +or- 22.9 ppb g) 12.2 +or- 25.2 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Maternal blood, collected 8-12 hr before parturition b) and c), f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6316 Blood, fetal		GC	100	a) 1.2-175.7 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 11.8 +or- 5.3 ppb b) 10.2 +or- 16.1 ppb c) 14.9 +or- 6.3 ppb d) 12.4 +or- 2.0 ppb e) 11.4 +or- 7.12 ppb f) 8.8 +or- 9.6 ppb g) 16.9 +or- 27.7 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery b) and c), f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6317 Blood, serum		GC	77	a) 9-56 ug/l b) 17-67 ug/l c) 5-17 ug/l d) 19-188 ug/l e) 5-188 ug/l f) None detected	a) 20.4 +or- 12.1 ug/l b) 35.5 +or- 18.0 ug/l c) 12.3 +or- 3.5 ug/l d) 64.3 +or- 53.5 ug/l e) 36.9 +or- 39.9 ug/l f) None detected	a) 18 working in HCH synthesis b) 7 working in alpha-HCH extraction c) 11 working in alpha-HCH decomposition d) 21 working in gamma-HCH purification by fractional methanolic crystallization) e) 57 total of a)-d) f) 20 controls Samples at end of working week Air level at work places, 0.004-0.15 mg/cu m Males (mean age 42 +or- 10 yr) employed in lindane production for 1-30 yr (mean exposure, 10 +or- 9 yr), and as controls, unexposed clerks. GERMANY; ADULTS; ADIPOSE TISSUE; BLOOD SERUM; INDUSTRIAL MEDICINE; CHLORINATED HYDROCARBONS; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AIR POLLUTION; BIOACCUMULATION; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES; INDUSTRIAL CHEMICALS	Baumann, K. Angerer, J. Heinrich, R. Lehnert, G. 1980 International Archives of Occupational and Environmental Health 47:119-127

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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
6318 Blood, serum		GC	a) 32 b) 27 c) 81 d) 68 e) 40	a) 0.0-0.087 ppm b) 0.0-0.051 ppm c) 0.0-0.036 ppm d) 0.0-0.057 ppm e) 0.0-0.028 ppm f) 0.0-0.112 ppm g) 0.0-0.099 ppm h) 0.0-0.065 ppm i) 0.0-0.132 ppm j) 0.0-0.063 ppm	a) 0.009 +or- 0.0128 ppm b) 0.004 +or- 0.0074 ppm c) 0.006 +or- 0.0092 ppm d) 0.009 +or- 0.0120 ppm e) 0.008 +or- 0.0099 ppm f) 0.037 +or- 0.0322 ppm g) 0.037 +or- 0.0326 ppm h) 0.028 +or- 0.0214 ppm i) 0.034 +or- 0.0349 ppm j) 0.025 +or- 0.0168 ppm	a) No previous exposure b) 1 season of prior exposure c) 2 seasons of prior exposure d) 3 seasons of prior expsure e) >3 seasons of prior exposure f) Group a), post-exposure g) Group b), post-exposure h) Group c), post-exposure i) Group d), post-exposure j) Group e), post-exposure a)-e) Pre-exposure f)-j) After 16 wk spraying technical grade HCH (3.1% alpha, .7% beta, and 1% gamma), applied with pump (20 mg/sq ft) 19-49 yr old malaria spraymen with 0-4 seasons prior occupaticnal exposure ADULTS; BLOOD SERUM; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; PESTICIDES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Gupta, S.K. Parikh, J.R. Shah, M.P. Chatterjee, S.K. Kashyap, S.K. 1982 Archives of Environmental Health 37(1):41-44
6319 Placenta		GC	100	a) 0.7-95.6 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 17.1 +or- 15.8 ppb b) 12.9 +or- 7.7 ppb c) 23.6 +or- 21.4 ppb d) 13.7 +or- 24.7 ppb e) 16.5 +or- 15.7 ppb f) 17.5 +or- 16.9 ppb g) 18.9 +or- 17.6 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery b) and c) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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
6320 Breath		GC/MS	28	2.3-8.7 ng/l	4.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6321 Breath		GC/MS	28	0.2-3.2 ng/l	0.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

DDT, total (No postings in CHEMLINE).
50-29-3
C14-H9-C15
MW 354.50

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6322 Adipose		GC	a) 19 b) 9 c) 9	a) 2.49-148.63 ug/g b) 1.45-15.35 mg/g c) Not detected-8.04 ug/g	a) 21.47 +or- 37.10 ug/g b) 8.31 +or- 4.95 ug/g c) 3.44 +or- 3.25 ug/g	a) Torreon, Mexico. Agricultural region with high pesticide use b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas c) Puebla. Industrial and traditional agricultural region with low pesticide use Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269
6323 Blood		GC	100	a) 7.7-1257.3 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 47.2 +or- 52.2 ppb b) 42.1 +or- 38.5 ppb c) 56.1 +or- 86.3 ppb d) 41.6 +or- 44.2 ppb e) 72.1 +or- 183.4 ppb f) 87.2 +or- 217.8 ppb g) 55.4 +or- 52.4 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Sum of p,p'-DDE, p,p'-DDD, and p,p'-DDT Maternal blood, collected 8-12 hr before parturition Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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DDT, total (No postings in CHEMLINE).
50-29-3
C14-H9-C15
MW 354.50

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6324 Blood, fetal		GC	100	a) 2.7-1029.8 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 50.7 +or- 117.0 ppb b) 49.5 +or- 173.7 ppb c) 51.1 +or- 44.2 ppb d) 62.2 +or- 51.0 ppb e) 50.0 +or- 50.4 ppb f) 40.6 +or- 53.1 ppb g) 41.6 +or- 72.1 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Sum of p,p'-DDE, p,p'-DDD, p,p'-DDT Cord blood, collected at delivery Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDI; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6325 Blood, serum		GC	499	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 m) Not given n) Not given o) Not given p) Not given	a) 25 ug/l b) 26 ug/l c) 35 ug/l d) 46 ug/l e) 50 ug/l f) 112 ug/l g) 62 ug/l h) 143 ug/l i) 100 ug/l j) 252 ug/l k) 180 ug/l l) 220 ug/l m) 160 ug/l n) 195 ug/l o) 285 ug/l p) 375 ug/l Geometric	a) Females age <1-9 b) Males age <1-9 c) Females age 10-19 d) Males age 10-19 e) Females age 20-29 f) Males age 20-29 g) Females age 30-39 h) Males age 30-39 i) Females age 40-49 j) Males age 40-49 k) Females age 50-59 l) Males age 50-59 m, Females age 60-69 n) Males age 60-69 o) Females >or= 70 p) Males >or= 70 Estimated from graph Levels increased with age. Fish consumption was second strongest determinant. Residents of Triana, AL living downstream from defunct DDT-manufacturing plant. 43.8% male, 56.2% female, 86.9% black, 36% children. BLOOD SERUM; COMPARATIVE EVALUATIONS; INDUSTRIAL PLANTS; METABOLITES; DDT; ALABAMA; ADOLESCENTS; ADULTS; CHILDREN; INFANTS	Kreiss, K. Zack, M.M. Kimbrough, R.D. Needham, L.L. Smrek, A.L. Jones, B.T. 1981 Journal of the American Medical Association 245(19):1926-1930
6326 Placenta		GC	100	a) Not detected-298.7 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 56.2 +or- 51.6 ppb b) 51.4 +or- 48.3 ppb c) 63.8 +or- 56.9 ppb d) 57.7 +or- 59.4 ppb e) 73.6 +or- 73.7 ppb f) 75.7 +or- 70.7 ppb g) 58.4 +or- 42.4 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Sum of p,p'-DDE, p,p'-DDD, and p,p'-DDT Tissue collected at delivery Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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
6327 Breath		GC/MS	28	0.22-1 ng/l	0.47 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6328 Breath		GC/MS	28	0.04-3.5 ng/l	0.37 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6329 Breath		GC/MS	28	0.08-1.2 ng/l	0.32 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6330 Breath		GC/MS	28	0.09-1.2 ng/l	0.32 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

D00481 (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6331 Urine	Ingestion	Radiometry	6	0.032-0.054% of dose	0.041 +or- 0.010% of dose	7 day cumulative excretion after 50 uCi dose. Fecal recovery after 7 days was 94.3 +or- 4.9% URINE; FOOD ADDITIVES	Walson, P.D. Carter, D.E. Ryerson, B.A. Clark, D. 1981 Food and Cosmetics Toxicology 19:687-690

D00607 (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6332 Urine	Ingestion	Radiometry	6	0.031-0.088% of dose	0.045 +or- 0.021% of dose	7 day cumulative excretion after 50 uCi dose. Fecal recovery of 102.5 +or- 1.7% after 7 days indicates minimal intestinal absorption Healthy 22-32 yr olds URINE; FOOD ADDITIVES	Walson, P.D. Carter, D.E. Ryerson, B.A. Clark, D. 1981 Food and Cosmetics Toxicology 19:687-690

Ergosta-5,22-dien-3beta-ol (8 CI)
Ergosta-5,22-dien-3-ol, (3beta,22E)- (9 CI)
474-67-9
C28-H46-O
MW 398.74

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6333 Blood, cells	Ingestion	TLC GC/MS	3	1.3-2.9 ug/g	2.2 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterodemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

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Ergosta-5,22-dien-3beta-ol (8 CI)
Ergosta-5,22-dien-3-ol, (3beta,22E)- (9 CI)
474-67-9
C28-H46-O
MW 398.74

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6334 Blood, plasma	Ingestion	TLC GC/MS	9	Not detectable-1.8 ug/ml	Not applicable	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 447 mg/day or 634 mg/day 8 normal 23-47 yr old men, 1 hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

Ergosta-5,24(28)-dien-3beta-ol (8 CI)
Ergosta-5,24(28)-dien-3-ol (3beta)- (9 CI)
474-63-5
C28-H46-O
MW 398.74

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6335 Blood, cells	Ingestion	TLC GC/MS	3	7.2-12.3 ug/g	9.1 ug/g	Total noncholesterol sterols in diet, 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 634 mg/day 2 normal men, one 66 yr old hypercholesterolemic woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284
6336 Blood, plasma	Ingestion	TLC GC/MS	9	5.2-51.0 ug/ml	15.6 ug/ml	Total noncholesterol sterols in diet, 282 mg/day for 3-4 wk (6 subjects) or 393 mg/day for 3-4 wk (2 subjects) or 8 wk (1 subject). Total sterols in diet, 447 mg/day or 634 mg/day 8 normal 23-47 yr old men, 1 hypercholesterolemic 66 yr old woman ADULTS; BLOOD PLASMA; ERYTHROCYTES; CHOLESTEROLS; DIETS; FOODS	Connor, W.E. Lin, D.S. 1981 Gastroenterology 81:276-284

Ethane, 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
Benzene, 1-chloro-2-(2,2-dichloro-1-(4-chlorophenyl)ethyl)- (9 CI)
53-19-0
C14-H10-Cl4
MW 320.05, MP 76-78 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6337 Blood, plasma	Ingestion	GC		a) Not given b) Not given c) Not given d) Not given e) Not given f) 3.8-9.8 ug/ml g) 7-16.5 ug/ml h) 8.5-23 ug/ml	a) 2.8 ug/ml b) 2.7 ug/ml c) 3.0 ug/ml d) 1.7 ug/ml e) 0.5 ug/ml f) 6.1 ug/ml g) 12 ug/ml h) 16.2 ug/ml	a) In milk, 14 patients b) In chocolate, 10 patients c) In granules, 12 patients d) In tablets, 9 patients e) In peanut oil/water emulsion, 6 patients f) In tablets, 8 patients g) In peanut oil/water emulsion, 8 patients h) In milk, 6 patients Vehicles of administration a)-e) mean levels in first 10 hr period after 2 g. 5 hr levels also given f)-h) 1.75-4 g/day for 30-60 days, total dose 200 g d) significantly lower than a), b), and c) but significantly higher than e) f) Significantly lower than g) and h) Estimated from graph Patients treated for disseminated adrenocortical cancer or pituitary dependent Cushing's syndrome, Leiden, The Netherlands Nausea and borborygmus when administered in chocolate or emulsion NETHERLANDS; DISEASES; SARCOMAS; BLOOD PLASMA; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY; DDD	Moolenaar, A.J. van Slooten, H. van Seters, A.P. Smeenk, D. 1981 Cancer Chemotherapy and Pharmacology 7:51-54

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
6338 Adipose		GC	a) 19 b) 9 c) 9	a) Not detected-1.03 ug/g b) 0.04-1.63 ug/g c) Not detected-0.01 ug/g	a) 0.16 +or- 0.26 ug/g b) 0.44 +or- 0.72 ug/g c) Not given	a) Torreon, Mexico. Agricultural region with high pesticide use (9 samples >0.01 ug/g) b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (8 samples >0.01 ug/g) c) Puebla. Industrial and traditional agricultural region with low pesticide use levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6339 Blood		GC	100	a) Not detected-432.7 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 5.7 +or- 7.7 ppb b) 4.9 +or- 7.7 ppb c) 7.4 +or- 8.2 ppb d) 4.8 +or- 6.7 ppb e) 15.7 +or- 62.1 ppb f) 18.9 +or- 9.5 ppb g) 8.2 +or- 9.5 ppb	a) All subjects b) 60 subjects, age 18-25 yr c) 40 subjects, age 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Maternal blood, collected 8-12 hr before parturition b) and c) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6340 Blood, fetal		GC	100	a) Not detected-48.2 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 7.1 +or- 16.1 ppb b) 5.8 +or- 9.2 ppb c) 8.0 +or- 14.8 ppb d) 6.5 +or- 11.1 ppb e) 8.4 +or- 11.6 ppb f) 6.2 +or- 8.4 ppb g) 7.3 +or- 25.7 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6341 Placenta		GC	100	a) Not detected-93.3 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 8.3 +or- 9.9 ppb b) 9.0 +or- 11.3 ppb c) 7.1 +or- 7.5 ppb d) 7.1 +or- 9.8 ppb e) 10.5 +or- 15.9 ppb f) 12.7 +or- 17.2 ppb g) 6.9 +or- 8.3 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery d) and e), f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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
6342 Adipose		GC	a) 19 b) 9 c) 9	a) Not detected-2.54 ug/g b) 0.21-3.54 ug/g c) Not detected-3.09 ug/g	a) 0.82 +or- 0.89 ug/g b) 1.08 +or- 1.13 ug/g c) 0.48 +or- 0.92 ug/g	a) Torreon, Mexico. Agricultural region with high pesticide use (12 samples >0.01 ug/g) b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (8 samples >0.01 ug/g) c) Puebla. Industrial and traditional agricultural region with low pesticide use (5 samples >0.01 ug/g) Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269
6343 Blood		GC	100	a) Not detected-433.6 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 17.3 +or- 37.8 ppb b) 15.3 +or- 42.4 ppb c) 21.5 +or- 28.8 ppb d) 21.7 +or- 39.7 ppb e) 23.7 +or- 14.3 ppb f) 42.2 +or- 86.9 ppb g) 24.4 +or- 34.4 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Maternal blood, collected 8-12 hr before parturition f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6344 Blood, fetal		GC	100	a) Not detected-140.0 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 12.1 +or- 17.1 ppb b) 7.3 +or- 17.2 ppb c) 22.1 +or- 12.3 ppb d) 14.8 +or- 18.3 ppb e) 17.0 +or- 23.0 ppb f) 17.0 +or- 26.2 ppb g) 13.7 +or- 14.5 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery b) and c) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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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
6345 Placenta		GC	100	a) Not detected-93.3 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 18.1 +or- 20.8 ppb b) 14.6 +or- 22.2 ppb c) 23.4 +or- 38.5 ppb d) 18.8 +or- 18.0 ppb e) 20.7 +or- 22.1 ppb f) 23.0 +or- 20.2 ppb g) 20.9 +or- 34.1 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery b) and c) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDI; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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
6346 Blood	Inhalation	GC	10	a) Not given b) Not given c) Not given d) Not given	a) 0.27 +or- 0.04 g/l b) 0.75 +or- 0.07 g/l c) 0.68 +or- 0.10 g/l d) 0.72 +or- 0.18 g/l	a) 0.4 g/kg, 10 subjects b) 0.8 g/kg, 10 subjects c) 0.8 g/kg, 10 subjects d) 0.8 g/kg, 10 subjects Mean peak levels after single dose. Healthy 21-26 yr olds, wt 65-82 kg Psychophysiological functions impaired. Deleterious effects of m-xylene and alcohol usually additive. Antagonistic effects on body balance at the higher xylene level FINLAND; ADULTS; BLOOD; DRUGS; ALCOHOLS; ALCOHOLIC BEVERAGES; ATMOSPHERE; INHALATION; SOLVENTS	Savolainen, K. 1980 Acta Pharmacologica et Toxicologica 46(5):366-372
6347 Breath		GC/MS	28	4-15 ng/l	7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogencus constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Ethylene glycol, dinitrate (8 CI)
1,2-Ethanediol, dinitrate (9 CI)
628-96-6
C2-H4-N2-O6
MW 152.07, MP -20 C, BP 114 C (explodes)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6348 Blood	Dermal	GC-EC	16	a) 2-145 ng/ml b) 40-123.3 ng/ml	a) Not given b) Not given	a) 3 hr after start of work. Not detected prior to work b) Morning and afternoon samples, every other day for 5 days. Morning levels generally higher. Range of means Data also by sex and occupation Workers at dynamite factory, Japan Fall in blood pressures, headaches INDUSTRIAL CHEMICALS; JAPAN; SEX; BLOOD; URINE; NITRATES; BLOOD PRESSURE; HEALTH HAZARDS; INDUSTRIES; OCCUPATIONAL HAZARDS	Fukuchi, Y. 1981 International Archives of Occupational and Environmental Health 48:339-346
6349 Urine	Dermal	GC-EC	3	4.3-37.7 ng/ml	Not given	Morning and afternoon samples, every other day for 5 days Range of means Workers at dynamite factory, Japan Fall in blood pressures, headaches INDUSTRIAL CHEMICALS; JAPAN; SEX; BLOOD; URINE; NITRATES; BLOOD PRESSURE; HEALTH HAZARDS; INDUSTRIES; OCCUPATIONAL HAZARDS	Fukuchi, Y. 1981 International Archives of Occupational and Environmental Health 48:339-346

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
6350 Blood	Inhalation	GC/MS	1	Not given	4.4 mg/100 ml	Autopsy. Acute exposure in dry cleaning machine. Tests for levels in urine and stomach contents negative. Tests for alcohol and other drugs negative. 33 yr old AUTOPSIES; CASE HISTORIES; BLOOD; BRAIN; LUNGS; CHLORINATED HYDROCARBONS	Lukaszewski, T. 1979 Clinical Toxicology 15(4):411-415
6351 Brain	Inhalation	GC/MS	1	Not given	36 mg/100 g	Autopsy. Acute exposure in dry cleaning machine. Tests for levels in urine and stomach contents negative. Tests for alcohol and other drugs negative. 33 yr old AUTOPSIES; CASE HISTORIES; BLOOD; BRAIN; LUNGS; CHLORINATED HYDROCARBONS	Lukaszewski, T. 1979 Clinical Toxicology 15(4):411-415

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Ethylene, 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
6352 Lung	Inhalation	GC/MS	1	Not given	0.3 mg/100 g	Autopsy. Acute exposure in dry cleaning machine. Tests for levels in urine and stomach contents negative. Tests for alcohol and other drugs negative. 33 yr old AUTOPSIES; CASE HISTORIES; BLOOD; BRAIN; LUNGS; CHLORINATED HYDROCARBONS	Lukaszewski, T. 1979 Clinical Toxicology 15(4):411-415
6353 Milk		GC/MS	42	a) 0.9-6.3 ng/ml b) 4.0-43 ng/ml c) 0.7-26 ng/ml d) 0.1-2.5 ng/ml e) 0.4->19 ng/ml f) 0.1-43 ng/ml	a) 2.52 +or- 2.13 ng/ml b) 15.9 +or- 15.9 ng/ml c) 3.41 +or- 7.13 ng/ml d) 0.79 +or- 0.75 ng/ml e) 3.21 +or- 6.02 ng/ml f) 4.10 +or- 8.15 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies near chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.
6354 Urine	Inhalation		34	a) < 50 mg/l b) 50-100 mg/l c) 50-170 mg/l	a) Not given b) Not given c) Not given	a) 25 ppm or less in air b) 25-75 ppm in air c) 75-400 ppm in air No linear correlation, plateau reached at about 75 ppm Tetrachloroethylene workshop employees. JAPAN; URINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ATMOSPHERES; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Ikeda, M. 1977 Environmental Health Perspectives 21:239-245

Ethylene, trichloro- (8 CI)
Ethene, trichloro- (9 CI)
79-01-6
C2-H-C13
MW 131.40, MP 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
6355 Breath		GC	20	a) 59-1.9 ppm b) 29-2.4 ppm c) 16-0.7 ppm d) 2.8-0.18 ppm	a) Not given b) Not given c) Not given d) Not given	a) 0 and 16 hr postexposure, 200 ppm b) 0 and 16 hr postexposure, 200 ppm plus alcohol c) 0 and 16 hr postexposure, 100 ppm d) 0 and 14 hr postexposure, 20 ppm 7 1/2 hr exposure time Range of means, estimated from graph. Data also for other exposures. Healthy 19-46 yr olds in exposure chamber ADULTS; BREATH; ALCOHOLS; CHLORINATED HYDROCARBONS	Stewart, R.D. Hake, C.L. Peterson, J.E. 1974 Archives of Environmental Health 29:6-13
6356 Urine	Inhalation		51	a) 0-0.9 mg/l b) Not given c) Not given	a) Not given b) 84 mg/l c) 421 mg/l	a) No exposure b) 10 ppm in air, fiducial range (p=0.10) 58-122 mg/l c) 50 ppm in air, fiducial range (p=0.10) 292-608 mg/l Total trichloro compounds (including Ottmetabolites trichloroethanol and trichloroacetic acid). Linear correlation established. Trichloroethylene workshop employees JAPAN; URINE; CHLORINATED HYDROCARBONS; INDUSTRIAL ATMOSPHERES; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Ikeda, M. 1977 Environmental Health Perspectives 21:239-245

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6357 Adipose		GC	a) 19 b) 9 c) 9	a) 2.15-133.50 ug/g b) 0.65-10.50 ug/g c) Not detected-5.71 ug/g	a) 18.36 +or- 33.27 ug/g b) 6.05 +or- 3.49 ug/g c) 2.65 +or- 2.35 ug/g	a) Torreon, Mexico. Agricultural region with high pesticide use (19 samples >0.01 ug/g b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (9 samples >0.01 ug/g) c) Puebla. Industrial and traditional agricultural region with low pesticide use (7 samples >0.01 ug/g) Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269

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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
6358 Blood		GC	100	a) 2.0-324.8 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 18.8 +or- 19.6 ppb b) 14.4 +or- 19.2 ppb c) 27.6 +or- 38.5 ppb d) 14.3 +or- 13.9 ppb e) 28.2 +or- 50.7 ppb f) 23.6 +or- 56.9 ppb g) 24.7 +or- 34.4 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 cases, urban Maternal blood, collected 8-12 hr before parturition b) and c), d) and e) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDI; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6359 Blood, fetal		GC	100	a) 1.0-850 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 15.8 +or- 31.5 ppb b) 12.3 +or- 8.8 ppb c) 23.1 +or- 24.6 ppb d) 35.3 +or- 139.5 ppb e) 20.5 +or- 28.4 ppb f) 15.4 +or- 25.9 ppb g) 22.8 +or- 46.7 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 43 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDI; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
6360 Milk		GC/MS	5	a) 45-73 ng/ml b) 38-101 ng/ml c) 38-101 ng/ml	a) 59 ng/ml b) 78 ng/ml c) 71 ug/ml	a) Pittsburgh, PA, 2 samples b) Charleson, WV, 3 samples c) Total, a)-b) Selected samples Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

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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
6361 Placenta		GC	100	a) Not detected-234.7 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 22.0 +or- 31.0 ppb b) 16.0 +or- 24.9 ppb c) 31.3 +or- 30.2 ppb d) 27.5 +or- 46.4 ppb e) 32.9 +or- 39.6 ppb f) 30.6 +or- 42.5 ppb g) 29.3 +or- 42.3 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery b) and c) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 *Archives of Toxicology* 48:127-134

Ferritins
9007-73-2
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6362 Blood, serum		RIA	a) 6 b) 6	a) 36.9-3409 ng/ml b) 3.4-65.9 ng/ml	a) 1286 ng/ml b) 319 ng/ml	a) Subjects with increased Fe stores b) Subjects with normal Fe stores Serum ferritin levels did not reflect tissue Fe levels Liver biopsy best diagnostic method. Family with precirrhotic hemochromatosis CHELATING AGENT; GENETIC STUDIES; CASE HISTORIES; LIVER DISEASES; METAL POISONING; BLOOD SERUM; LIVER; URINE; IRON	Feller, E.R. Pont, A. Wands, J.R. Carter, E.A. Foster, G. Kourides, I.A. Isselbacher, K.J. 1977 New England Journal of Medicine 296(25):1422-1426
6363 Blood, serum			86	a) 17-350 ug/l b) 21-270 ug/l c) 16-340 ug/l d) 26-170 ug/l e) 13-500 ug/l f) 80-900 ug/l g) Not given	a) 90 ug/l b) 100 ug/l c) 75 ug/l d) 45 ug/l e) 235 +or- 54 ug/l f) 290 +or- 72 ug/l g) 333 +or- 199 ug/l	a) 38 Ethiopian mothers b) 23 non-privileged women from a), mean Fe intake 200 mg/day c) 15 privileged women from a), mean Fe intake slightly less than 200 mg/day d) 10 Swedish mothers, Fe supplement during pregnancy e) Cord blood, 15 Ethiopian newborns of group c) mothers f) Cord blood, 10 Swedish newborns of group d) mothers g) Cord blood, 5 newborns of Fe-deficient group c) mothers a) and d) differed, P<0.001. b) and c) not significantly different. Ethiopian non-privileged (mean age 19.7 yr) and privileged (mean age 23.1 yr) mothers. Swedish mothers (mean age 29.8 yr). Ethiopian privileged newborns (mean wt 3356 g, mean gestation 40.7 wk). Swedish newborns (mean wt 3871 g, mean gestation 39.4 wk). ETHIOPIA; ADULTS; SWEDEN; NEWBORN; ANEMIA; BLOOD SERUM; IRON; METALS; DIETS; FOODS; PREGNANCY	Gebre-Medhin, M. Birgegard, G. 1981 Scandinavian Journal of Haematology 27:247-252

Fluoride
16984-48-8
F
AtW 18.9984

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6364 Blood, serum			8	0.044-0.076 ppm	0.051	Rural Chinese CHINA; BLOOD SERUM; MEASUREMENT METHODS; FLUORIDE; FLUORINE COMPOUNDS; RURAL AREAS	Belisle, J. 1981 Science 212:1509-1510
6365 Teeth		ISE	a) 51 b) 61 c) 71	a) Not given b) Not given c) Not given	a) 3,364 ppm b) 4,179 ppm c) 2,036 ppm Adjusted for depth	a) Sodium fluoride varnish (Duraphat), 2.2% fluoride b) Silane fluoride varnish (Fluor Protector), 0.7% fluoride c) No topical fluoride treatment Minute portion of enamel dissolved away to measure fluoride content a) and b) 6 mo after 5th semi-annual application (mean number applications, 4.7) Exposed to fluoridated drinking water water (1.0-1.2 ppm) since birth Fluoridated toothpastes commonly used (69%) Fluoride content decreased with increasing depth a) and b) significantly different 13-15 yr olds, Finland FINLAND; CHILDREN; TEETH; DENTISTRY; IN VIVO ANALYSIS; FLUORIDE; BIOACCUMULATION; DRINKING WATER; POPULATION EXPOSURE	Seppa, L. Luoma, H. Hausen, H. 1982 Caries Research 16:7-11
6366 Urine	Ingestion		a) 10	a) Not given b) 2.5-2.9 mg/day c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 8.0 mg b) Not given c) 2.8 mg/day d) 2.2 mg/day e) 2.5 mg/day (63%) f) 7.5 mg/day (54%) g) 14.0 mg/day (56%) h) 21.0 mg/day (21.0%)	a) 18-day excess excretion after retention of 114 mg b) 3.9-4.3 mg/day plus 200-2200 mg/day Ca and 800-1400 mg/day P. Fluoride retention unaffected at 14 mg/day dose c) Dose 4.4 mg/day for 26 days. Net absorption 96% d) Dose 5.4 mg/day plus 30 ml aluminum hydroxide for 22 days. Net absorption 41% due to increased excretion of fluoride in feces e) 4 mg/day for 28 days f) 14 mg/day for 32 days g) 25 mg/day for 90 days h) 44 mg/day for 76 days ADULTS; FECES; URINE; COMPARATIVE EVALUATIONS; REVIEW; FLUORIDE	Spencer, H. Osis, D. Lender, M. 1981 Science of the Total Environment 17:1-12

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
6367 Blood, serum			8	0.008-0.017 ppm	0.0106 ppm	Organic form Rural Chinese not exposed to fluorochemicals CHINA; BLOOD SERUM; MEASUREMENT METHODS; FLUORIDE; FLUORINE COMPOUNDS; RURAL AREAS	Belisle, J. 1981 Science 212:1509-1510

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6368 Liver			30	0.06-1.4 ug/g wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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
6369 Breath		GC/MS	28	0.27-3.6 ng/l	1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Glycerol (8 CI)
1,2,3-Propanetriol (9 CI)
56-81-5
C3-H8-O3
MW 92.09, MP 17.9 C (also reported as +19.8 C), BP 290 C, VP 0.0025 mm Hg at 50 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6370 Blood, serum	Injection	Enzymatic	9	1.48-5.83 mg/ml	Not given	Dose, 0.75-1.75 g/kg/2 hr. Steady-state levels. AUC 194.9-672.6 mg/min/ml 9-20 yr olds with Reye's syndrome Temporary renal disfunction and hemolysis in 2 patients ADULTS; CHILDREN; BLOOD SERUM; DRUG THERAPY; DRUGS	Nahata, M.C. Kerzner, B. McClung, H.J. Sherard, E.S. Hilty, M.D. 1981 Clinical Pharmacology and Therapeutics 29(6):782-787

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
6371 Hair		NA	56	0.0078X10(E-6)-105.22X10(E-6) g/cu cm	0.0645X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6372 Hair		NA		a) 0.01-0.78 ppm b) 0.01-0.22 ppm c) 0.01-0.64 ppm	a) 0.08 +or- 0.12 ppm b) 0.08 +or- 0.06 ppm c) 0.14 +or- 0.14 ppm	a) 12 cm length, 101 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

Hematite (8 CI)
Hematite [Fe2O3] (9 CI)
1317-60-8
Fe2-O3
MW 159.7

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6373 Lung	Inhalation		16	a) 4.15-10.11% dry wt b) 4.61-8.00% dry wt c) 1.99-4.95% dry wt d) 1.11-2.75% dry wt	a) Not given b) Not given c) Not given d) Not given	a) Complicated pneumoconiosis, large massive lesions b) Complicated pneumoconiosis, moderate massive lesions c) Complicated pneumoconiosis, small massive lesions d) Simple pneumoconiosis, no massive lesions Exposure levels not reported. Rock miners LUNGS; IRON; METALS; MINING; OCCUPATIONAL HAZARDS	Guest, L. 1981 Analyst 106:663-675

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
6374 Breath		GC/MS	28	0.9-4.5 ng/l	2.1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Heptane, 2,2-dimethyl-
1071-26-7
C9-H20
MW 128.25, MP -113 C, BP 130 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6375 Breath		GC/MS	28	0.5-2.5 ng/l	1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6376 Breath		GC/MS	28	0.3-1.8 ng/l	0.7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6377 Breath		GC/MS	28	0.18-1.7 ng/l	0.6 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6378 Breath		GC/MS	28	2.7-8 ng/l	4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6379 Breath		GC/MS	28	2-10 ng/l	4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244
6380 Urine	Inhalation	GC	41	a) <0.4-21.7 mg/l b) <0.1-1.2 mg/l c) 0.7-17.5 mg/l d) 0.7-11.5 mg/l	a) 5.4 mg/l b) 0.19 mg/l c) 3.7 mg/l d) 3.3 mg/l	a) 2,5-Hexanedione b) 2-Hexanol c) 2,5-Dimethylfuran d) gamma-Valerolactone Metabolites of n-hexane found in workers exposed to 32-500 mg/cu m (mean 182 mg/cu m) commercial hexane Workers in shoe factories. INDUSTRIAL CHEMICALS; ITALY; ADULTS; URINE; INDUSTRIAL AREAS; INHALATION; METABOLITES; OCCUPATIONAL HAZARDS; SOLVENTS	Perbellini, L. Brugnone, F. Faggionato, G. 1981 British Journal of Industrial Medicine 38:20-26

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
6381 Breath		GC/MS	28	0.55-3.5 ng/l	1.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6382 Breath		GC/MS	28	3.5-18 ng/l	8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6383 Breath		GC/MS	28	1.5-9.5 ng/l	3.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Hexane, 3,4-dimethyl-
583-48-2
C8-H18
MW 114.23, BP 117.72 C, VP 10 mm Hg at 11.3 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6384 Breath		GC/MS	28	1.7-5.5 ng/l	3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6385 Breath		GC/MS	28	0.19-0.32 ng/l	0.27 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6386 Blood	Ingestion	ISE	1	Not applicable	3.8 mg/dl	Ingestion of unknown amount of 192 mg/dl solution. Autopsy data 57 yr old, epileptic and alcoholic, found dead in residence ADULTS; AUTOPSIES; BLOOD; LIVER; URINE; MEASUREMENT METHODS; IODINE	Clark, M.N. 1981 Clinical Toxicology 18(7):807-811
6387 Hair		NA		a) 0.3-13 ppm b) 0.8-7.6 ppm c) 0.66-8.3 ppm	a) 2.2 +or- 2.5 ppm b) 2.2 +or- 1.9 ppm c) 3.0 +or- 2.5 ppm	a) 12 cm length, 80 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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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
6388 Liver	Ingestion	ISE	1	Not applicable	3.42 mg/dl	Ingestion of unknown amount of 192 mg/dl solution. Autopsy data 57 yr old, epileptic and alcoholic, found dead in residence ADULTS; AUTOPSIES; BLOOD; LIVER; URINE; MEASUREMENT METHODS; IODINE	Clark, M.N. 1981 Clinical Toxicology 18(7):807-811
6389 Urine		NA	6	0.089-0.741 ug/ml	Not given	Precision < 6%. Minimum detectable level 0.05 ug/ml URINE; MEASUREMENT METHODS; IODINE	Blotcky, A.J. Duven, D.M. Grauer, W.M. Rack, E.P. 1974 Analytical Chemistry 46(7):838-842
6390 Urine	Ingestion	ISE	1	Not applicable	1.0 mg/dl	Ingestion of unknown amount of 192 mg/dl solution. Autopsy data 57 yr old, epileptic and alcoholic, found dead in residence ADULTS; AUTOPSIES; BLOOD; LIVER; URINE; MEASUREMENT METHODS; IODINE	Clark, M.N. 1981 Clinical Toxicology 18(7):807-811

Iridium
7439-88-5
Ir
AtW 192.22, MP 2450 C, BP approximately 4500 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6391 Hair		NA	1	3.0X10(E-6)-17.0X10(E-6) g/cu cm	Not given	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289

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
6392 Adrenal gland		ES	7	Not given	230 +or- 71 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6393 Aorta		ES	7	Not given	110 +or- 51 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6394 Blood, serum			a) 6 b) 6	a) 190-330 ug/dl b) 54-175 ug/dl	a) 259 ug/dl b) 116 ug/dl	a) Subjects with increased Fe stores b) Subjects with normal Fe stores Serum levels did not reflect tissue levels Liver biopsy best diagnostic method Family with precirrhotic hemochromatosis CHELATING AGENT; GENETIC STUDIES; CASE HISTORIES; LIVER DISEASES; METAL POISONING; BLOOD SERUM; LIVER; URINE; IRON	Feller, E.R. Pont, A. Wands, J.R. Carter, E.A. Foster, G. Kourides, I.A. Isselbacher, K.J. 1977 New England Journal of Medicine 296(25):1422-1426
6395 Blood, whole		X-Ray Spectrometry	27	Not given	384 ppm	Precision 7% BLOOD; MEASUREMENT METHODS; COPPER; IRON; METALS; RUBIDIUM; SELENIUM; ZINC	Bearse, R.C. Close, D.A. Malanify, J.J. Umbarger, C.J. 1974 Analytical Chemistry 46(4):499-503

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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
6396 Bone		ES	5	Not given	390 +or- 160 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6397 Hair		NA	60	35-100 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6398 Hair		NA		a) 19-260 ppm b) 43-262 ppm c) 35-166 ppm d) 40-178 ppm	a) 102 +or- 50 ppm b) 110 +or- 54 ppm c) 91 +or- 40 ppm d) 99 +or- 40 ppm	a) 12 cm length, 96 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 25 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6399 Hair		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 19.0 ug/g b) 9.8 ug/g c) 19.0 ug/g d) 9.6 ug/g e) 13.8 ug/g f) 11.4 ug/g	a) Subject 1, unwashed hair b) Subject 1, after 12 successive acetone washes c) Subject 2, unwashed hair d) Subject 2, after 12 successive acetone washes e) Subject 3, unwashed hair f) Subject 3, after 12 successive washes in sodium lauryl sulfate a), c), e) 6-10 determinations, each subject. Data also for other procedures and washing agents. for other procedures and washing agents. HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; IRON; MANGANESE; ZINC	Salmela, S. Vuori, E. Kilpio, J.O. 1981 Analytica Chimica Acta 125:131-137

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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
6400 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 180-290 ppm c) 180-650 ppm d) Not applicable e) Not applicable Dry wt	a) 240 +or- 38 ppm b) 235 ppm c) 357 ppm d) 180 ppm e) 200 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6401 Intestine		ES	10	Not given	170 +or- 75 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6402 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 170-340 ppm c) 160-410 ppm d) Not applicable e) Not applicable Dry wt	a) 320 +or- 110 ppm b) 255 ppm c) 293 ppm d) 690 ppm e) 390 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6403 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 350-1100 ppm c) 350-4600 ppm d) Not applicable e) Not applicable Dry wt	a) 1100 +or- 970 ppm b) 725 ppm c) 1900 ppm d) 1800 ppm e) 660 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6404 Liver		AAS	a) 5 b) 6	a) 800-2500 ug/100 mg b) 50-500 ug/100 mg Dry wt	a) 1450 ug/100 mg b) 217 ug/100 mg Dry wt	a) Subjects with increased Fe stores b) Subjects with normal Fe stores Liver biopsy best diagnostic method. Family with precirrhotic hemochromatosis CHELATING AGENT; GENETIC STUDIES; CASE HISTORIES; LIVER DISEASES; METAL POISONING; BLOOD SERUM; LIVER; URINE; IRON	Feller, E.R. Pont, A. Wands, J.R. Carter, E.A. Foster, G. Kourides, I.A. Isselbacher, K.J. 1977 New England Journal of Medicine 296(25):1422-1426
6405 Liver		NA	30	70-210 ug/g	Not given	Category 2 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (non-pollutant trace element monitored for "normal" levels) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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
6406 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 360-2000 ppm c) 920-4200 ppm d) Not applicable e) Not applicable Dry wt	a) 740 +or- 180 ppm b) 1180 ppm c) 2306 ppm d) 460 ppm e) 1300 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6407 Lung	Inhalation		16	a) 5.43-11.21% dry wt b) 5.82-9.68% dry wt c) 2.47-6.06% dry wt d) 1.47-3.25% dry wt	a) Not given b) Not given c) Not given d) Not given	a) Complicated pneumoconiosis, large massive lesions b) Complicated pneumoconiosis, moderate massive lesions c) Complicated pneumoconiosis, small massive lesions d) Simple pneumoconiosis, no massive lesions Exposure levels not reported. Rock miners LUNGS; IRON; METALS; MINING; OCCUPATIONAL HAZARDS	Guest, L. 1981 Analyst 106:663-675
6408 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 1200-1900 ppm d) Not applicable e) Not applicable Dry wt	a) 1800 +or- 640 ppm b) 800 ppm c) 1600 ppm d) 940 ppm e) 600 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6409 Nail		NA	66	120-1080 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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
6410 Pancreas		ES	5	Not given	160 +or- 53 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6411 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1200-6800 ppm c) 660-10000 ppm d) Not applicable e) Not applicable Dry wt	a) 2900 +or- 2600 ppm b) 4000 ppm c) 4353 ppm d) 4800 ppm e) 1900 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6412 Stomach		ES	10	Not given	170 +or- 75 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6413 Thyroid gland		ES	4	Not given	90 +or- 18 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6414 Tongue		ES	2	Not given	95 +or- 3.5 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6415 Trachea		ES	2	Not given	100 +or- 55 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6416 Urine	Injection		a) 6 b) 6	a) 536-21,047 ug/24 hr b) 272-888 ug/24 hr	a) 7063 ug/24 hr b) 696 ug/24 hr	a) Subjects with increased Fe stores b) Subjects with normal Fe stores Excretion after 1 g desferrioxamine, IM Chelatable Fe extraction did not reflect tissue levels Liver biopsy best diagnostic method. Family with precirrhotic hemochromatosis CHELATING AGENT; GENETIC STUDIES; CASE HISTORIES; LIVER DISEASES; METAL POISONING; BLOOD SERUM; LIVER; URINE; IRON	Feller, E.R. Pont, A. Wands, J.R. Carter, E.A. Foster, G. Kourides, I.A. Isselbacher, K.J. 1977 New England Journal of Medicine 296(25):1422-1426

Isobutyl alcohol (8 CI)
1-Propanol, 2-methyl- (9 CI)
78-83-1
C4-H10-O
MW 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
6417 Breath		GC/MS	28	0.18-1.5 ng/l	0.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6418 Breath		GC/MS	28	1.2-6.8 ng/l	3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6419 Breath		GC/MS	28	15-60 ng/l	20 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6420 Breath		GC/MS	28	0.18-7 ng/l	1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6421 Hair		NA	4	0.14X10(E-6)-0.27X10(E-6) g/cu cm	Not given	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6422 Hair		NA		a) 0.003-0.22 ppm b) 0.01-0.18 ppm c) 0.01-0.13 ppm	a) 0.05 +or- 0.03 ppm b) 0.06 +or- 0.06 ppm c) 0.04 +or- 0.04 ppm	a) 12 cm length, 98 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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
6423 Adrenal gland		ES	7	Not given	2.2 +or- 1.7 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6424 Aorta		ES	7	Not given	3.3 +or- 2.1 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6425 Blood	Ingestion Inhalation	AAS	1052	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) 11 ug/100 ml b) 8 ug/100 ml c) 9 ug/100 ml d) 8 ug/100 ml e) 13 ug/100 ml f) 9 ug/100 ml g) 13 ug/100 ml h) 9 ug/100 ml	a) Non-smokers, alcohol intake 6 units/wk, 111 men b) Non-smokers, alcohol intake 2 units/wk, 231 women c) Non-smokers, alcohol-abstraining, 13 men d) Non-smokers, alcohol-abstraining, 80 women e) Smokers (15-24 g tobacco/day), alcohol intake 12 units/wk, 161 men f) Smokers (15-24 g tobacco/day), alcohol intake 4 units/wk, 128 women g) Smokers (15-24 g tobacco/day), alcohol-abstaining, 7 men h) Smokers (15-24 g tobacco/day), alcohol-abstaining, 29 women Increased levels of smokers explained by increased alcohol intake Smoking contributed little to blood Pb in alcohol-abstaining cases 40-yr olds, resident of Copenhagen, 504 men, 548 women DENMARK; ADULTS; BLOOD; LEAD; ALCOHOLIC BEVERAGES; BIOACCUMULATION; SMOKING; TOBACCOS	Grandjean, P. Olsen, N.B. Hollnagel, H. 1981 International Archives of Occupational and Environmental Health 48:391-397
6426 Blood		AAS	286	a) 2-17 ug/100 ml b) 3-10 ug/100 ml c) 5-13 ug/100 ml d) Not given	a) 6.3 +or- 2.8 ug/100 ml b) 5.3 +or- 1.5 ug/100 ml c) 9.4 +or- 3.2 ug/100 ml d) 6.3 +or- 2.6 ug/100 ml	a) 64 children, urban area of Turku. Means from other urban areas, 6.0-6.7 ug/100 ml b) 8 children, rural area around Turku. Means from other rural areas, 4.0-9.3 ug/100 ml c) 5 children living < 500 m from Pb smelting plant, Tikkurila. Mean significantly higher than mean d) d) 259 children, not living near plant c) No significant difference between age groups, between urban and rural residence, or between areas with light and heavy traffic density. Finnish children, newborn-7 yr olds, (141 girls, 145 boys). 172 urban, 54 rural, 60 from town center where Pb smelter and paint factory operate. FINLAND; AGE; CHILDREN; BLOOD; LEAD; AUTOMOTIVE; AIR POLLUTION; BIOACCUMULATION; FUMES; GASOLINE; PAINTS; RURAL AREAS; SMELTERS; URBAN AREAS	Taskinen, H. Nordman, H. Hernberg, S. Engstrom, K. 1981 Science of the Total Environment 20:117-129
6427 Blood		AAS	a) 13 b) 9 c) 8 d) 10	a) Not given b) Not given c) Not given d) Not given	a) 0.95 +or- 0.49 umol/l b) 1.17 +or- 0.38 umol/l c) 0.77 +or- 0.29 umol/l d) 1.15 +or- 0.73 umol/l	a) Normal renal function, creatinine clearance >100 ml/min b) Mild renal failure, creatinine clearance 31-80 ml/min c) Moderate renal failure, creatinine clearance 16-30 ml/min d) Severe renal failure, creatinine clearance <16 ml/min Pb clearance was not influenced by degree of renal failure 18 men, 22 women, aged 18-72 yr KIDNEY DISEASES; BLOOD; URINE; LEAD	Campbell, B.C. Elliott, H.L. Meredith, P.A. 1981 Toxicology Letters 9:121-124

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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
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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6428 Blood	Ingestion		1	Not applicable	70 ug/100 ml	6 yr old with sickle-cell anemia, and peripheral neuropathy from paint ingestion. Dose unknown Muscular weakness, tremors, bilateral wrist and foot drop CHILDREN; METAL POISONING; NEUROLOGIC MANIFESTATIONS; BLOOD; URINE; LEAD; METALS	Anku, V.D. Harris, J.W. 1974 Journal of Pediatics 85(3):337-340
6429 Blood						Review Correlations between airborne Pb, blood and total levels of Pb in infants, children and adults are discussed UNITED KINGDOM; UNITED STATES; ADULTS; CHILDREN; FETUS; NEWBORN; RACIAL STUDIES; SEX; BLOOD; BODY; COMPARATIVE EVALUATIONS; REVIEW; LEAD; METALS; AUTOMOTIVE; AIR POLLUTION; GASOLINE; HEALTH HAZARDS; RURAL AREAS; URBAN AREAS	Stephens, R. 1981 International Journal of Environmental Studies 17: 73-83
6430 Blood			24	21.4-27.3 ug/100 ml	Not given	Range of means, analyses by 3 different laboratories UNITED KINGDOM; BLOOD; MEASUREMENT METHODS; LEAD; METALS; POPULATION EXPOSURE	Beasley, W.H. Braughton, P.M.E. Delves, H.T. Elwood, P.C. 1974 British Medical Journal 1(5907):576
6431 Blood						Review Effect of analytical variability on interpretation of blood Pb data from 4 population studies is discussed. 40% of variability in data attributed to analytical error, resulting in "false positive" measurements above threshold limits BLOOD; MEASUREMENT METHODS; REVIEW; LEAD; METALS	Lucas, J.M. 1981 American Industrial Hygiene Association Journal 42(2):88-96
6432 Blood		AAS	a) 48 b) 50 c) 81 d) 83 e) 73	a) 0-10 ug/100 ml b) 11-15 ug/100 ml c) 16-20 ug/100 ml d) 21-25 ug/100 ml e) 26-35 ug/100 ml	a) Not given b) Not given c) Not given d) Not given e) Not given	a) mean (arithmetic and geometric) delta-aminolevulinic acid dehydratase activity (ALA-d) 33.9 and 32.8 umol/min/l RBC b) ALA-d 33.5 and 31.7 umol/min/l RBC c) ALA-d 32.3 and 30.6 umol/min/l RBC d) ALA-d 31.6 and 29.3 umol/min/l RBC e) ALA-d 29.4 and 26.3 umol/min/l RBC Statistical significance depends on adequate choice of distribution function of ALA-d, interindividual variability, analytical limitations, and range of environmental exposure Healthy nonoccupationally exposed residents of Belgium BELGIUM; ADULTS; BLOOD; LEAD; LEVULINIC ACIDS; METALS; POPULATION EXPOSURE	Sartor, F. Rondia, D. 1981 International Archives of Occupational and Environmental Health 49:45-51

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6433 Blood		Fluorometry	a) 5 b) 49 c) 149 d) 192 e) 170 f) 67 g) 32 h) 8	a) 100-190 ug/l b) 200-290 ug/l c) 300-390 ug/l d) 400-490 ug/l e) 500-590 ug/l f) 600-690 ug/l g) 700-790 ug/l h) 800-890 ug/l	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) 300(200-400) ug/l b) 500(50-2000) ug/l c) 600(200-4000) ug/l d) 800(100-4000) ug/l e) 1200(100-5000) ug/l f) 1800(1000-7000) ug/l g) 2200(1200-5800) ug/l h) 3200(1100-5000) ug/l Mean (range) erythrocyte porphyrin Porphyrin levels (expressed as coproporphyrin I) estimated from graph Children suspected of chronic Pb ingestion plus nonselect children from acute-care clinics, St. Louis MISSOURI; CHILDREN; ANEMIA; LEAD POISONING; BLOOD; MEASUREMENT METHODS; LEAD	Hanna, T.L. Dietzler, D.N. Smith, C.H. Gupta, S. Zarkowsky, H.S. 1976 Clinical Chemistry 22(2):161-168
6434 Blood		Dithizone AAS	a) 201 b) 19 c) 11	a) 0-0.20 mg/l b) 0.21-0.40 mg/l c) >0.40 mg/l	a) Not given b) Not given c) Not given	a) 83 of 108 tile workshop workers, 82 of 87 tile factory workers, and 36 of 36 controls b) 15 of 108 tile workshop workers, and 4 of 87 tile factory workers c) 10 of 108 tile workshop workers, and 1 of 87 tile factory workers No Pb intoxication observed Iran IRAN; ADULTS; CHILDREN; BLOOD; INDUSTRIAL HYGIENE; LEAD; METALS; INDUSTRIAL ATMOSPHERES; OCCUPATIONAL HAZARDS	Sanai, G.H. Ziai, N. Ghiami, A. Ghasemi, A. 1975 Environmental Pollution and Human Health, from Proceedings of the International Symposium on Industrial Toxicology, S.H. Zaidi (Ed.), pp. 77-87
6435 Blood			31	51-38 ug/100 ml	Not given	Initial and 18 mo values during a Pb exposure abatement program. Range of means Children in Rochester, NY NEW YORK; CHILDREN; METAL POISONING; BLOOD; LEAD; POPULATION EXPOSURE	Klein, M.C. Schlageter, M. 1975 Pediatrics 56(1):298-303
6436 Blood	Ingestion Inhalation	MS	5	a) 0.17-0.25 ug/g b) 0.08-0.15 ug/g c) 0.14-0.19 ug/g	a) 19.4 ug/g b) Not given c) Not given	a) Mean total Pb, 5 patients. 142-366 ug/day b) Isotope tracer Pb, 3 patients, after 83-121 days of 105-204 ug/day Pb(204) nitrate (total daily intake same as prestudy). Tracer represented 40%-58% of total blood Pb suggesting input from other sources such as skeleton or atmosphere. c) Mean total Pb, 3 patients, 25-50 days after entering low-Pb, filtered-air room a),b) unfiltered air (0.4-2.1 ug Pb/cu m), c) filtered air (0.062-0.0087 ug Pb/cu m) b),c) estimated from graph. Estimated respiratory uptake 14 +or- 4 ug/day with exposures to 2 ug/cu m. AIR POLLUTION; DIETS; INHALATION; LEAD; BLOOD; HAIR; NAILS; SKIN; URINE	Rabinowitz, M.B. Wetherill, G.W. Kopple, J.D. 1977 Journal of Laboratory and Clinical Medicine 90(2):238-248

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6437 Blood		AAS	63	a) 7-30 ug/dl b) 31-59 ug/dl	a) Not given b) Not given	a) 16 13-25 mo olds, 14 36-59 mo olds, 5 60-75 mo olds b) 13 13-25 mo olds, 12 36-59 mo olds, 3 60-75 mo olds Results of neurobehavioral tests provide evidence of altered CNS function in young children with body burdens below 30 ug/dl Asymptomatic children, most from low-income, Black families in NC. Potential exposure through parents employed in Pb-related industries. NORTH CAROLINA; CHILDREN; CENTRAL NERVOUS SYSTEM DISEASES; LEAD POISONING; BLOOD; LEAD; BIOACCUMULATION; METALS	Otto, D.A. Benignus, V.A. Muller, K.E. Barton, C.N. 1981 Electroencephalography and Clinical Neurophysiology 52:229-239
6438 Blood	Inhalation Dermal		1	a) Not applicable b) Not applicable c) Not applicable	a) 3.7 umol/l b) 1.9 umol/l c) 4.3 umol/l	a) 1978 b) Dec 1979 c) Jan 1980 Source was German paint powder containing 472,750 ug/g Pb. Exposure when patient mixed powder and applied to canvas with hands. 27 yr old painter, United Kingdom General malaise, nausea, vomiting, colicky abdominal pain, constipation, muscle pain and bilateral wrist drop "Blue line" on upper gingival margin. Bone marrow sideroblastic. Hemoglobin 7.4 g/dl, no basophilic stippling. 12/79 measurements, Hb was 12.0 g/dl and stippling was seen. GERMANY; UNITED KINGDOM; ADULTS; LEAD POISONING; BLOOD; URINE; LEAD; COSMETICS; INHALATION; OCCUPATIONAL HAZARDS; PAINTS; METALS	Graham, J.A.G. Marton, D.G. Twort, C.H.C. 1981 Lancet 2(8256):1159-1160
6439 Blood		AAS	38	a) Not given b) 24-35 ug/dl	a) 24.68 +or- 6.72 ug/dl b) 29.6 ug/dl	a) 2.5 yr after exposure. 16 of 38 had chelation therapy b) 5 subjects from a) who had FEP levels > 50 ug/dl and serum Fe levels < 70 ug/dl Children, mean age 8.5 yr No correlation between blood pressure and Pb levels, FEP levels, or relative amount of Pb released following chelation 2-5 yr after initial exposure and therapy CHILDREN; BLOOD; URINE; LEAD; METALS; BLOOD PRESSURE	Friedlander, M.A. Brooks, C.T. Sheehe, P.R. 1981 Archives of Environmental Health 36(6):310-315

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6440 Blood		AAS	181	a) Not given b) Not given c) Not given d) Not given	a) 16.2 ug/100 ml b) 13.1 ug/100 ml c) 12.8 ug/100 ml d) 11.8 ug/100 ml	a) Children in town where Pb mine tailings were used in construction, and attending school A where tailings were used in playground b) Children in same town, and attending school B with no mine tailings in playground c) Farm children attending school A d) Farm children attending school B Boys had slightly higher levels than girls. Maximum level: 47 ug/100 ml. 5->14 yr olds, Australia 4 children with Pb levels > 25 ug/100 ml had free erythrocyte protoporphyrin level > 2.0 umol AUSTRALIA; CHILDREN; SEX; BLOOD; LEAD; METALS; HEALTH HAZARDS; MINING; RURAL AREAS	Heyworth, F. Spickett, J. Dick, M. Margetts, B. Armstrong, B. 1981 Medical Journal of Australia 2:232-234
6441 Blood			69	6-59 ug/dl	29.5 +or- 13.3 ug/dl	Increased levels generally produced increase in relative amplitude of synchronized EEG between P3 and P4 in all frequency bands Asymptomatic children, ages 13-75 mo, most from low-income, Black families in NC. Potential exposure through parents employed in Pb-related industries. AGE; CHILDREN; NEUROLOGIC MANIFESTATIONS; BLOOD; LEAD; METALS	Benignus, V.A. Otto, D.A. Muller, K.E. Seiple, K.J. 1981 Electroencephalography and Clinical Neurophysiology 52:240-248
6442 Blood			93	a) 17-52 ug/dl b) 16-52 ug/dl c) 23-38 ug/dl d) 22-48 ug/dl	a) 28.7 ug/dl b) 29.2 ug/dl c) 28.7 ug/dl d) 27.6 ug/dl	a) Participants in Pb blood survey 5 yr earlier, 75 subjects b) Same as a), but no longer attending local schools, 18 subjects c) Children with above average intelligence from a), 4 subjects d) Children with below average intelligence from a), 6 subjects Intelligence rated by classroom teacher 7-14 yr old children, United Kingdom UNITED KINGDOM; CHILDREN; LEAD; METALS; POPULATION EXPOSURE	Rigby, E.P. 1977 Lancet 2(8008):421
6443 Blood			a) 2 b) 8 c) 1 d) 1	a) 20-40 ug/100 ml b) 20-60 ug/100 ml c) 60-20 ug/100 ml d) 72-52 ug/100 ml	a) 30 ug/100 ml b) 42 ug/100 ml c) Not applicable d) Not applicable	a) No symptoms of Pb poisoning b) Biochemical, but no clinical symptoms of Pb poisoning c) Before and after chelation therapy. Exposure unknown. Antipyrine half-life decreased from 11.5 to 6.0 hr d) Before and after chelation therapy. Exposure unknown. Antipyrene half-life decreased from 14.0 to 9.6 hr Antipyrine half-life used as index of drug-metabolizing capacity which, for a) and b), was twice that of unexposed adults 1-7.5 yr olds CHILDREN; LEAD POISONING; METAL POISONING; BLOOD; BLOOD PLASMA; DRUGS; LEAD; METALS; METABOLISM	Alvares, A.P. Kapelner, S. Sassa, S. Kappas, A. 1975 Clinical Pharmacology and Therapeutics 17(2):179-183

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6444 Blood			1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 63 ug/dl b) 35 ug/dl c) 18 ug/dl d) 42 ug/dl	a) Pretreatment b) 2 wk after start of chelation therapy c) 3 mo after start of chelation therapy d) 2 wk after chelation therapy ended 20 hr/wk exposure to Pb at pistol range 44 yr old Frequent premature ventricular contractions. Hyperglycemia and glycosuria with no acetonuria. At age 28 mo patient had been treated with transfusion therapy for Pb poisoning with encephalopathy ADULTS; HEART DISEASES; LEAD POISONING; METAL POISONING; BLOOD; LEAD; METALS	Marcus, S.M. 1981 Veterinary and Human Toxicology 23(6):424-425
6445 Blood		AAS		a) 11.5-16.1 ug/dl b) 6.8-17.4 ug/dl c) 10.7-16.6 ug/dl d) Not given e) Not given f) Not given	a) 14.7 ug/dl b) 10 ug/dl c) 13.3 ug/dl d) 3.8 ug/dl e) 2.9 ug/dl f) 3.5 ug/dl	a) Americans, start of expedition b) Americans, at end of expedition c) Americans, 5 wk later d) Himalayan men e) Himalayan women f) Himalayan children a)-c) same 4 subjects, d)-f) 103 altogether Nepalese adults and 3-14 yr old children. Adult Americans on expedition in Nepal. LEAD; METALS; BIOACCUMULATION; RURAL AREAS; BLOOD; ASIA; ADULTS; CHILDREN	Piomelli, S. Corash, L. Corash, M.B. Seaman, C. Mushak, P. Glover, B. Padgett, R. 1980 Science 210(4474):1135-1137
6446 Blood			1	Not applicable	53 +or- 10 ug/100 g	Prospective blood donor Young, healthy subject employed in Pb-using industry ADULTS; BLOOD; LEAD; METALS; INDUSTRIES; OCCUPATIONAL HAZARDS	McGraw, T.E. 1981 Journal of the American Medical Association 246(22):2625
6447 Blood	Inhalation	AAS	65	17-78 ug/100 ml	36 +or- 13 ug/100 ml	Correlation with increased protoporphyrin levels, 58-557 ug/100 ml erythrocytes, and with decreased delta-aminolevulinic acid dehydratase activity, 1057-97 umol porphobilinogen/hr/l erythrocytes) 3-18 yr exposure to dust containing PbO, PbSO4 and Pb stearate Range estimated from graph Polyvinyl chloride factory workers, Japan INDUSTRIAL CHEMICALS; JAPAN; ADULTS; BLOOD; INDUSTRIAL MEDICINE; LEAD; METALS; PROTOPORPHYRINS; DUST; ENZYMES; INDUSTRIAL AREAS; OCCUPATIONAL HAZARDS	Tomokuni, K. Osaka, I. Ogata, M. 1975 Archives of Environmental Health 30(4):588-590

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6448 Blood	Ingestion Inhalation	Colorimetry	16	a) 18-40 ug/100g b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) Not applicable h) Not applicable i) Not applicable j) Not applicable k) Not applicable l) Not applicable m) Not applicable	a) 25 ug/100g b) 24 ug/100g c) 42 ug/100g d) 58 ug/100g e) 44 ug/100g f) 10 ug/100g g) 30 ug/100g h) 32 ug/100g i) 38 ug/100g j) 28 ug/100g k) 32 ug/100g l) 41 ug/100g m) 34 ug/100g	a) 16 controls, 31-602 days (mean 270 d), intake 97-334 ug/d (mean 181 ug/d) b) Dietary supplement 300 ug/d for 420 days, 1 subject c) Dietary supplement 1000 ug/d for 1095 days, 1 subject d) Dietary supplement 2000 ug/d for 646 days, 1 subject e) Dietary supplement 3000 ug/d for 113 days, 1 subject f) Postexposure (63 days), subject b) g) Postexposure (283 days), subject c) h) Postexposure (992 days), subject d) i) Postexposure (166 days), subject e) j) Mean 24-hr inhalation 1.9 ug/cu m, 112 days, 1 subject, (chamber level 0.010 mg/cu m, 9 hr/d, 3.5 d/wk), mean dietary intake 191 ug/d k) Mean 24-h inhalation 7.0 ug/cu m, 112 days, 1 subject, (chamber level 0.019 mg/cu m, 10.5 hr/d, 6 d/wk), mean dietary intake 248 ug/d l) Mean 24-h inhalation 19.3 ug/cu m, 112 days, 1 subject, (chamber level 0.157 mg/cu m, 6 hr/d, 3.5 d/wk), mean dietary intake 260 ug/d m) Mean 24-h inhalation 30.1 ug/cu m, 364 days, 1 subject, (chamber level 0.152 mg/cu m, 7 hr/d, 5 d/wk), mean dietary intake 71 ug/d Exposure periods j), k), and l) not long enough to reach equilibrium Parameter response due to chamber exposure not apparent at exposure rates <75 ug/cu m Dietary supplementation, Pb acetate solution, one-third with each meal 11 Caucasians, 5 Blacks. Age 22-55 yr (mean 34 yr) OHIO; ADULTS; BLOOD; LUNGS; URINE; LEAD; BIOACCUMULATION; DIETS; INHALATION; PARTICULATES; METALS	Gross, S.B. 1981 Journal of Toxicology and Environmental Health 8:333-377
6449 Blood						Review. Data on air-Pb levels and blood-Pb levels compared with levels predicted by two kinetics models. BLOOD; REVIEW; LEAD; METALS; INHALATION	Hammond, P.B. O'Flaherty, E.J. Gartside, P.S. 1981 Food and Cosmetics Toxicology 19:631-638
6450 Blood						Review. Because accepted threshold levels are thought to be too high, new upper limits for adults and children are proposed. LEAD; METALS; REVIEW; BLOOD	Waldron, H.A. 1974 Archives of Environmental Health 29:271-273

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6451 Blood		AAS	9	a) Not given b) Not given	a) 96.22 +or- 20.01 b) 57.44 +or- 7.83	a) Levels before treatment with penicillamine (PCA) for 1 wk (3 patients) or 2 wk (6 patients) b) Levels after treatment with PCA for 1 wk (3 patients) or 2 wk (6 patients) Adults employed in Pb recycling at battery cell factory. Exposures 2-108 months. Saturnism MEXICO; ADULTS; LEAD POISONING; BLOOD; INDUSTRIAL MEDICINE; LEAD; HEALTH HAZARDS; INDUSTRIAL PLANTS	Zuniga-Charles, M.A. Gonzalez-Ramirez, J.D. Molina-Ballesteros, G. 1981 Archives of Environmental Health 36(1):40-43
6452 Blood	Ingestion		a) 84 b) 106 c) 949 d) 98	a) 0.53-1.06 umol/l b) 0.81-1.33 umol/l c) 0.81-1.49 umol/l d) 0.74- 1.91 umol/l	a) Not given b) Not given c) Not given d) Not given	a) Hardwater area b) Softwater area, North Wales c) Softwater area, Scotland d) Softwater area, North Wales Range of means Drinking water levels less than 0.05->0.30 mg/l Volunteers, United Kingdom UNITED KINGDOM; ADULTS; BLOOD; LEAD; DRINKING WATER; HEALTH HAZARDS; WATER POLLUTION; SCOTLAND; WALES	Thomas, H.F. Elwood, P.C. Toothill, C. Morton, M. 1981 Lancet 1(8228):1047-1048
6453 Blood		AAS	635 deliveries	a) 2-23 ug/dl b) 1-25 ug/dl c) 1-25 ug/dl d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given k) Not given	a) 9.73 +or- 4.1 ug/dl b) 9.85 +or- 4.4 ug/dl c) 9.82 +or- 4.8 ug/dl d) 9.8 +or- 3.6 ug/dl e) 9.5 +or- 4.4 ug/dl f) 10.1 +or- 4.5 ug/dl g) 9.2 +or- 3.9 ug/dl h) 8.7 +or- 3.6 ug/dl i) 9.5 +or- 4.0 ug/dl j) 9.1 +or- 3.9 ug/dl k) 9.4 +or- 3.9 ug/dl	a) Cord blood, 154 cases b) Mothers, group a), 24 hr postpartum c) Newborns, group a), 24 hr postpartum d) Premature rupture of membranes, 56 cases e) 579 controls for d) f) Preterm delivery, 74 cases g) 561 controls h) Preclampsia, 32 cases i) 603 controls for h) j) Meconium staining, 123 cases k) 512 controls for j) d)-k) cord blood Range a), b), and c) estimated from graph a)-c) correlation coefficients highly significant d-k) no statistically significant differences Mothers age 13-40 yr (mean 21.1 yr), babies mean gestational age 39.6 wk, mean birth wt 3,211 g, indigent urban population, KY KENTUCKY; ADULTS; NEWBORN; BLOOD; LEAD; METALS; PORPHYRINS; ZINC; BIOACCUMULATION; POPULATION EXPOSURE; PREGNANCY; URBAN AREAS	Angell, N.F. Lavery, J.P. 1982 American Journal of Obstetrics and Gynecology 142(1):40-46

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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
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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6454 Blood		Colorimetry AAS	a) 472 b) 472	a) 8-50 ug/dl b) 6-40 ug/dl c) Not given	a) 20.2 +or- 1.48 ug/dl b) 15.2 +or- 1.40 ug/dl c) 16.6 +or- 1.34 ug/dl Geometric mean	a) 1967-69, colorimetric analysis b) 1978-80, AAS analysis c) 1978-80 data, as if determined by colorimetric analysis Estimated dietary intake 274 ug/day (1971) and 146 ug/day (1980) a) significantly higher than c) Ranges estimated from graph Preemployment examinations, identical age groups, United Kingdom UNITED KINGDOM; BLOOD; INDUSTRIAL MEDICINE; LEAD; METALS; BIOACCUMULATION; FOODS; FUEL ADDITIVES; POPULATION EXPOSURE	Oxley, G.R. 1982 International Archives of Occupational and Environmental Health 49:341-343
6455 Blood		AAS	377	a) Not given b) Not given c) Not given	a) 24.8 +or- 1.35 ug/dl b) 27.7 +or- 1.35 ug/dl c) 27.0 +or- 1.29 ug/dl Geometric mean	a) Children in owner occupied housing b) Children in private rental housing c) Children in public rental housing Housing occupied for at least 1 yr a)-c) no significant difference 11.7% of variation in blood-Pb level could be explained by socioeconomic status and measured environmental variables (soil, exterior and interior paint, house dust) 1-72 mo old children, CT, 1974-1977 CONNECTICUT; CHILDREN; BLOOD; LEAD; METALS; DRINKING WATER; DUST; PAINTS; POPULATION EXPOSURE; SOILS; URBAN AREAS	Stark, A.D. Quah, R.F. Meigs, J.W. DeLouise, E.R. 1982 Environmental Research 27:372-383
6456 Blood		AAS	a) 22 b) 21 c) 36 d) 44 e) 29	a) 9.7-40.5 ug/100 ml b) 15.5-43.3 ug/100 ml c) 7.6-24.8 ug/100 ml d) 5.3-17.7 ug/100 ml e) 5.9-21.4 ug/100 ml	a) 26.1 +or- 10.0 ug/100 ml b) 29.7 +or- 8.4 ug/100 ml c) 16.0 +or- 3.8 ug/100 ml d) 10.7 +or- 2.8 ug/100 ml e) 12.7 +or- 3.1 ug/100 ml	a) School 1, <1 km from smelter b) School 2, <1 km from smelter c) School 3, 2.5 km from smelter d) School 4, rural e) School 5, urban a) and b) significantly higher than c) d) and e) significantly lower than c) e) significantly higher than d) No evidence of neurophysiological dysfunction 11 yr olds living near ore smelter, rural and urban controls matched for age and socioeconomic status CHILDREN; BLOOD; COMPARATIVE EVALUATIONS; LEAD; METALS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL PLANTS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; RURAL AREAS; SMELTERS; URBAN AREAS	Guerit, J.M. Meulders, M. Amand, G. Roels, H.A. Buchet, J.P. Lauwerys, R. Bruaux, P. Claeys-Thoreau, F. Ducoffre, G. LaFontaine, A. 1981 Clinical Toxicology 18(11):1257-1267

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Lead
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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
6457 Blood	Ingestion Inhalation	AAS	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 72 ug/dl b) 127 ug/dl c) 74 ug/dl d) 84 ug/dl e) 103 ug/dl f) 27 ug/dl	a) March, 1979 b) 4 wk after a) c) 10 days after chelation therapy (1 g CaNa2-EDTA 2X/day for 5 days) d) 3 wk after c) (patient had not returned to work) e) 8 wk after c), June 1979, prior to 2nd course of chelation therapy f) September 1979 6 wk occupational exposure to powdered pigment containing 1% Pb. 43 yr old art conservator, NY Fatigue, dizziness, muscular pain in extremities, weakness of legs, burning pain in abdomen, epigastric discomfort, abdominal cramps, irritability, severe anemia, splenomegaly, and basophilic stippling of red blood cells NEW YORK; ADULTS; CASE HISTORIES; LEAD POISONING; METAL POISONING; BLOOD; URINE; DRUG THERAPY; LEAD; METALS; ZINC; HEALTH HAZARDS; INHALATION; OCCUPATIONAL HAZARDS; PIGMENTS	Fischbein, A. Wallace, J. Anderson, K.E. Sassa, S. Kon, S. Rohl, A.N. Kappas, A. 1982 Journal of the American Medical Association 247(14):2007-2009
6458 Blood			a) 72 b) 121 c) 73 d) 58	a) Not given b) Not given c) Not given d) Not given	a) 17.75 +or- 5.73 ug/100 ml b) 16.49 +or- 5.74 ug/100 ml c) 13.36 +or- 4.66 ug/100 ml d) 13.28 +or- 6.62 ug/100 ml	a) Crown Street School b) Bourke Street School c) Sacred Heart School d) Darlington School 7 subjects with levels of 30 ug/100 ml or more Children, grades 2-6, Sydney, Australia AUSTRALIA; CHILDREN; BLOOD; LEAD; METALS; POPULATION EXPOSURE	Nolan, B.M. 1982 Medical Journal of Australia 1(2):57
6459 Blood		AAS	296	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) 29.52 +or- 7.78 ug/100 ml b) 21.74 +or- 5.63 ug/100 ml c) 28.05 +or- 7.10 ug/100 ml d) 21.60 +or- 5.19 ug/100 ml e) 29.99 +or- 5.56 ug/100 ml f) 20.99 +or- 6.00 ug/100 ml g) 28.60 +or- 8.49 ug/100 ml h) 22.87 +or- 8.59 ug/100 ml i) 29.42 +or- 7.67 ug/100 ml j) 21.45 +or- 5.27 ug/100 ml k) 29.07 +or- 6.59 ug/100 ml l) 22.13 +or- 6.60 ug/100 ml	a) 228 traffic policemen (exposed) b) 68 office duty policemen (controls) c) 27 exposed, <21 yr old d) 8 controls, <21 yr old e) 36 exposed, 26-30 yr old f) 10 controls, 26-30 yr old g) 24 exposed, >36 yr old h) 8 controls, >36 yr old i) 85 exposed, employed <4 yr j) 26 controls, employed <4 yr k) 59 exposed, employed >8 yr l) 18 controls, employed >8 yr Exposed group levels significantly greater than controls No correlation between blood Pb and age or length of employment Iran IRAN; ADULTS; BLOOD; LEAD; METALS; AUTOMOTIVE; AIR POLLUTION; FUEL ADDITIVES; FUMES; GASOLINE; OCCUPATIONAL HAZARDS; URBAN AREAS	Farsam, H. Salari, G.H. Nadim, A. 1982 American Industrial Hygiene Association Journal 43:373-376

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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
6460 Blood		AAS	a) 21 b) 43	a) 53.0-91.0 ug/100 ml b) 17.0-29.5 ug/100 ml	a) 70.5 ug/100 ml b) Not given	a) Pb exposed workers b) Controls 5-95 percentile range Workers at secondary Pb smelting plant GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335
6461 Blood						Review. Children with asymptomatic blood Pb levels show impaired performances on intelligence tests CHILDREN; LEAD POISONING; METAL POISONING; NEUROLOGIC MANIFESTATIONS; BLOOD; REVIEW; LEAD; METALS; NEW YORK; MASSACHUSETTS	Needleman, H.L. Bellinger, D. Leviton, A. 1981 Pediatrics 68(6):894-896

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Lead
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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
6462 Blood		AAS		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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given t) Not given u) Not given	a) 6.8 ug/dl b) 7.5 ug/dl c) 8.7 ug/dl d) 8.7 ug/dl e) 10.0 ug/dl f) 37.4 ug/dl g) 45.1 ug/dl h) 50.9 ug/dl i) 44.6 ug/dl j) 27.6 ug/dl k) 46.3 ug/dl l) 44.4 ug/dl m) 45.9 ug/dl n) 46.8 ug/dl o) 35.3 ug/dl p) >50 ug/dl q) >50 ug/dl r) 54.7 ug/dl s) 67.5 ug/dl t) 52.3 ug/dl u) 45.9 ug/dl	a) Age 0-3 yr, 37 cases b) Age 3-5 yr, 10 cases c) Age 5-10 yr, 19 cases d) Age 10-15 yr, 6 cases e) Age >15 yr, 1 case f) Age 0-3 yr, 57 cases g) Age 3-5 yr, 11 cases h) Age 5-10 yr, 20 cases i) Age 10-15 yr, 10 cases j) Age >15 yr, 9 cases k) Age 0-3 yr, 92 cases l) Age 3-5 yr, 56 cases m) Age 5-10 yr, 37 cases n) Age 10-15 yr, 56 cases o) Age >15 yr, 138 cases (males 39.3 ug/dl, females 32.4 ug/dl) p) 63 of 99 children attending day care center in area with highest air Pb level q) 4 of 25 children attending day care center in area near smelter but west of prevailing wind currents r) 46 workers in smelter, lead refinery, and battery plant, 1978. Mean age 32.2 yr. Mean erythrocyte protoporphyrin (EP) 11.1 ug/g hemoglobin (Hb) s) 65 workers as in r), 1980. Mean age 35.9 yr. Mean EP 15.5 ug/g Hb. 7 cases blood-Pb (B-Pb) >100 ug/dl t) 43 children (<15 yr old), parents employed in smelter, refinery, and battery plant, 1980 u) 241 children (<15 yr old), parents not employed as in t), living in same city, 1980 a)-e) 73 nonexposed controls. Mean EP 3.9-0.9 ug/g Hb. Highest B-Pb, 19 ug/dl f)-j) 107 of 321 exposed area residents, 1978, with EP >8 ug/g Hb. Mean EP 12.0-8.1 ug/g Hb. Mean air Pb level, 14.3 ug/cu m. 7 cases B-Pb, 73-88 igd : k)-l) 379 exposed area residents, 1980. Mean EP 9.65-5.3 ug/g Hb. Mean air Pb level,23.8 ug/cu m f)-l) Data excludes workers and families in lead-related industries. Residents of Kosovska Mitrovica, site of largest land smelters in Europe, and Pristina, 40 km south of smelter (no Pb emissions), Yugoslavia Children with extremely high blood-Pb, neurological disorders, history of convulsions, learning disabilities, anorexia, and/or insomnia. Workers' symptoms consistent with poisoning. YUGOSLAVIA; ADOLESCENTS; ADULTS; CHILDREN; LEAD POISONING; METAL POISONING; BLOOD; LEAD; METALS; PROTOPORPHYRINS; AIR POLLUTION; BIOACCUMULATION; DUST; HEALTH HAZARDS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL PLANTS; INDUSTRIAL POLLUTION; INDUSTRIES; INHALATION; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; SMELTERS; URBAN AREAS	Popovac, D. Graziano, J. Seaman, C. Kaul, B. Cclakovic, B. Popovac, R. Osmani, I. Haxhiu, M. Begraca, M. Bozovic, Z. Mikic, M. 1982 Archives of Environmental Health 37(1):19-23

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Lead
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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
6463 Blood, cells	Ingestion		7	90-248 ug/100 ml	Not given	6-8 wk exposure to drinking water containing 8.4 mg/l of Pb. 19-36 yr old male employees of mining company, 27 yr old female cook and 3.5 yr old daughter, Australia Peripheral neuropathy, sweating, lethargy, abdominal pain, hypothermia, anorexia, nausea. AUSTRALIA; ADULTS; CHILDREN; METAL POISONING; BLOOD; LEAD; METALS; DRINKING WATER; GROUND WATER POLLUTION; OCCUPATIONAL HAZARDS	Stack, E.M. Cleland, L.G. 1974 Medical Journal of Australia 1(26):1038-1041
6464 Blood, cells			a) 1 b) 1	a) 176-76 ug/100 ml b) 73-96 ug/100 ml	a) Not applicable b) Not applicable	a) 2 and 221 hr after 100 mg. Pre-dose level 33 ug/100 ml b) 1 and 2 hr after 100 mg. Final measurement 82 ug/100 ml at 48 hr. Pre-dose level 37 ug/100 ml BLOOD; BLOOD PLASMA; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; LEAD; METALS; ERYTHROCYTES	deSilva, P.E. 1981 British Journal of Industrial Medicine 38:209-217
6465 Blood, cells		AAS	a) 8 b) 14 c) 5 d) 5	a) 29-60 ug % b) 102-178 ug % c) 168-208 ug % d) 102-120 ug %	a) 42 +or- 4 ug % b) 142 +or- 6 ug % c) 185 +or- 7 ug % d) 112 +or- 3 ug % S.E.	a) Normal controls b) Pb-exposed workers, no toxicity c) Pb-exposed workers with toxicity at high blood-Pb levels d) Pb-exposed workers with toxicity at low blood-Pb levels Pb smelting plant workers and unexposed industrial workers ADULTS; INDUSTRIAL DISEASES; LEAD POISONING; OCCUPATIONAL DISEASES; BLOOD; ERYTHROCYTES; INDUSTRIAL MEDICINE; LEAD; INDUSTRIAL PLANTS; SMELTERS	Raghavan, S.R.V. Culver, B.D. Gonick, H.C. 1981 Journal of Toxicology and Environmental Health 7:561-568
6466 Blood, plasma		AAS	a) 31 b) 48 c) 56 d) 17 e) 13	a) 1-7 ug/100 ml b) 1-7 ug/100 ml c) 1-7 ug/100 ml d) 1-6 ug/100 ml e) 1-4 ug/100 ml	a) 3.10 +or- 0.31 ug/100 ml b) 3.20 +or- 0.29 ug/100 ml c) 3.10 +or- 0.26 ug/100 ml d) 3.10 +or- 0.28 ug/100 ml e) 3.0 +or- 0.31 ug/100 ml	a) Normal controls (whole blood Pb 20-39 ug/100 ml) b) Probable Pb exposure (whole blood Pb 40-59 ug/100 ml) c) Certain Pb exposure (whole blood Pb 60-136 ug/100 ml) d) Children with sickle-cell disease (whole blood Pb 18-136 ug/100 ml) e) Neonates (whole blood Pb 12-34 ug/100 ml) Children from New York City NEW YORK; CHILDREN; METAL POISONING; BLOOD PLASMA; LEAD; METALS; POPULATION EXPOSURE; URBAN AREAS	Rosen, J.F. Zarate-Salvador, C. Trinidad, E.E. 1974 Journal of Pediatrics 84(1):45-48

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Lead
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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
6467 Blood, plasma	Ingestion		a) 1 b) 1 c) 18 d) 12 e) 20 f) 27 g) 22 h) 4	a) 4.90-0.69 ug/100 ml b) 1.69-0.66 ug/100 ml c) 0.14-0.57 ug/100 ml d) 0.17-0.84 ug/100 ml e) 0.26-1.16 ug/100 ml f) 0.38-1.48 ug/100 ml g) 0.48-3.96 ug/100 ml h) 1.64-3.42 ug/100 ml	a) Not applicable b) Not applicable c) 0.27 +or- 0.11 ug/100 ml d) 0.48 +or- 0.22 ug/100 ml e) 0.69 +or- 0.25 ug/100 ml f) 0.99 +or- 0.40 ug/100 ml g) 1.43 +or- 0.77 ug/100 ml h) 2.64 +or- 0.78 ug/100 ml	a) 2 hr and 221 hr after 100 mg. Pre-dose level 0.57 ug/100 ml b) 2 and 48 hr after 100 mg. 1.59 ug/100 ml at 1.0 hr. Pre-dose level 0.39 ug 100/ml c) Erythrocyte Pb <39 ug/100 ml d) Erythrocyte Pb 40-79 ug/100 ml e) Erythrocyte Pb 80-119 ug/100 ml f) Erythrocyte Pb 120-159 ug/100 ml g) Erythrocyte Pb 160-179 ug/100 ml h) Erythrocyte Pb >200 ug/100 ml Combined data in c)-h) for Pb workers and non-occupationally exposed subjects BLOOD; BLOOD PLASMA; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; LEAD; METALS; ERYTHROCYTES	deSilva, P.E. 1981 British Journal of Industrial Medicine 38:209-217
6468 Blood, whole			a) 1 b) 1	a) 78-37 ug/100 ml b) 36-46 ug/100 ml	a) Not applicable b) Not applicable	a) 2 and 221 hr after 100 mg. Pre-dose level 16 ug/100 ml b) 1 and 2 hr after 100 mg. Final measurement 38 ug/100 ml at 48 hr. Pre-dose level 18 ug/100 ml BLOOD; BLOOD PLASMA; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS; LEAD; METALS; ERYTHROCYTES	deSilva, P.E. 1981 British Journal of Industrial Medicine 38:209-217
6469 Body						Review Correlations between airborne Pb, blood and total levels of Pb in infants, children and adults are discussed UNITED KINGDOM; UNITED STATES; ADULTS; CHILDREN; FETUS; NEWBORN; RACIAL STUDIES; SEX; BLOOD; BODY; COMPARATIVE EVALUATIONS; REVIEW; LEAD; METALS; AUTOMOTIVE; AIR POLLUTION; GASOLINE; HEALTH HAZARDS; RURAL AREAS; URBAN AREAS	Stephens, R. 1981 International Journal of Environmental Studies 17: 73-83
6470 Bone		ES	5	Not given	6.0 +or- 3.6 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Lead
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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
6471 Bone		NA	a) 7 b) 5	a) 6-82 ppm b) 2.4-4.9 ppm	a) 15 ppm b) 2.85 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6472 Bone		MS	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 0.71 ppm b) 1.4 ppm c) 0.16 ppm d) 0.11 ppm e) 2.7 ppm f) 1.1 ppm Dry wt	a) Mandible, Hauca Negra site, recently exposed, pre-ceramic, pre-metallurgical, date 4500-3000 yr before present (bp) b) Femur, Guanape cemetery, specimens exposed on surface 30 yr, post-ceramic, proto-metallurgical, date 3000-2500 yr bp c) Mandible, Hauca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Mandible, another person, site c) e) Mandible, another person, site c) f) Vertebra, mummy of wealthy female Egyptian, Ptolemic period, 2200 yr bp Ratio atomic Pb to atomic Ca in bones of Peruvians buried 1600 yr was 3X10(E-8), compared to 2100-3500X10(E-8) in bones of present-day residents of England and the United States. Specimens from Viru Valley, Peru and Egypt EGYPT; PERU; UNITED KINGDOM; UNITED STATES; BONES; TEETH; BARIUM; CALCIUM; LEAD; BIOACCUMULATION	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951
6473 Breath	Inhalation	Colorimetry	a) 1 b) 1 c) 1 d) 1	a) 39.2-52.0% b) 38.3-73.8% c) 21.4-39.0% d) 46.0-47.0%	a) 44.4 +or- 4.4% b) 47.0 +or- 9.0% c) 31.4 +or- 5.9% d) 46.5 +or- 0.7%	a) Chamber level 0.010 mg/cu m, 9 measurements b) Chamber level 0.019 mg/cu m, 12 measurements c) Chamber level 0.157 mg/cu m, 15 measurements d) Chamber level 0.288 mg/cu m, 2 measurements % of dose retained (amount inhaled less amount exhaled, divided by amount inhaled, times 100%) Particle size 50% <or=0.05 um, 90% <or= 0.17 um generated by burning tetraethyl lead mixed with propane or natural gas to produce sesquioxide particles 11 Caucasians, 5 Blacks. Age 22-55 yr (mean 34 yr) OHIO; ADULTS; BLOOD; LUNGS; URINE; LEAD; BIOACCUMULATION; DIETS; INHALATION; PARTICULATES; METALS	Gross, S.B. 1981 Journal of Toxicology and Environmental Health 8:333-377

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Lead
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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
6474 Hair		AAS	220	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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given	a) 8.4 ppm b) 7.3 ppm c) 7.3 ppm d) 5.7 ppm e) 10.3 ppm f) 9.9 ppm g) 10.6 ppm h) 6.9 ppm i) 6.2 ppm j) 5.7 ppm k) 8.7 ppm l) 5.4 ppm m) 15.8 ppm n) 8.1 ppm o) 8.96 ppm p) 6.75 ppm q) 6.75 ppm r) 13.26 ppm s) 15.5 ppm t) 15.7 ppm u) 9.0 ppm v) 6.1 ppm w) 6.5 ppm x) 5.0 ppm y) 8.1 ppm z) 6.6 ppm Geometric	a) Mothers (100) b) Infants of a) c) Mothers, 16-24 yr old (47) d) Infants of c) e) Mothers, 25-30 yr old (29) f) Infants of e) g) Mothers, 31-42 yr old (28) h) Infants of g) i) Mothers, parity 1 (42) j) Infants of i) k) Mothers, parity 2 (24) l) Infants of k) m) Mothers parity 3 (19) n) Infants of m) o) Normotensive mothers (73) p) Infants of o) q) Hypertensive mothers (13) r) Infants of q) s) Mothers with preterm births (9) t) Infants of s) u) Mothers with underweight newborn (10) v) Infants of u) w) Mothers with malformed infants (9) x) Infants of w) y) Mothers with normal infants (63) z) Infants of y) i) and m), s) and y), and t) and z) significantly different Residents of eastern France No positive association for Pb in mothers and infants. Levels in mothers of parity 3 or greater, higher than in primiparous mothers. Inverse relationship between Pb in mothers' hair and gestational age. FRANCE; ADULTS; AGE; NEWBORN; HAIR; COMPARATIVE EVALUATIONS; CADMIUM; LEAD; METALS; BIOACCUMULATION; BLOOD PRESSURE; PREGNANCY; RURAL AREAS	Huel, G. Boudene, C. Ibrahim, M.A. 1981 Archives of Environmental Health 36(5):221-227
6475 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.45-1.9 ppm c) 0.90-1.7 ppm d) Not applicable e) Not applicable Dry wt	a) 0.82 +or- 0.47 ppm b) 1.2 ppm c) 1.3 ppm d) 0.54 ppm e) 0.35 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6476 Intestine		ES	10	Not given	1.6 +or- 0.67 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6477 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.8-2.8 ppm c) 1.8-4.0 ppm d) Not applicable e) Not applicable Dry wt	a) 1.3 +or- 0.95 ppm b) 1.8 ppm c) 2.6 ppm d) 1.6 ppm e) 0.35 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6478 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 2.4-4.0 ppm c) 2.6-12 ppm d) Not applicable e) Not applicable Dry wt	a) 2.0 +or- 1.2 ppm b) 3.2 ppm c) 8.2 ppm d) 7.3 ppm e) 1.1 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6479 Liver		ASV LSV	30	0.8-2.3 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6480 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 4.0-4.2 ppm c) 2.6-8.7 ppm d) Not applicable e) Not applicable Dry wt	a) 1.3 +or- 0.66 ppm b) 4.1 ppm c) 5.8 ppm d) 6.4 ppm e) 0.95 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6481 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 4.1-5.8 ppm d) Not applicable e) Not applicable Dry wt	a) 4.0 +or- 0.67 ppm b) 5.5 ppm c) 5.2 ppm d) 6.5 ppm e) 1.7 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Lead
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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
6482 Pancreas		ES	5	Not given	0.78 +or- 0.19 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6483 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 2.5-4.5 ppm c) 3.1-6.5 ppm d) Not applicable e) Not applicable Dry wt	a) 1.9 +or- 1.2 ppm b) 3.5 ppm c) 4.6 ppm d) 5.5 ppm e) 1.1 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6484 Stomach		ES	10	Not given	1.6 +or- 0.67 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Lead
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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
6485 Teeth		AAS	a) 54 b) 23 c) 38 d) 22 e) 7 f) 48 g) 38 h) 24 i) 19 j) 9 k) 27 l) 15	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) 17.8 ppm b) 16.8 ppm c) 10.8 ppm d) 19.9 ppm e) 9.8 ppm f) 10.1 ppm g) 8.9 ppm h) 5.1 ppm i) 11.0 ppm j) 7.9 ppm k) 10.8 ppm l) 6.2 ppm Geometric	a) Urban, Pb paint exposure, incisor b) Same as a), cuspid c) Same as a), molar d) Urban, recent public housing, but within Pb paint area, incisor e) Same as d), molar f) Urban, no Pb paint problem, incisor g) Same as f), cuspid h) Same as f), molar i) Suburban, incisor j) Same as i) molar k) Industrial area, incisor l) Same as k), molar Deciduous teeth Children from metropolitan St. Louis, MO. MISSOURI; CHILDREN; TEETH; LEAD; METALS; URBAN AREAS	Lockeretz, W. 1975 Archives of Environmental Health 30:583-587
6486 Teeth		MS	a) 1 b) 1 c) 1 d) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 0.10 ppm b) 0.23 ppm c) 0.04 ppm d) 0.06 ppm Dry wt	a) Hauca Negra site, recently exposed, pre-ceramic, pre-metallurgical, date 4500-3000 yr before present (bp) b) Guanape cemetery, specimens exposed on surface 30 yr, post-ceramic, proto-metallurgical, date 3000-2500 yr bp c) Huaca Gallinazo site, metallurgical, date 2000-1400 yr bp d) Another person, site c) Enamel Specimens from Viru Valley, Peru EGYPT; PERU; UNITED KINGDOM; UNITED STATES; BONES; TEETH; BARIUM; CALCIUM; LEAD; BIOACCUMULATION	Ericson, J.E. Shirahata, H. Patterson, C.C. 1979 New England Journal of Medicine 300(17):946-951
6487 Thyroid gland		ES	4	Not given	0.74 +or- 0.49 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Lead
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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
6488 Tongue		ES	2	Not given	1.2 +or- 0.28 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6489 Trachea		ES	2	Not given	1.6 +or- 0.42 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6490 Urine		AAS	a) 13 b) 9 c) 8 d) 10	a) Not given b) Not given c) Not given d) Not given	a) 0.11 +or- 0.08 umol/24 hr b) 0.15 +or- 0.08 umol/24 hr c) 0.14 +or- 0.05 umol/24 hr d) 0.13 +or- 0.10 umol/24 hr	a) Normal renal function, creatinine clearance >100 ml/min b) Mild renal failure, creatinine clearance 31-80 ml/min c) Moderate renal failure, creatinine clearance 16-30 ml/min d) Severe renal failure, creatinine clearance <16 ml/min Pb clearance was not influenced by degree of renal failure 18 men, 22 women, aged 18-72 yr KIDNEY DISEASES; BLOOD; URINE; LEAD	Campbell, B.C. Elliott, H.L. Meredith, P.A. 1981 Toxicology Letters 9:121-124
6491 Urine			1	a) Not applicable b) Not applicable	a) 120 ug/l b) 6,000 ug/l	a) During hospital stay b) After stimulation test with Ca EDTA 6 yr old with sickle-cell anemia, and peripheral neuropathy due to paint ingestion. Muscular weakness, tremors, bilateral wrist and foot drop CHILDREN; METAL POISONING; NEUROLOGIC MANIFESTATIONS; BLOOD; URINE; LEAD; METALS	Anku, V.D. Harris, J.W. 1974 Journal of Pediatics 85(3):337-340

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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
6492 Urine	Ingestion			31-472 ug/24 hr	Not given	6-8 wk exposure to drinking water with 8.4 mg/l Pb 19-36 yr old male employees of mining company, 27 yr old female cook and 3.5 yr old daughter, Australia Peripheral neuropathy, sweating, lethargy, abdominal pain, hypothermia, anorexia, nausea. AUSTRALIA; ADULTS; CHILDREN; METAL POISONING; BLOOD; LEAD; METALS; DRINKING WATER; GROUND WATER POLLUTION; OCCUPATIONAL HAZARDS	Stack, E.M. Cleland, L.G. 1974 Medical Journal of Australia 1(26):1038-1041
6493 Urine	Ingestion Inhalation	MS	5	27-38 ug/day	32.6 ug/day	Output from subjects living in room with unfiltered air and ingesting diet containing 142-366 ug/day AIR POLLUTION; DIETS; INHALATION; LEAD; BLOOD; HAIR; NAILS; SKIN; URINE	Rabinowitz, M.B. Wetherill, G.W. Kopple, J.D. 1977 Journal of Laboratory and Clinical Medicine 90(2):238-248
6494 Urine	Inhalation Dermal		1	a) Not applicable b) Not applicable	a) 15,300 nmol/24 hr b) 300 nmol/24 hr	a) During 3.5 yr, periodic use of paint powder containing 472,750 ug/g Pb b) 3 mo after removal of exposure source 27 yr old painter, United Kingdom General malaise, nausea, vomiting, colicky abdominal pain, constipation, muscle pain and bilateral wrist drop "Blue line" on upper gingival margin. Bone marrow sideroblastic. Hemoglobin 7.4 g/dl, no basophilic stippling. 12/79 measurements, Hb was 12.0 g/dl and stippling was seen. GERMANY; UNITED KINGDOM; ADULTS; LEAD POISONING; BLOOD; URINE; LEAD; COSMETICS; INHALATION; OCCUPATIONAL HAZARDS; PAINTS; METALS	Graham, J.A.G. Maxton, D.G. Twort, C.H.C. 1981 Lancet 2(8256):1159-1160
6495 Urine		AAS	38	17-117 ug	50.7 +or- 29 ug	6 hr excretions after chelation (25 mg/kg oral penicillamine). Mean increase was 7.6 +or- 9.5 ug/dl. Subjects exposed to Pb 2-5 yr previously and 16 received chelation therapy then. Children, mean age 8.5 yr No correlation between blood pressure and Pb levels, FEP levels, or relative amount of Pb released following chelation 2-5 yr after initial exposure and therapy CHILDREN; BLOOD; URINE; LEAD; METALS; BLOOD PRESSURE	Frielander, M.A. Brooks, C.T. Sheebe, P.R. 1981 Archives of Environmental Health 36(6):310-315

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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
6496 Urine	Ingestion Inhalation	Colorimetry	16	a) 19-45 ug/d b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) Not applicable h) Not applicable i) Not applicable j) Not applicable k) Not applicable l) Not applicable m) Not applicable	a) 29 ug/d b) 32 ug/d c) 84 ug/d d) 109 ug/d e) 78 ug/d f) 18 ug/d g) 60 u/d h) 44 ug/d i) 33 ug/d j) 34 ug/d k) 39 ug/d l) 66 ug/d m) 78 ug/d	a) 16 controls, 31-602 days (mean 270d), intake 97-334 ug/d (mean 181 ug/d) b) Dietary supplement 300 ug/d for 420 days, 1 subject c) Dietary supplement 1000 ug/d for 1095 days, 1 subject d) Dietary supplement 2000 ug/d for 646 days, 1 subject e) Dietary supplement 3000 ug/d for 113 days, 1 subject f) Postexposure (63 days), subject b) g) Postexposure (283 days), subject c) h) Postexposure (992 days), subject d) i) Postexposure (166 days), subject e) j) Mean 24-h inhalation 1.9 ug/cu m, 112 days, 1 subject, (chamber level 0.010 mg/cu m, 9 hr/d, 3.5 d/wk), mean dietary intake 191 ug/d k) Mean 24-h inhalation 7.0 ug/cu m, 112 days, 1 subject, (chamber level 0.019 mg/cu m, 10.5 hr/d, 6 d/wk), mean dietary intake 248 ug/d l) Mean 24-hr inhalation 19.3 ug/cu m, 112 days, 1 subject, (chamber level 0.157 mg/cu m, 6 hr/d, 3.5 d/wk), mean dietary intake 260 ug/d m) Mean 24-hr inhalation 30.1 ug/cu m, 364 days, 1 subject, (chamber level 0.152 mg/cu m, 7 hr/d, 5 d/wk), mean dietary intake 71 ug/d Exposure periods j), k), and l) not long enough to reach equilibrium Parameter response due to chamber exposure not apparent at exposure rates <75 ug/cu m Dietary supplementation, Pb acetate solution, one-third with each meal 11 Caucasians, 5 Blacks. Age 22-55 yr (mean 34 yr) OHIO; ADULTS; BLOOD; LUNGS; URINE; LEAD; BIOACCUMULATION; DIETS; INHALATION; PARTICULATES; METALS	Gross, S.B. 1981 Journal of Toxicology and Environmental Health 8:333-377
6497 Urine	Ingestion Inhalation		1	Not applicable	30.7 mg	Total excreted during chelation therapy (1 g CaNa2-EDTA 2X/day for 5 days) Blood Pb before treatment, 127 ug/dl 43 yr old art conservator, NY Fatigue, dizziness, muscular pain in extremities, weakness of legs, burning pain in abdomen, epigastric discomfort, abdominal cramps, irritability, severe anemia, splenomegaly, and basophilic stippling of red blood cells NEW YORK; ADULTS; CASE HISTORIES; LEAD POISONING; METAL POISONING; BLOOD; URINE; DRUG THERAPY; LEAD; METALS; ZINC; HEALTH HAZARDS; INHALATION; OCCUPATIONAL HAZARDS; PIGMENTS	Fischbein, A. Wallace, J. Anderson, K.E. Sassa, S. Kon, S. Rohl, A.N. Kappas, A. 1982 Journal of the American Medical Association 247(14):2007-2009

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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
6498 Urine		AAS	a) 21 b) 43	a) 53.0-96.0 ug/g creatinine b) 6.1-29.8 ug/g creatinine	a) Not given b) Not given	a) Exposed b) Controls. Median 12.5 ug/g creatinine 5-95 percentile range Workers at secondary Pb smelting plant GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6499 Blood	Inhalation	GC	22	a) 7-8 umol/l b) 15-30 umol/l c) 30-40 umol/l d) 8-15 umol/l e) 15-50 umol/l f) 40-100 umol/l	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Constant 100 ppm, day 1, 6 subjects b) Constant 100 ppm, with intermittent exercise, day 1, 8 subjects c) Fluctuating 70-200 ppm (mean 100 ppm), with exercise, day 1, 8 subjects d) Same as a), day 5 e) Same as b), day 5 f) Same as e), day 5 Maximum levels in morning (3 hr exposure) and afternoon (3 hr exposure). On day 5 afternoon exposures were doubled (200 ppm in d) and e) and 130-400 (mean 200) ppm in f)) Estimated from graph Healthy 18-35 yr olds Impairment of body balance and increased reaction time INDUSTRIAL CHEMICALS; BREATH; XYLENE; INHALATION; BLOOD	Riihimaki, V. Savolainen, K. 1980 Annals of Occupational Hygiene 23:411-422

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6500 Blood	Inhalation	GC	10	a) Not given b) Not given c) Not given d) Not given	a) 22.1 +or- 2.5 umol/l b) 32.9 +or- 8.2 umol/l c) 40.7 +or- 12.9 umol/l d) 65.6 +or- 12.5 umol/l	a) 7.7 and 5.9 umol/l time-weighted average concentration in air (TWA), 5 subjects each exposure b) 5.9 umol/l TWA, 10 subjects c) 10.7 and 11.5 umol/l TWA, 5 subjects each exposure d) 11.9 umol/l TWA, 10 subjects Mean peak levels, 4 hr exposure periods Healthy 21-26 yr olds, wt 65-82 kg Psychophysiological functions impaired. Deleterious effects of m-xylene and alcohol usually additive. Antagonistic effects on body balance at the higher xylene level FINLAND; ADULTS; BLOOD; DRUGS; ALCOHOLS; ALCOHOLIC BEVERAGES; ATMOSPHERE; INHALATION; SOLVENTS	Savolainen, K. 1980 Acta Pharmacologica et Toxicologica 46(5):366-372
6501 Breath	Inhalation	GC	22	a) 1.8-0.008 umol/l b) 2.5-0.009 umol/l c) 2.0-0.005 umol/l d) 0.5 - 0.008 umol/l e) 0.4 - 0.005 umol/l f) 0.6 - 0.008 umol/l	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0 and 5 hr postexposure after constant 100 ppm, day 1, 6 subjects b) 0 and 16 hr postexposure after constant 100 ppm, with intermittent exercise, day 1, 8 subjects c) 0 and 16 hr postexposure after fluctuating 70-200 ppm (mean 100 ppm) with intermittent exercise, day 1, 8 subjects d) 0 and 6 hr, same as a), day 5, afternoon exposure 200 ppm e) 0 and 68 hr, same as b), day 5, afternoon exposure 200 ppm f) 0 and 45 hr, same as c), day 5, afternoon exposure 130-400 (mean 200) ppm Exposures 3 hr in morning and 3 hr in afternoon Estimated from graph Healthy 18-35 yr olds Impairment of body balance and increased reaction time INDUSTRIAL CHEMICALS; BREATH; XYLENE; INHALATION	Riihimaki, V. Savolainen, K. 1980 Annals of Occupational Hygiene 23:411-422
6502 Breath		GC/MS	28	0.07-2.5 ng/l	0.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6503 Breath	Inhalation		5	a) 51.0-67.5% b) 49.8-72.8%	a) 57.6% b) 58.9%	a) Phenobarbital pretreatment 2 mg/kg/day, oral, 11 days b) No phenobarbital pretreatment On 12th day a) and b) exposed to m-xylene vapors, 400 mg/cu m for 8 h % difference of mean levels in inspired and expired air for two time periods (hr 1-3 and hr 5-7) during exposure Healthy 46-55 yr olds INDUSTRIAL CHEMICALS; LUNGS; URINE; HYPNOTICS; SEDATIVES; BENZENES; ENZYMES; FUMES; INDUSTRIAL EMISSIONS; INHALATION; METABOLISM; METABOLITES; RATS	David, A. Flek, J. Frantik, E. Gut, I. Sedivec, V. 1979 International Archives of Occupational and Environmental Health 44:117-125
6504 Urine	Inhalation	GC	5	a) 0.7-0.9 g/8 hr b) 0.7-1.2 g/8 hr c) 1.0-1.3 g/24 hr d) 0.9-1.6 g/24 hr	a) 0.8 g/8 hr b) 0.9 g/8 hr c) 1.2 g/24 hr d) 1.3 g/24 hr	a) Excreted during 8 hr exposure, no pretreatment b) Excreted during 8 hr exposure, after 2 mg/kg/day phenobarbital, 11 days before exposure c) Excreted during 24 hr from beginning of exposure, no pretreatment d) Excreted during 24 hr from beginning of exposure, after 2 mg/kg/day phenobarbital, 11 days before exposure Exposure to m-xylene vapors, 400 mg/cu m for 8 hr Measured as m-methylbenzoic acid, metabolite Estimated from graph Phenobarbital had no effect on amount of excreted metabolite Healthy volunteers, 46-55 yrs old INDUSTRIAL CHEMICALS; LUNGS; URINE; HYPNOTICS; SEDATIVES; BENZENES; ENZYMES; FUMES; INDUSTRIAL EMISSIONS; INHALATION; METABOLISM; METABOLITES; RATS	David, A. Flek, J. Frantik, E. Gut, I. Sedivec, V. 1979 International Archives of Occupational and Environmental Health 44:117-125

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6505 Adrenal gland		ES	7	Not given	490 +or- 300 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6506 Aorta		ES	7	Not given	700 +or- 230 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6507 Blood, plasma		AAS	133	a) Not given b) Not given	a) 1.79 +or- 0.012 umol/l b) 1.6 +or- 0.2 umol/l	a) 102 healthy controls b) 31 patients with acute myocardial infarction BLOOD PLASMA; CARDIOVASCULAR DISEASES; HEART DISEASES; COPPER; MAGNESIUM; MANGANESE; ZINC	Zumkley, H. Bertram, H.P. Vetter, H. Tank, B. Wirth, W. 1980 Trace Substances in Environmental Health VIV, D.D. Hemphill, ed. pp 211-216
6508 Blood, serum		AAS	a) 26 b) 21 c) 52 d) 11 e) 10 f) 21 g) 10 h) 10 i) 10	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) 20.6 +or- 0.7 ppm b) 19.5 +or- 0.1 ppm c) 19.5 +or- 2.5 ppm d) 20.3 +or- 1.4 ppm e) 20.3 +or- 0.5 ppm f) 19.7 +or- 1.7 ppm g) 20.6 +or- 0.6 ppm h) 21.1 +or- 0.4 ppm i) 21.1 +or- 2.9 ppm	a) Lung and respiratory tract b) Gastrointestinal tract c) Breast d) Cervix e) Lymphatic leukemia f) Malignant melanomas g) Hodgkin's lymphoma h) Healthy volunteers i) Geriatric patients a)-g) type of cancer No significant difference between controls and cancer patients Cancer patients (15-81 yr olds), geriatric patients (65-81 yr olds), healthy volunteers (20-44 yr olds), UK UNITED KINGDOM; CARCINOMAS; LEUKEMIA; MELANOMAS; NEOPLASMS; SARCOMAS; BLOOD SERUM; CALCIUM; COPPER; MAGNESIUM; MANGANESE; METALS; ZINC; BIOINDICATORS	Capel, I.D. Pinnock, M.H. Williams, D.C. Hanham, I.W.F. 1982 Oncology 39:38-41

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6509 Bone		ES	5	Not given	1400 +or- 270 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6510 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 520-1300 ppm c) 350-1000 ppm d) Not applicable e) Not applicable Dry wt	a) 930 +or- 370 ppm b) 910 ppm c) 593 ppm d) 460 ppm e) 240 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6511 Intestine		ES	10	Not given	670 +or- 210 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6512 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 580-760 ppm c) 530-1000 ppm d) Not applicable e) Not applicable Dry wt	a) 670 +or- 140 ppm b) 670 ppm c) 763 ppm d) 550 ppm e) 200 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6513 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 610-830 ppm c) 570-1100 ppm d) Not applicable e) Not applicable Dry wt	a) 690 +or- 160 ppm b) 720 ppm c) 807 ppm d) 390 ppm e) 160 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6514 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 600-630 ppm c) 420-840 ppm d) Not applicable e) Not applicable Dry wt	a) 720 +or- 190 ppm b) 615 ppm c) 650 ppm d) 620 ppm e) 300 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6515 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 530-1100 ppm d) Not applicable e) Not applicable Dry wt	a) 1200 +or- 480 ppm b) 700 ppm c) 770 ppm d) 760 ppm e) 530 ppm Dry wt	a) Normal men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6516 Pancreas		ES	5	Not given	430 +or- 99 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6517 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 820-860 ppm c) 400-1300 ppm d) Not applicable e) Not applicable Dry wt	a) 730 +or- 170 ppm b) 840 ppm c) 733 ppm d) 710 ppm e) 230 ppm Dry wt	a) Normal men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6518 Stomach		ES	10	Not given	670 +or- 210 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6519 Thyroid gland		ES	4	Not given	390 +or- 99 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6520 Tongue		ES	2	Not given	770 +or- 250 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6521 Trachea		ES	2	Not given	690 +or- 140 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6522 Urine	Ingestion	AAS	2	a) Not given b) Not given c) Not given d) Not given	a) 170 +or- 6.9 mg/24 hr b) 210 +or- 10.5 mg/24 hr c) 185 +or- 4.4 mg/24 hr d) 235 +or- 6.9 mg/24 hr	a) Subject 1, intake 348 mg/24 hr, low fiber diet b) Subject 1, intake 650 mg/24 hr, high fiber diet c) Subject 2, intake 380 mg/24 hr, low fiber diet d) Subject 2, intake 724 mg/24 hr, high fiber diet Total dietary intake Means of 10 2-day periods 50% caloric intake from white bread in a) and c), and from high fiber, moderate phytate, local bread in b) and d) Both subjects in negative balance on high fiber diet. 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

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
6523 Adrenal gland		ES	7	Not given	0.79 +or- 0.11 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6524 Aorta		ES	7	Not given	0.39 +or- 0.06 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6525 Blood, plasma		AAS		a) Not given b) Not given	a) 0.011-0.078 umol/l b) 0.023 +or- 0.01 umol/l	a) Healthy controls b) 36 patients with acute myocardial infarction BLOOD PLASMA; CARDIOVASCULAR DISEASES; HEART DISEASES; COPPER; MAGNESIUM; MANGANESE; ZINC	Zumkley, H. Bertram, H.P. Vetter, H. Tank, B. Wirth, W. 1980 Trace Substances in Environmental Health VIV, D.D. Hemphill, ed. pp 211-216
6526 Blood, serum		AAS	a) 26 b) 21 c) 52 d) 11 e) 10 f) 21 g) 10 h) 10 i) 10	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) 0.007 +or- 0.001 ppm b) 0.009 +or- 0.002 ppm c) 0.008 +or- 0.002 ppm d) 0.006 +or- 0.002 ppm e) 0.009 +or- 0.001 ppm f) 0.011 +or- 0.004 ppm g) 0.007 +or- 0.001 ppm h) 0.008 +or- 0.001 ppm i) 0.007 +or- 0.005 ppm	a) Lung and respiratory tract b) Gastrointestinal tract c) Breast d) Cervix e) Lymphatic leukemia f) Malignant melanomas g) Hodgkin's lymphoma h) Healthy volunteers i) Geriatric patients a)-g) type of cancer No significant difference between controls and cancer patients Cancer patients (15-81 yr olds), geriatric patients (65-81 yr olds), healthy volunteers (20-44 yr olds), UK UNITED KINGDOM; CARCINOMAS; LEUKEMIA; MELANOMAS; NEOPLASMS; SARCOMAS; BLOOD SERUM; CALCIUM; COPPER; MAGNESIUM; MANGANESE; METALS; ZINC; BIOINDICATORS	Capel, I.D. Pinnock, M.H. Williams, D.C. Hanham, I.W.F. 1982 Oncology 39:38-41

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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
6527 Bone		ES	5	Not given	<2.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6528 Hair		NA	56	0.062X10(E-6)-43.14X10(E-6) g/cu cm	0.829X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6529 Hair		NA	59	2-3.7 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feimendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6530 Hair		NA		a) 0.2-19.8 ppm b) 0.08-13.6 ppm c) 0.2-17.2 ppm d) 0.2-7.5 ppm	a) 4.21 +or- 3.66 ppm b) 3.9 +or- 3.5 ppm c) 6.5 +or- 4.1 ppm d) 3.2 +or- 1.8 ppm	a) 12 cm length, 103 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 28 samples Levels in people near fossil fuel power station twice those from other areas. Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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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
6531 Hair		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 3.89 ug/g b) 2.74 ug/g c) 1.41 ug/g d) 1.16 ug/g e) 1.83 ug/g f) 1.25 ug/g	a) Subject 1, unwashed hair b) Subject 1, after 12 successive acetone washes c) Subject 2, unwashed hair d) Subject 2, after 12 successive acetone washes e) Subject 3, unwashed hair f) Subject 3, after 12 successive washes in sodium lauryl sulfate a), c) e), 6-10 determinations, each subject. Data also for other procedures and washing agents. HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; IRON; MANGANESE; ZINC	Salmela, S. Vuori, E. Kilpio, J.O. 1981 Analytica Chimica Acta 125:131-137
6532 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.73-2.9 ppm c) 1.0-2.9 ppm d) Not applicable e) Not applicable Dry wt	a) 0.67 +or- 0.27 ppm b) 1.8 ppm c) 1.8 ppm d) 0.49 ppm e) 0.51 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6533 Intestine		ES	10	Not given	1.1 +or- 0.47 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6534 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.95-4.4 ppm c) 1.1-3.3 ppm d) Not applicable e) Not applicable Dry wt	a) 1.5 +or- 0.67 ppm b) 2.7 ppm c) 2.0 ppm d) 0.90 ppm e) 0.64 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6535 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 2.3-7.6 ppm c) 3.0-4.6 ppm d) Not applicable e) Not applicable Dry wt	a) 4.4 +or- 1.8 ppm b) 5.0 ppm c) 3.8 ppm d) 2.1 ppm e) 0.69 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6536 Liver		NA	30	0.5-1.9 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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
6537 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.7-4.2 ppm c) 1.3-18 ppm d) Not applicable e) Not applicable Dry wt	a) 1.1 +or- 0.53 ppm b) 2.9 ppm c) 7.4 ppm d) 1.2 ppm e) 3.9 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6538 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 2.4-11 ppm d) Not applicable e) Not applicable Dry wt	a) 7.5 +or- 3.9 ppm b) 1.9 ppm c) 5.6 ppm d) 3.2 ppm e) 3.3 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6539 Nail		NA	58	2-11.7 ng/g	Not given	Range of means, estimated from graph, samples from 5 Egyptian cities from Aswan to Alexandria Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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
6540 Pancreas		ES	5	Not given	1.6 +or- 0.47 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Healta 36(4):155-165
6541 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.82-5.5 ppm c) 1.3-4.2 ppm d) Not applicable e) Not applicable Dry wt	a) 1.3 +or- 0.75 ppm b) 3.2 ppm c) 3.1 ppm d) 1.7 ppm e) 1.3 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6542 Stomach		ES	10	Not given	1.1 +or- 0.47 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6543 Thyroid gland		ES	4	Not given	0.44 +or- 0.11 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6544 Tongue		ES	2	Not given	0.43 +or- 0.06 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6545 Trachea		ES	2	Not given	0.37 +or- 0.11 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6546 Blood	Ingestion		1	Not applicable	251 ppb	Extrapolated from hair Hg level Subject had pica for paper, caused by Fe deficiency. She inadvertently consumed 191-341 ppb Hg daily. 46 yr old, Fe-deficient native (Indian or Inuit), Canada Occipital headaches, dizzy spells, tunnel vision, and red rash on upper extremities CANADA; CASE HISTORIES; METAL POISONING; NUTRITIONAL DEFICIENCIES; BLOOD; MERCURY; METALS; HEALTH HAZARDS; PICA	Olynyk, F. Sharpe, D.H. 1982 New England Journal of Medicine 306(17):1056-1057
6547 Blood		AAS	23	1.4-17.6 ug/100 ml	Not given	Chemical plant workers with average workplace time 8.25 yr 5-95 percentile range GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335
6548 Blood, cells		GC-EC	a) 28 b) 28	a) Not given b) Not given	a) 2.5 +or- 1.8 ng/g b) 1.4 +or- 1.2 ng/g	a) Maternal samples b) Fetal samples Significant difference between a) and b) ($p < 0.01$). Organic Hg levels similar for a) (3.0 +or- 2.1 ng/g), but significantly higher for b) (3.9 +or- 3.0 ng/g). Neither a) nor b) correlated with placental inorganic Hg levels Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6549 Blood, cells		GC	a) 28 b) 28	a) Not given b) Not given	a) 2.5 +or- 1.8 ng/g b) 1.4 +or- 1.2 ng/g	a) Maternal erythrocytes b) Fetal erythrocytes a) significantly higher than b) Patients residing in Cleveland, OH. PREGNANCY; MERCURY; MERCURY INORGANIC COMPOUNDS; METHYL RADICALS; BLOOD; PLACENTA; OHIO; FETUS; ERYTHROCYTES	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. Prochaska, A.L. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:182-188

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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
6550 Blood, plasma		GC-EC	a) 22 b) 22	a) Not given b) Not given	a) 1.7 +or- 1.4 ng/g b) 2.6 +or- 1.9 ng/g	a) Maternal samples b) Fetal samples Significantly different (p < 0.02) Both a) and b) significantly greater than corresponding organic Hg levels (0.4 +or- 0.2 and 0.4 +or- 0.3 ng/g, respectively) No correlation with inorganic Hg levels in placenta Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6551 Bone		NA	a) 7 b) 5	a) <0.02-0.10 ppm b) 0.04-0.096 ppm	a) 0.045 ppm b) 0.040 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6552 Brain		AAS	51	a) <5-26 ug/kg b) <5-22 ug/kg c) <5-26 ug/kg d) <5-17 ug/kg e) <5-17 ug/kg f) <5-16 ug/kg g) <5-16 ug/kg h) <5-14 ug/kg i) <5-16 ug/kg	a) <5 ug/kg b) <5 ug/kg c) 6.3 ug/kg d) <5 ug/kg e) <5 ug/kg f) <5 ug/kg g) <5 ug/kg h) <5 ug/kg i) <5 ug/kg Median	a) Total b) Men c) Women d) Total e) Men f) Women g) Total h) Men i) Women Cerebellum (a-c), cerebrum cortex (d-f) and cerebrum marrow (g-i) Autopsies, Germany GERMANY; AUTOPSIES; BRAIN; KIDNEYS; LIVER; MERCURY; METALS	Schiele, R. Freitag, E.M. Schaller, K.H. Schellmann, B. Weltle, D. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten, und Hygiene. Erste Abteilung. Originale Reihe B. Hygiene, Betriebshygiene, Praeventive Medizin 173:45-62
6553 Brain		AAS	82	a) 1.7-69.9 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 8.4 +or- 10.0 ug/kg b) 6.8 ug/kg c) 8.2 +or- 9.6 ug/kg d) 10.7 +or- 16.9 ug/kg e) 9.3 +or- 8.3 ug/kg f) 9.0 +or- 9.4 ug/kg g) 4.7 +or- 2.3 ug/kg h) 3.2 ug/kg S.E.	a) All samples b) 0-9 yr olds, 2 samples c) 40-49 yr olds, 6 samples d) 50-59 yr olds, 15 samples e) 60-69 yr olds, 21 samples f) 70-79 yr olds, 22 samples g) 80-89 yr olds, 14 samples h) 90-96 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363

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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
6554 Hair		NA	58	1.41-2.61 ug/g	1.85 ug/g	Range of means, 5 localities Residents of Iceland ADULTS; HAIR; ARSENIC; CADMIUM; MERCURY; METALS; SELENIUM; ZINC	Johannesson, T. Lunde, G. Steinnes, E. 1981 Acta Pharmacologica et Toxicologica 48:185-189
6555 Hair			a) 29 b) 44 c) 7 d) 8	a) 234-12,786 ug/kg b) 113-1,508 ug/kg c) 8,209-135,508 ug/kg d) 503-4,958 ug/kg	a) 1,038 ug/kg b) 355 ug/kg c) 29,673 ug/kg d) 2,683 ug/kg	a) Children, rural area b) Children, urban area c) Exposed workers d) Nonexposed workers 9-11 yr old children and employees at grain fungicide treatment facility, Czechoslovakia CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6556 Hair		NA	2	5.06X10(E-6)-10.16X10(E-6) g/cu cm	Not given	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6557 Hair			30	a) 14.8-154.6 nmol/g b) 12.1-99.6 nmol/g c) 0.9-16.3 nmol/g d) 1.1-15.0 nmol/g e) 10.5-143.9 nmol/g f) 11.0-90.4 nmol/g g) 9.0-127.5 nmol/g h) 11.0-55.5 nmol/g	a) 48.8 nmol/g b) 43.9 nmol/g c) 5.1 nmol/g d) 52.3 nmol/g e) 43.7 nmol/g f) 38.2 nmol/g g) 37.8 nmol/g h) 31.1 nmol/g	a) Males, total Hg, 15 washed 1970 samples, remeasured in 1981 b) Females, same as a) c) Males, inorganic Hg, 15 washed 1970 samples, remeasured in 1981 d) Females, same as c) e) Males, organic Hg, a) minus c) f) Females, organic Hg, b) minus d) g) Males, organic Hg, 15 unwashed samples, original 1970 measurements h) Females, same as g) Higher 1981 measurements attributed to different treatment of samples 2-61 yr olds, high fish consumption, Japan JAPAN; ADOLESCENTS; ADULTS; AGE; CHILDREN; SEX; HAIR; MERCURY; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; BIOACCUMULATION; FISHES; FOODS; POPULATION EXPOSURE	Suzuki, T. Yamamoto, R. 1982 Bulletin of Environmental Contamination and Toxicology 28:186-188

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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
6558 Kidney		AAS	51	a) <2.5-801 ug/kg b) <2.5-453 ug/kg c) <2.5-801 ug/kg	a) 96.0 ug/kg b) 95.5 ug/kg c) 99.9 ug/kg Median	a) Total b) Men c) Woman Autopsies, Germany GERMANY; AUTOPSIES; BRAIN; KIDNEYS; LIVER; MERCURY; METALS	Schiele, R. Freitag, E.M. Schaller, K.H. Schellmann, B. Weltle, D. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten, und Hygiene. Erste Abteilung. Originale Reihe B. Hygiene, Betriebshygiene, Praeventive Medizin 173:45-62
6559 Kidney		AAS	83	a) 4.3-944.0 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 90.4 +or- 130.2 ug/kg b) 158.1 ug/kg c) 39.4 +or- 30.6 ug/kg d) 131.6 +or- 238.2 ug/kg e) 61.0 +or- 62.8 ug/kg f) 123.7 +or- 146.7 ug/kg g) 93.5 +or- 118.7 ug/kg h) 58.0 ug/kg S.E.	a) All samples b) 0-9 yr olds, 2 samples c) 40-49 yr olds, 6 samples d) 50-59 yr olds, 15 samples e) 60-69 yr olds, 21 samples f) 70-79 yr olds, 23 samples g) 80-89 yr olds, 14 samples h) 90-96 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6560 Liver		AAS	51	a) <2.5-437 ug/kg b) <2.5-437 ug/kg c) 16-156 ug/kg d) <2.5-458 ug/kg e) <2.5-458 ug/kg f) 8-121 ug/kg	a) 58.0 ug/kg b) 55.5 ug/kg c) 62.0 ug/kg d) 54.0 ug/kg e) 58.5 ug/kg f) 55.0 ug/kg Median	a) Total b) Men c) Women d) Total e) Men f) Women Left (a-c) and right (d-f) lobes Autopsies, Germany GERMANY; AUTOPSIES; BRAIN; KIDNEYS; LIVER; MERCURY; METALS	Schiele, R. Freitag, E.M. Schaller, K.H. Schellmann, B. Weltle, D. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten, und Hygiene. Erste Abteilung. Originale Reihe B. Hygiene, Betriebshygiene, Praeventive Medizin 173:45-62
6561 Liver		AAS	30	0.005-0.25 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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
6562 Liver		AAS	87	a) 4.1-528.0 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 47.9 +or- 63.4 ug/kg b) 22.0 ug/kg c) 41.7 +or- 47.3 ug/kg d) 67.0 +or- 121.1 ug/kg e) 36.4 +or- 23.3 ug/kg f) 44.1 +or- 36.3 ug/kg g) 46.0 +or- 28.4 ug/kg h) 9.1 ug/kg S.E.	a) All samples b) 0-9 yr olds, 2 samples c) 40-49 yr olds, 6 samples d) 50-59 yr olds, 17 samples e) 60-69 yr olds, 21 samples f) 70-79 yr olds, 24 samples g) 80-89 yr olds, 15 samples h) 90-96 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6563 Lung		AAS	75	a) 2.0-280.0 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 25.3 +or- 37.6 ug/kg b) 21.0 ug/kg c) 16.0 +or- 25.3 ug/kg d) 26.4 +or- 26.2 ug/kg e) 23.8 +or- 28.2 ug/kg f) 33.3 +or- 61.7 ug/kg g) 18.5 +or- 14.3 ug/kg h) 18.1 ug/kg S.E.	a) All samples b) 0-9 yr olds, 2 samples c) 40-49 yr olds, 5 samples d) 50-59 yr olds, 14 samples e) 60-69 yr olds, 21 samples f) 70-79 yr olds, 20 samples g) 80-89 yr olds, 11 samples h) 90-96 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES, PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6564 Muscle		AAS	83	a) 0.9-45.0 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 7.2 +or- 9.3 ug/kg b) 7.1 ug/kg c) 8.7 +or- 15.0 ug/kg d) 9.9 +or- 13.5 ug/kg e) 6.8 +or- 7.4 ug/kg f) 7.5 +or- 9.6 ug/kg g) 4.3 +or- 1.9 ug/kg h) 1.8 ug/kg S.E.	a) All samples b) 0-9 yr olds, 2 samples c) 40-49 yr olds, 6 samples d) 50-59 yr olds, 15 samples e) 60-69 yr olds, 21 samples f) 70-79 yr olds, 23 samples g) 80-89 yr olds, 14 samples h) 90-96 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363

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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
6565 Pancreas		AAS	27	a) 1.6-259.0 ug/kg b) Not given c) Not given d) Not given e) Not given f) Not given	a) 29.5 +or- 50.7 ug/kg b) 12.5 +or- 12.3 ug/kg c) 35.4 +or- 38.3 ug/kg d) 14.1 +or- 15.1 ug/kg e) 46.9 +or- 80.5 ug/kg f) 7.7 ug/kg S.E.	a) All samples b) 40-49 yr olds, 3 samples c) 50-59 yr olds, 6 samples d) 60-69 yr olds, 7 samples e) 70-79 yr olds, 9 samples f) 80-89 yr olds, 2 samples Postmortems Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6566 Placenta		GC-EC	24	Not given	5.3 +or- 3.2 ng/g	Placental organic Hg level (1.4 +or- 1.1 ng/g) significantly lower (p < 0.001) No correlation with inorganic Hg levels in maternal or fetal red blood cells or plasma Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6567 Placenta		AAS	1	Not applicable	12.9 ug/kg	Stillbirth Czechoslovakia, 1980 CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6568 Placenta		GC	24	Not given	5.3 +or- 3.2 ng/g	Significantly higher than methyl Hg (1.4 +or- 1.1 ng/g) Patients residing in Cleveland, OH PREGNANCY; MERCURY; MERCURY INORGANIC COMPOUNDS; METHYL RADICALS; BLOOD; PLACENTA; OHIO; FETUS; ERYTHROCYTES	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. Prochaska, A.L. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:182-188

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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
6569 Urine			a) 29 b) 44 c) 7 d) 7	a) 0.1-10.4 ug/l b) 0.2-8.3 ug/l c) 1.7-16.4 ug/l d) 0.9-8.9 ug/l	a) 1.7 ug/l b) 1.1 ug/l c) 8.8 ug/l d) 2.8 ug/l	a) Children, rural area b) Children, urban area c) Exposed workers d) Nonexposed workers 9-11 yr old children and employees at grain fungicide treatment facility, Czechoslovakia CZECHOSLOVAKIA; ADULTS; AUTOPSIES; CHILDREN; NEWBORN; BLOOD; BRAIN; HAIR; KIDNEYS; LIVER; LUNGS; MUSCLES; PANCREAS; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; FOOD PRESERVATIVES; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; RURAL AREAS; URBAN AREAS	Tucek, J. Tucek, M. 1981 Journal of Hygiene, Epidemiology, Microbiology and Immunology 25(4):354-363
6570 Urine		AAS	23	53.0-746.0 ug/g creatinine	Not given	Chemical plant workers, average workplace time 8.25 yr GERMANY; ADULTS; BLOOD; URINE; COMPARATIVE EVALUATIONS; INDUSTRIAL MEDICINE; CADMIUM; LEAD; MERCURY; METALS; PROTEINS; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; SMELTERS	Schaller, K.H. Gonzales, J. Thurauf, J. Schiele, R. 1980 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B. Hygiene, Preventive Medizin 171:320-335

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
6571 Blood, cells		GC-EC	a) 29 b) 29	a) 0->6 ng/g b) 0->6 ng/g	a) 3.0 +or- 2.1 ng/g b) 3.9 +or- 3.0 ng/g	a) Maternal samples b) Fetal samples Correlation (p < 0.01) between a) and b) b) significantly higher than a). Inorganic Hg levels similar for a) (2.5 +or- 1.8 ng/g) but significantly lower for b) (1.4 +or- 1.2 ng/g) Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6572 Blood, cells		GC	a) 29 b) 29	a) Not given b) Not given	a) 3.0 +or- 2.1 ng/g b) 3.9 +or- 3.0 ng/g	a) Maternal erythrocytes b) Fetal erythrocytes b) significantly higher than a) Patients in active labor, Cleveland, OH PREGNANCY; MERCURY; MERCURY INORGANIC COMPOUNDS; METHYL RADICALS; BLOOD; PLACENTA; OHIO; FETUS; ERYTHROCYTES	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. Prochaska, A.L. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:182-188

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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
6573 Blood, plasma		GC-EC	25 25	a) Not given b) Not given	a) 0.4 +or- 0.2 ng/g b) 0.4 +or- 0.3 ng/g	a) Maternal samples b) Fetal samples Not significantly different. Inorganic Hg levels significantly higher (1.7 and 2.6 ng/g, respectively) for both a) and b) Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6574 Placenta		GC-EC	24	Not given	1.4 +or- 1.1 ng/g	Significant correlation with maternal and cord red blood cell levels of organic Hg, but not with maternal or fetal plasma levels Placental inorganic Hg level (5.3 +or- 3.2 ng/g) significantly higher ($p < 0.001$) Patients residing in or near Cleveland, OH OHIO; ADULTS; NEWBORN; BLOOD PLASMA; ERYTHROCYTES; PLACENTA; COMPARATIVE EVALUATIONS; MERCURY INORGANIC COMPOUNDS; MERCURY ORGANIC COMPOUNDS; METALS; PREGNANCY; MERCURY	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. 1981 American Journal of Obstetrics and Gynecology 139:209-213
6575 Placenta		GC	24	Not given	1.4 +or- 1.1 ng/g	Significantly lower than inorganic mercury (5.3 +or- 3.2 ng/g) Patients residing in Cleveland, OH PREGNANCY; MERCURY; MERCURY INORGANIC COMPOUNDS; METHYL RADICALS; BLOOD; PLACENTA; OHIO; FETUS; ERYTHROCYTES	Kuhnert, P.M. Kuhnert, B.R. Erhard, P. Prochaska, A.L. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:182-188

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
6576 Breath		GC/MS	28	0.7-4 ng/l	1.7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6577 Blood	Inhalation	GC	a) 1 b) 1 c) 1 d) 1	a) 2-0.12 mg/l b) 0.8-0.03 mg/l c) 1.7-0.1 mg/l d) 0.8-0.02 mg/l	a) Not given b) Not given c) Not given d) Not given	a) Smoker, 3 hr after start of exposure and 6 hr postexposure. Net increase in COHb 3.0% after 7 1/2 hr of exposure b) Nonsmoker, 8 hr after start of exposure and 16 hr postexposure c) Volunteer, exercising at work intensity of 28 ml O2 min/kg, 8 hr after start of exposure and 16 hr postexposure d) Volunteer, sedentary, 8 hr after start of exposure and 7 hr postexposure 8 hr exposure to 100 ppm Estimated from graphs Data also for other studies 23-27 yr olds CARBON MONOXIDE; BLOOD; URINE; BREATH; CHLORINATED HYDROCARBONS	DiVincenzo, G.D. Kaplan, C.J. Toxicology and Applied Pharmacology 59:141-148
6578 Blood	Inhalation	GC/MS	18	a) 270-520 ppb b) 270-560 ppb c) Not given	a) 370 ppb b) 414 ppb c) < 100 ppb	a) Painters, nonsmokers. Mean baseline COHb of about 28% with maximum increase of <1% during test b) Painters, smokers. Mean baseline COHb of 6.1% with maximum increase of 2.5% during test c) Controls, below detection limit. Mean baseline COHb of 2 smokers 5.6% with maximum increase of 1.5% during test. Nonsmokers baseline similar to a) with no changes Mean methylene chloride exposure in 26 min, 450 ppm. Paint formulation contained 29% by wt. Simulated home use of spray paint in exposure chamber. 23-49 yr olds BLOOD; ADULTS; CHLORINATED HYDROCARBONS; PAINTS; SMOKING; TOBACCOS	Stevenson, M.F. Cooper, G.L. Chenoweth, M.B. 1978 Clinical Toxicology 12(5):551-561
6579 Breath	Inhalation		a) 1 b) 1 c) 1 d) 1	a) 70-0.4 ppm b) 40-0 ppm c) 60-0.5 ppm d) 40-0 ppm	a) Not given b) Not given c) Not given d) Not given	a) Smoker, 4 hr after start of exposure and 6 hr postexposure b) Nonsmoker, 8 hr after start of exposure and 16 hr postexposure c) Volunteer, exercising at work intensity of 28 ml O2 min/kg, 8 hr after start of exposure and 16 hr post exposure. Net excretion of CO 14.34 mmol d) Volunteer, sedentary. 8 hr after start of exposure and 7 hr postexposure. Net excretion of CO 2.66 mmol 8 hr exposure to 100 ppm Estimated from graphs Conversion to CO 26% in c) and 40% in d) Data also for other studies. 23-27 yr olds CARBON MONOXIDE; BLOOD; URINE; BREATH; CHLORINATED HYDROCARBONS	DiVincenzo, G.D. Kaplan, C.J. Toxicology and Applied Pharmacology 59:141-148

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6580 Urine		GC	a) 3 b) 2	a) 142-318 ug/day b) 138-242 ug/day	a) Not given b) Not given	a) Exercising and sedentary volunteers b) Smokers After exposure to 100 ppm No apparent correlation with work intensity or smoking 2[illegible]-27 yr olds CARBON MONOXIDE; BLOOD; URINE; BREATH; CHLORINATED HYDROCARBONS	DiVincenzo, G.D. Kaplan, C.J. Toxicology and Applied Pharmacology 59:141-148

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
6581 Blood	Inhalation	GC	8	a) 0-2.3 ug/ml b) 0.2-3.13 ug/ml	a) Not given b) Not given	a) 1 inhalation b) 2 inhalations Range of peak values 10-20 sec after using Ventolin aerosol inhaler 31-66 yr old patients with asthma or chronic bronchitis BLOOD; DRUG THERAPY; FLUORINE COMPOUNDS; INHALATION	Dollery, C.T. Williams, F.M. Draffan, G.H. Wise, G. Sahyoun, H. Paterson, J.W. Walker, J.R. 1974 Clinical Pharmacology and Therapeutics 15(1):59-66

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
6582 Breath		GC/MS	28	2-17 ng/l	5.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6583 Blood	Inhalation	GC	8	a) 0.26-2.0 ug/ml b) 0.53-3.1 ug/ml	a) Not given b) Not given	a) 1 inhalation b) 2 inhalations 30 sec apart Range of peak values 10-20 sec after using Ventolin aerosol inhaler 31-66 yr old patients with asthma or chronic bronchitis BLOOD; DRUG THERAPY; FLUORINE COMPOUNDS; INHALATION	Dollery, C.T. Williams, F.M. Draffan, G.H. Wise, G. Sahyoun, H. Paterson, J.W. Walker, J.R. 1974 Clinical Pharmacology and Therapeutics 15(1):59-66

Methanearsonic acid, sodium salt (8 CI)
Arsonic acid, methyl-, sodium salt (9 CI)
22969-24-0
C-H5-As-O3.x-Na
MW 189, MP 113-116 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6584 Urine	Ingestion	AAS	4	Not given	391.7 ug	0-96 hr, total output after 500 ug dose. 0% inorganic arsenic, 87.4%. Monomethylarsonate, and 12.6% dimethylarsinate. Data corrected for basal excretion rate of 7.1 ug/24 hr Healthy 27-42 yr olds ADULTS; URINE; COMPARATIVE EVALUATIONS; ARSENIC; ARSENIC ORGANIC COMPOUNDS; METABOLITES	Buchet, J.P. Lauwerys, R. Roels, H. 1981 International Archives of Occupational and Environmental Health 48:71-79

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
6585 Breath		GC/MS	28	0.10-0.21 ng/l	0.15 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6586 Breath		GC/MS	28	0.7-5 ng/l	2 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Methyl-4-heptanone (No postings in CHEMLINE).
C8-H16-O
MW 128.21

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6587 Breath		GC/MS	28	0.6-8 ng/l	2.1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6588 Adrenal gland		ES	7	Not given	0.30 +or- 0.09 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6589 Aorta		ES	7	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6590 Bone		ES	5	Not given	<2.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6591 Hair		NA	54	0.05-0.16 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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

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TISSUE	EXPOSURE ROUTE	ANALITICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6592 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-<0.2 ppm c) <0.2-<0.2 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) <0.2 ppm c) <0.2 ppm d) <0.2 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6593 Intestine		ES	10	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6594 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-0.24 ppm c) 0.22-0.43 ppm d) Not applicable e) Not applicable Dry wt	a) 0.54 +or- 0.15 ppm b) Not given c) 0.33 ppm d) <0.2 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6595 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.3-1.4 ppm c) 0.60-1.1 ppm d) Not applicable e) Not applicable Dry wt	a) 1.5 +or- 0.59 ppm b) 1.4 ppm c) 0.93 ppm d) 0.78 ppm e) 0.55 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6596 Liver		NA	30	0.4-1.6 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6597 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-0.82 ppm c) <0.2-2.2 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) Not given c) Not given d) <0.2 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6598 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) <0.4-0.64 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) 0.41 ppm c) Not given d) <0.4 ppm e) <0.4 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6599 Nail		NA	63	0.07-0.33 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Rashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6600 Pancreas		ES	5	Not given	0.22 +or- 0.13 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6601 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.2-1.2 ppm c) <0.2-0.28 ppm d) Not applicable e) Not applicable Dry wt	a) <0.2 ppm b) Not given c) Not given d) <0.2 ppm e) <0.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6602 Stomach		ES	10	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6603 Thyroid gland		ES	4	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6604 Tongue		ES	2	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6605 Trachea		ES	2	Not given	<0.2 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6606 Breath		GC/MS	28	0.4-2.5 ng/l	0.9 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6607 Breath		GC/MS	28	0.08-0.75 ng/l	0.25 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6608 Adrenal gland		ES	7	Not given	0.66 +or- 0.36 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6609 Aorta		ES	7	Not given	0.50 +or- 0.20 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6610 Bone		ES	5	Not given	<4.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6611 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.71-1.1 ppm c) 0.27-12 ppm d) Not applicable e) Not applicable Dry wt	a) 0.43 +or- 0.23 ppm b) 0.90 ppm c) 4.22 ppm d) 0.92 ppm e) 0.29 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6612 Intestine		ES	10	Not given	0.51 +or- 0.18 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6613 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.55-1.6 ppm c) 0.22-100 ppm d) Not applicable e) Not applicable Dry wt	a) 0.57 +or- 0.34 ppm b) 1.1 ppm c) 33.63 ppm d) 1.6 ppm e) 0.33 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6614 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.45-1.2 ppm c) 0.3-34 ppm d) Not applicable e) Not applicable Dry wt	a) 0.33 +or- 0.13 ppm b) 0.82 ppm c) 11.9 ppm d) 2.4 ppm e) 0.36 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6615 Liver		ASV LSV	30	0.009-0.32 ug/g Wet wt	Not given	Category 1 (first priorit. element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6616 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 4.1-4.5 ppm c) 1.0-9.4 ppm d) Not applicable e) Not applicable Dry wt	a) 0.73 +or- 0.33 ppm b) 4.3 ppm c) 4.2 ppm d) 2.6 ppm e) 1.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6617 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 1.1-13 ppm d) Not applicable e) Not applicable Dry wt	a) 3.7 +or- 3.4 ppm b) 7.0 ppm c) 8.1 ppm d) 4.1 ppm e) 1.7 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6618 Pancreas		ES	5	Not given	0.27 +or- 0.07 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6619 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.20-2.5 ppm c) 0.20-34 ppm d) Not applicable e) Not applicable Dry wt	a) 0.42 +or- 0.24 ppm b) 1.4 ppm c) 11.5 ppm d) 2.4 ppm e) 0.55 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6620 Stomach		ES	10	Not given	0.51 +or- 0.18 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6621 Thyroid gland		ES	4	Not given	0.43 +or- 0.27 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6622 Tongue		ES	2	Not given	0.40 +or- 0.02 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6623 Trachea		ES	2	Not given	0.39 +or- 0.21 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6624 Urine	Inhalation		a) 13 b) 7 c) 9 d) 7 e) 14 f) 4 g) 14 h) 15 i) 83	a) 1-6 ug/l b) 1-6 ug/l c) 1-5 ug/l d) 1-18 ug/l e) 1-11 ug/l f) 2-9 ug/l g) 2-10 ug/l h) 2-14 ug/l i) 1-18 ug/l	a) 2.5 +or- 2.2 ug/l b) 2.2 +or- 1.9 ug/l c) 2.0 +or- 2.0 ug/l d) 3.8 +or- 3.1 ug/l e) 3.0 +or- 2.5 ug/l f) 4.3 +or- 2.9 ug/l g) 3.2 +or- 1.9 ug/l h) 6.4 +or- 1.9 ug/l i) 3.3 +or- 2.2 ug/l Geometric	a) 10% or less of work time during previous 10 yr spent in manual metal arc welding (MMA), nonsmokers b) Same as a), smokers c) 11-49% MMA welders, nonsmokers d) Same as c), smokers e) 50-89% MMA welders, nonsmokers f) Same as e), smokers g) > or = 90% MMA welders, nonsmokers h) Same as g), smokers i) All samples No correlation with exposure level Stainless steel welders, Finland FINLAND; URINE; CHROMIUM; METALS; NICKEL; FUMES; INDUSTRIAL PLANTS; INDUSTRIES; OCCUPATIONAL HAZARDS; SMOKING	Kalliomaki, P.-L. Rahkonen, E. Vaaranen, V. Kalliomaki, K. Aittoniemi, K. 1981 International Archives of Occupational and Environmental Health 49:67-75

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
6625 Urine	Inhalation Dermal	RIA	42	a) 0-41 ug/100 mg creatine b) 2.6-293 ug/100 mg creatine c) 0-67 ug/100 mg creatine d) 0-102 ug/100 mg creatine e) 0-7.9 ug/100 mg creatine f) 0-45 ug/100 mg creatine g) Not given h) 0-6.4 ug/100 my creatine	a) 8.4 ug/100 mg creatine b) 89.0 ug/100 mg creatine c) 12.7 ug/100 mg creatine d) 22.5 ug/100 mg creatine e) 2.8 ug/100 mg creatine f) 11.4 ug/100 mg creatine g) 15 ug/100 mg creatine h) 3.2 ug/100 mg creastine	a) 16 tobacco pickers, pre-exposure b) 16 tobacco pickers, morning after 8 hr harvest exposure c) 10 tobacco stringers, pre-exposure d) 10 tobacco stringers, morning after 8 hr harvest exposure e) 6 tractor drivers, pre-exposure f) 6 tractor drivers, morning after 8 hr harvest exposure g) 4 novice smokers, morning after smoking 3 cigarettes containing 1.3 mg nicotine each during 30 min, estimated from graph b) 6 non-exposed controls Measured as continine, metabolite North Carolina tobacco farms where green-tobacco sickness had occurred. Median age of workers, 14 yr Nausea and dizziness, 3 workers AGRICULTURE; FARMS; METABOLITES; OCCUPATIONAL HAZARDS; SMOKING; TOBACCOS; NICOTINE; OCCUPATIONAL DISEASES; URINE; NORTH CAROLINA	Gehlback, S.H. Perry, L.D. Williams, W.A. Freeman, J.I. 1975 Lancet 1(7905):478-480

Nonane
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
6626 Breath		GC/MS	28	0.27-2.4 ng/l	0.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6627 Breath		GC/MS	28	0.37-3.4 ng/l	1.1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6628 Breath		GC/MS	28	0.055-0.49 ng/l	0.16 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6629 Breath		GC/MS	28	0.13-3.8 ng/l	0.7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6630 Breath		GC/MS	28	0.05-0.5 ng/l	0.16 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6631 Breath		GC/MS	28	1.1-9 ng/l	3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6632 Breath		GC/MS	28	2-35 ng/l	10 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6633 Breath		GC/MS	28	1.6-8 ng/l	3.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6634 Urine	Inhalation	GC	41	<0.1-5.15 mg/l	1.28 mg/l	2-Methyl-2-pentanol, metabolite of 2-methylpentane. Exposure, 11-250 mg/cu m (mean 77 mg/cu m), commercial hexane Workers in shoe factories. INDUSTRIAL CHEMICALS; ITALY; ADULTS; URINE; INDUSTRIAL AREAS; INHALATION; METABOLITES; OCCUPATIONAL HAZARDS; SOLVENTS	Perbellini, L. Brugnone, F. Faggionato, G. 1981 British Journal of Industrial Medicine 38:20-26

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
6635 Breath		GC/MS	28	0.12-1.0 ng/l	0.33 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6636 Urine	Inhalation	GC	41	<0.1-1.0 mg/l	0.16 mg/l	3-Methyl-2-pentanol, metabolite of 3-methylpentane. Exposure, 10-204 mg/cu m (mean 63 mg/cu m), commercial hexane Workers in shoe factories. INDUSTRIAL CHEMICALS; ITALY; ADULTS; URINE; INDUSTRIAL AREAS; INHALATION; METABOLITES; OCCUPATIONAL HAZARDS; SOLVENTS	Perbellini, L. Brugnone, F. Faggionato, G. 1981 British Journal of Industrial Medicine 38:20-26

Pentanoic acid, 2-methyl-, ethyl ester
39255-32-8
C8-H16-O2
MW 144.24

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6637 Breath		GC/MS	28	0.03-0.22 ng/l	0.08 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6638 Breath		GC/MS	28	0.2-3 ng/l	0.75 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6639 Skin	Dermal		12	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.391 +or- 0.118 mg b) 0.632 +or- 0.219 mg c) 1.136 +or- 0.350 mg d) 1.44 +or- 0.37 mg e) 2.4 +or- 0.38 mg	a) 7.8% of dose absorbed after 15 min exposure of 2.5 g/l on 15.9 sq cm. Absorption rate 0.098 +or- 0.029 mg/sq cm/hr b) 12.6% of dose absorbed after 30 min exposure as in a). Absorption rate 0.079 +or- 0.026 mg/sq cm/hr c) 22.7% of dose absorbed after 60 min exposure as in a). Absorption rate 0.080 +or- 0.026 mg/sq cm/hr d) 14.4% of dose absorbed after 30 min exposure to 5.0 g/l on 15.9 sq cm. Absorption rate 0.181 +or- 0.047 mg/sq cm/hr e) 12.0% of dose absorbed after 30 min exposure to 10 g/l on 15.9 sq cm. Absorption rate 0.301 +or- 0.048 mg/sq cm/hr 20-42 yr olds URINE; PHENOLS; INDUSTRIAL CHEMICALS; SOLVENTS	Baranowska-Dutkiewicz, B. 1981 International Archives of Occupational and Environmental Health 49:99-104

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6640 Urine	Dermal	Colorimetry	12	a) 10-15 mg b) 21-30 mg c) 28-42 mg d) 34-56 mg	a) 12 mg b) 25 mg c) 35 mg d) 45 mg	a) 2.5 g/l b) 5.0 g/l c) 7.5 g/l d) 10 g/l In aqueous solution 24 hr output after 30 min whole hand (347-416 sq cm) exposure at 28 degrees C. Level for b) increased to 35 mg at 35 degrees C. Background level 6.91 +or- 2.34 mg/l Estimated from graph 20-42 yr olds URINE; PHENOLS; INDUSTRIAL CHEMICALS; SOLVENTS	Baranowska-Dutkiewicz, B. 1981 International Archives of Occupational and Environmental Health 49:99-104
6641 Urine			639	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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given t) Not given u) Not given v) Not given w) Not given x) Not given	a) 10.54 +or- 12.68 mg b) 8.89 +or- 12.59 mg c) 9.61 +or- 12.58 mg d) 9.93 +or- 14.13 mg e) 10.46 +or- 12.49 mg f) 10.29 +or- 12.49 mg g) 7.32 +or- 5.06 mg h) 8.73 +or- 6.75 mg i) 7.95 +or- 5.88 mg j) 8.97 +or- 9.19 mg k) 11.26 +or- 11.76 mg l) 10.21 +or- 10.65 mg m) 7.85 +or- 4.79 mg n) 11.88 +or- 17.38 mg o) 9.92 +or- 12.97 mg p) 7.67 +or- 7.86 mg q) 8.52 +or- 11.68 mg r) 8.15 +or- 10.17 mg s) 6.74 +or- 5.73 mg t) 6.49 +or- 6.08 mg u) 6.61 +or- 5.90 mg v) 8.09 +or- 8.40 mg w) 9.02 +or- 11.29 mg x) 8.60 +or- 10.08 mg	a) 38 men b) 50 women c) Combined a) and b) d) 23 men e) 49 women f) Combined d) and e) g) 38 men h) 31 women i) Combined g) and h) j) 35 men k) 41 women l) Combined j) and k) m) 36 men n) 38 women o) Combined m) and n) p) 36 Men q) 48 women r) Combined p) and q) s) 84 men t) 92 women u) Combined s) and t) v) 290 men, total w) 349 women, total x) 639 men and women, total a)-r) industrial area. a)-i) in areas with emissions from coke plants, steel works and metal rolling mills. j)-o) in areas with emissions from automotive traffic and home heating systems. p)-r) in areas with emissions only from home heating systems. s)-u) in nonindustrial area 24 hr excretions 60-65 yr old residents of Ruhr area, Germany Lower thrombocyte and leucocyte values, trend to lower erythrocyte values (females) and to higher erythrocyte hemoglobin values in the industrial areas indicate a pancytopenic effect on bone marrow. GERMANY; URINE; BENZENES; PHENOLS; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; POPULATION EXPOSURE; URBAN AREAS	Eikmann, T. Stinner, D. Prajsnar, D. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:57-76

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6642 Adipose		GC	21	Not given	14.48 ng/g	5 and 95 percentiles, 10.00 and 22.45 ng/g. Median 12.67 ng/g. Autopsy data Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90
6643 Blood		GC	21	5-69 ng/ml	26.03 ng/ml	Detection limit 5 ng/ml Autopsy data Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90
6644 Brain		GC	21	Not given	49.14 ng/g	5 and 95 percentiles 19.00 and 72.45 ng/g. Median 47.00 ng/g. Autopsy data. Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90
6645 Kidney		GC	21	Not given	64.14 ng/g	5 and 95 percentiles, 24.00 and 94.95 ng/g. Median 43.00 ng/g. Autopsy data. Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90
6646 Liver		GC	21	Not given	86.0 ng/g	5 and 95 percentiles 17.00 and 173.45 ng/g. Median 67.00 ng/g. Autopsy data Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6647 Spleen		GC	21	Not given	20.76 ng/g	5 and 95 percentiles 7.00 and 32.45 ng/g. Median 19.00 ng/g. Autopsy data. Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90
6648 Urine				a) 150-2700 ug/g creatinine b) 21-160 ug/g creatinine c) 340-3400 ppb d) 32-400 ppb e) 0-34 ppb	a) 760 ug/g creatinine b) 83 ug/g creatinine c) 1200 ppb d) 150 ppb e) Not given	a) Occupational exposure b) Reduced occupational exposure c) Same as a) d) Same as b) e) Controls No correlation with exposure time or age PCP factory workers URINE; MEASUREMENT METHODS; CHLORINE ORGANIC COMPOUNDS; PENTACHLOROPHENOL; PESTICIDES; PESTICIDE RESIDUES	Siqueira, M.E.P.B. Pernicola, N.A.G.G. 1981 Bulletin of Environmental Contamination and Toxicology 27:380-385
6649 Urine		GC	21	1-260 ng/ml	29.65 ng/ml	Detection limit 1 ng/ml Autopsy data Northern Bavaria GERMANY; AUTOPSIES; ADIPOSE TISSUE; BLOOD; BRAIN; KIDNEYS; LIVER; SPLEEN; URINE; PENTACHLOROPHENOL	Grimm, H.-G. Schellmann, B. Schaller, K.-H. Gossler, K. 1981 Zentralblatt fuer Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene, Abteilung 1. Originale, Reihe B 174:77-90

Phenol, 5-chloro-2-(2,4-dichlorophenoxy)-
3380-34-5
C12-H7-Cl3-O2
MW 289.5, MP 55-57 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6650 Skin	Dermal	Radiometry	1 per treatment	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) Not applicable	a) 0.131 ug/sq cm b) [illegible].79 ug/sq cm c) [illegible].106 ug/sq cm d) [illegible].144 ug/sq cm e) 0.126 ug/sq cm f) 0.241 ug/sq cm g) < 0.01 ug/sq cm	a) 10 min after wash with conventional soap b) 10 min after wash with equilibrated soap c) 10 min after wash with non-soap detergent d) 10 min after 6 washes with conventional soap e) 10 min after 6 washes with equilibrated soap f) 10 min after 6 washes with non-soap detergent g) 48 h after wash, all samples a) through f) Washed for 2 min with 0.25 ml of an 8% suspension containing 0.08% [3H]-DP300 fresh or equilibrated 1 wk with shaking for 10 min twice daily Total epidermis plus dermis GERMICIDE; SKIN; RATS	Black, J.G. Howes, D. Rutherford, T. 1975 Toxicology 3:33-47

Phosphoric acid, 2,2-dichlorovinyl dimethyl ester (8 CI)
Phosphoric acid, 2,2-dichloroethenyl dimethyl ester (9 CI)
62-73-7
C4-H7-Cl2-O4-P
MW 220.98, BP 120 C at 14 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6651 Urine		GC	17	3.1-789.1 ug	176.1 +or- 225.9 ug	Vaponite metabolite (O,O,dimethyl, O-amyl phosphate). Mean 8 hr outputs for preshift, shift and postshift periods. Mean air exposure 4.1-131.0 ug/cu m. Workers also exposed to Diazinon (0.8-41.0 ug/cu m) which yields same urinary metabolite Pest control operators, Texas TEXAS; URINE; INDUSTRIAL HYGIENE; ORGANOPHOSPHATES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Hayes, A.L. Wise, R.A. Weir, F.W. 1980 American Industrial Hygiene Association Journal 41:568-575

Phosphorodithioic acid, S,S'-methylene O,O,O',O'-tetraethyl ester
563-12-2
C9-H22-O4-P2-S4
MW 384.48, MP -12 to -13 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6652 Urine	Inhalation Dermal	GC	17	a) 137.1-470.4 ppb b) 71.5-282.0 ppb c) 149.8-642.1 ppb d) 89.6-541.1 ppb	a) 266.3 +or- 111.3 ppb b) 132.8 +or- 75.9 ppb c) 349.8 +or- 167.8 ppb d) 183.2 +or- 139.5 ppb	a) Diethyl thiophosphate. 8 workers who mixed ethion and filled spray tanks b) Diethyl thiophosphate. 9 workers who operated tractors pulling ethion air blast sprayers c) Diethyl dithiophosphate. Same as a) d) Diethyl dithiophosphate. Same as b) Range of means Estimates given for levels of dermal and respiratory exposure Citrus grove workers, Florida FLORIDA; URINE; PESTICIDES; AGRICULTURE; CROP DUSTING; OCCUPATIONAL HAZARDS; ORCHARDS; PESTICIDE RESIDUES	Wojeck, G.A. Nigg, H.N. Stamper, J.H. Bradway, D.E. 1981 Archives of Environmental Contamination and Toxicology 10:725-735

Phosphorothioic acid, O,O-diethyl O-(p-nitrophenyl) ester (8 CI)
Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester (9 CI)
56-38-2
C10-H14-N-O5-P-S
MW 291.27, MP 6 C, BP 375 C at 760 mm Hg, 157-162 C at 0.6 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6653 Urine		GC	23-40	a) 0.10-0.19 ppm b) Not detectable-0.19 ppm c) Not detectable-0.28 ppm d) 0.10-0.22 ppm e) Not detectable-0.15 ppm f) Not detectable g) 0.10-1.12 ppm h) 0.10-0.13 ppm i) Not detectable-0.23 ppm j) <0.10-0.30 pm k) <0.10-0.74 ppm l) Not detectable m) Not detectable n) <0.10-0.86 ppm o) <0.10-0.59 ppm p) Not detectable q) Not detectable	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 m) Not given n) Not given o) Not given p) Not given q) Not given	a) O,O-Dimethylphosphoric acid (DMP), farmworkers, baseline b) O,O-Diethylphosphorothioic acid (DETP), farmworkers, baseline c) O,O-Dimethylphosphorothioic acid (DMTP), farmworkers, baseline d) DMP, farmworkers, reentry e) DETP, farmworkers, reentry f) DMTP, farmworkers, reentry g) DMP, farmworkers, postreentry h) DETP, farmworkers, postreentry i) DMTP, farmworkers, postreentry j) DMP, volunteers baseline k) DMP, volunteers, baseline controls l) DETP, volunteers, baseline m) DMTP, volunteers, baseline n) DMP, volunteers, reentry o) DMP, volunteers, reentry controls p) DETP, volunteers, reentry q) DMTP, volunteers, reentry Baseline (1-3 mo before), reentry, and postreentry (2-3 mo after) levels for citrus grove workers and baseline (1 wk before) and reentry levels for student volunteers working in groves treated 30 days earlier with parathion (4 lb/100 gal water/acre or 6 lb/1800 gal water/acre). Controls assigned to untreated plots. Daily median values also given Mexican American farmworkers 18 yr or older, and 19-28 yr old college students, CA Baseline (nonexposure) acetylcholinesterase (AChE) and plasma cholinesterase (PChE) activities were significantly higher in workers than in volunteers. In volunteers PChE declined but AChE and residue levels changed little after exposure CALIFORNIA; ADULTS; URINE; ORGANOPHOSPHATES; PESTICIDES; CROP DUSTING; FARMS; METABOLITES; OCCUPATIONAL HAZARDS	Kraus, J.F. Mull, R. Kurtz, P. Winterlin, W. Franti, C.E. Borhani, N. Kilgore, W. 1981 Journal of Toxicology and Environmental Health 8:169-184

Phosphorothioic acid, O,O-diethyl O-(3,5,6-trichloro-2-pyridyl) ester (8 CI)
Phosphorothioic acid, O,O-diethyl O-(3,5,6-trichloro-2-pyridinyl) ester (9 CI)
2921-88-2
C9-H11-Cl3-N-O3-P-S
MW 350.57, MP 41-42 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6654 Urine		GC	16	a) 4.8-344.1 ug b) 1.0-34.9 ug	a) 48.3 +or- 58.6 ug b) 8.3 +or- 9.0 ug	a) O,O-diethyl, O-amyl phosphate b) O,O-diethyl, O-amyl phosphorothionate Average 8 hr outputs for preshift, shift and postshift periods. Mean air exposure 0.4-27.6 (mean 7.54) ug/cu m Pest control operators, Texas TEXAS; URINE; INDUSTRIAL HYGIENE; ORGANOPHOSPHATES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Hayes, A.L. Wise, R.A. Weir, F.W. 1980 American Industrial Hygiene Association Journal 41:568-575

Phosphorothioic acid, O,O-diethyl, O-(2-isopropyl-6-methyl-4-pyrimidinyl ester (8 CI)
Phosphorothioic acid, O,O-diethyl O-(6-methyl-2-(1-methylethyl)-4-pyrimidinyl) ester (9 CI)
333-41-5
C12-H21-N2-O3-P-S
MW 304.36, MP decomp above 120 C, BP 83-84 C at 0.002 mm Hg, VP 4.1X10(E-4) at 20 C, 1.1X10(E-3) at 40 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6655 Urine		GC	17	a) 31-789.1 ug b) 3.3-7.9 ug	a) 176.1 +or- 225.9 ug b) 5.6 ug	a) O,O-dimethyl, O-amyl phosphate b) O,O-dimethyl, O-amyl phosphorothionate Average 8 hr outputs for preshift, shift and postshift periods. Mean air exposure 0.8-41.0 (mean 6.29) ug/cu m. Workers also exposed to Vaponite (4.1-131.0 ug/cu m) which produces metabolite (a) TEXAS; URINE; INDUSTRIAL HYGIENE; ORGANOPHOSPHATES; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Hayes, A.L. Wise, R.A. Weir, F.W. 1980 American Industrial Hygiene Association Journal 41:568-575

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
6656 Adrenal gland		ES	7	Not given	3500 +or- 1400 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6657 Aorta		ES	7	Not given	3200 +or- 830 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6658 Blood, plasma		AAS	a) 20 b) 20	a) Not given b) Not given	a) 3.08 +or- 0.68 umol/l b) 2.92 +or- 0.6 umol/l	a) Limited care dialysis patients b) Home dialysis patients Clinically stable patients on intermittent dialysis >9 months HEMODIALYSIS; KIDNEY DISEASES; CALCIUM; METALS; PHOSPHORUS; BLOOD; BLOOD PLASMA; ALUMINUM	Zünkley, H. Bertram, H.P. Graefe, U. Langer, K. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:299-303
6659 Blood, serum	Ingestion	Photometry	2	a) 3.5-4.1 mg/100 ml b) 3.8-4.0 mg/100 ml c) 3.0-3.5 mg/100 ml d) 3.1-3.5 mg/100 ml	a) Not given b) Not given c) Not given d) Not given	a) Subject 1, intake 1288 mg/24 hr, low fiber diet b) Subject 1, intake 1740 mg/24 hr, high fiber diet c) Subject 2, intake 1400 mg/24 hr, low fiber diet d) Subject 2, intake 1940 mg/24 hr, high fiber diet Total dietary intake 50% caloric intake from white bread for 20 days followed by 20 days on high fiber, moderate phytate local bread 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503
6660 Bone		ES	5	Not given	46000 +or- 14000 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6661 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1200-3000 ppm c) 1200-4900 ppm d) Not applicable e) Not applicable Dry wt	a) 3100 +or- 1700 ppm b) 2100 ppm c) 2633 ppm d) 2000 ppm e) 2100 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6662 Intestine		ES	10	Not given	2100 +or- 930 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6663 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1500-3200 ppm c) 1300-5000 ppm d) Not applicable e) Not applicable Dry wt	a) 3800 +or- 1800 ppm b) 2350 ppm c) 2867 ppm d) 3100 ppm e) 2800 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6664 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 3200-4200 ppm c) 2500-5400 ppm d) Not applicable e) Not applicable Dry wt	a) 5000 +or- 2500 ppm b) 2700 ppm c) 4233 ppm d) 3900 ppm e) 1900 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6665 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1700-3500 ppm c) 1700-4300 ppm d) Not applicable e) Not applicable Dry wt	a) 4800 +or- 2300 ppm b) 2600 ppm c) 3033 ppm d) 2800 ppm e) 3600 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6666 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 2600-3900 ppm d) Not applicable e) Not applicable Dry wt	a) 6100 +or- 3000 ppm b) 4600 ppm c) 3433 ppm d) 4200 ppm e) 10,000 ppm Dry wt	a) Normal men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6667 Pancreas		ES	5	Not given	6400 +or- 1900 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6668 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 3600-5000 ppm c) 1800-6000 ppm d) Not applicable e) Not applicable Dry wt	a) 4900 +or- 2600 ppm b) 4300 ppm c) 4433 ppm d) 5200 ppm e) 5200 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6669 Stomach		ES	10	Not given	2100 +or- 930 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6670 Thyroid gland		ES	4	Not given	1200 +or- 410 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6671 Tongue		ES	2	Not given	1700 +or- 210 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6672 Trachea		ES	2	Not given	1100 +or- 140 ppm dry wt	Normal tissue Autopsies Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6673 Urine	Ingestion	Photometry	2	a) Not given b) Not given c) Not given d) Not given	a) 764 +or- 51 mg/100 ml b) 654 +or- 69 mg/100 ml c) 887 +or- 24 mg/100 ml d) 1240 +or- 75 mg/100 ml	a) Subject 1, intake 1288 mg/24 hr, low fiber diet b) Subject 1, intake 1740 mg/24 hr, high fiber diet c) Subject 2, intake 1400 mg/24 hr, low fiber diet d) Subject 2, intake 1940 mg/24 hr, high fiber diet Total dietary intake 50% caloric intake from white bread for 20 days followed by 20 days on high fiber, moderate phytate local bread 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

Plutonium
7440-07-5
Pu
AtW 242, 244, MP 639.5 C (also reported as 641 C), BP 3232 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6674 Body						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.
6675 Bone						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.

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Plutonium
7440-07-5
Pu
AtW 242, 244, MP 639.5 C (also reported as 641 C), BP 3232 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6676 Gonads						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.
6677 Kidney						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.
6678 Liver						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.
6679 Lung						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.

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Plutonium
7440-07-5
Pu
AtW 242, 244, MP 639.5 C (also reported as 641 C), BP 3232 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6680 Lymph node						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.
6681 Skin						Review. Evaluation of environmental impact of Pu and consideration of protection standards GONADS; AUTOPSIES; CASE HISTORIES; BODY; BONES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SKIN; PLUTONIUM; AIR POLLUTION; INDUSTRIAL ACCIDENTS; OCCUPATIONAL HAZARDS; RADIATION DOSES; RADIONUCLIDES	Liverman, J.L. Yoder, R.E., Jr. Wrenn, M.E. Bennett, B.G. Bair, W.J. Burr, W.W., Jr. Richmond, C.R. Thompson, R.C. Stannard, J.N. 1974 EPA Testimony, December 10-11, 1974, Washington, DC, WASH-1359, 339 pp.

Polybrominated biphenyls (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6682 Adipose			a) 23 b) 28	a) Not given b) Not given	a) 3.26 ppm b) 12.82 ppm	a) Farmers b) Chemical workers 16-59 yr old farmers with known PBB exposure and disabling health problems, and 23-62 yr old chemical workers in PBB manufacture, Michigan. Hepatomegaly and skin rashes in farmers. Minor elevations of serum uric acid, iron, cholesterol and triglycerides MICHIGAN; BLOOD SERUM; BROMINE ORGANIC COMPOUNDS; BIPHENYL COMPOUNDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; ADIPOSE TISSUE; FARMS; HEALTH HAZARDS; POLYBROMINATED BIPHENYLS; FOOD CONTAMINATION	Stross, J.K. Smokler, I.A. Isbister, J. Wilcox, K.R. 1981 Toxicology and Applied Pharmacology 58:145-150

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Polybrominated biphenyls (No postings in CHEMLINE).

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6683 Blood, serum			a) 23 b) 28 c) 9	a) Not given b) Not given c) Not given	a) 0.014 ppm b) 0.048 ppm c) 0.002 ppm	a) Farmers b) Chemical workers c) Public Health staff, controls 16-59 yr old farmers with known PBB exposure and disabling health problems, and 23-62 yr old chemical workers in PBB manufacture, Michigan. Hepatomegaly and skin rashes in farmers. Minor elevations of serum uric acid, iron, cholesterol and triglycerides MICHIGAN; BLOOD SERUM; BROMINE ORGANIC COMPOUNDS; BIPHENYL COMPOUNDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; ADIPOSE TISSUE; FARMS; HEALTH HAZARDS; POLYBROMINATED BIPHENYLS; FOOD CONTAMINATION	Stross, J.K. Smokler, I.A. Isbister, J. Wilcox, K.R. 1981 Toxicology and Applied Pharmacology 58:145-150

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
6684 Adrenal gland		ES	7	Not given	4500 +or- 2400 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6685 Aorta		ES	7	Not given	3700 +or- 600 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6686 Blood, serum	Ingestion		20	a) 3.0-4.4 mEq/l b) 3.2-5.2 mEq/l c) 3.1-4.2 mEq/l d) 3.0-4.8 mEq/l e) 3.1-4.5 mEq/l f) 2.9-4.0 mEq/l g) 3.2-4.0 mEq/l h) 3.1-4.3 mEq/l i) 3.1-4.0 mEq/l j) 3.1-3.8 mEq/l	a) 3.76 +or- 0.57 mEq/l b) 3.85 +or- 0.67 mEq/l c) 3.72 +or- 0.46 mEq/l d) 3.89 +or- 0.61 mEq/l e) 3.75 +or- 0.48 mEq/l f) 3.47 +or- 0.29 mEq/l g) 3.62 +or- 0.41 mEq/l h) 3.70 +or- 0.39 mEq/l i) 3.61 +or- 0.29 mEq/l j) 3.47 +or- 0.24 mEq/l	a) Before therapy, patients to initially receive liquid supplements b) 40 mEq/day as K-gluconate solution, at 2 wk c) 40 mEq/day, as K-gluconate solution, at 4 wk d) 48 mEq/day, as KCl tablet, at 6 wk e) 48 mEq/day, as KCl tablet, at 8 wk f) Before therapy, patients to initially receive tablets g) 48 mEq/day as KCl tablet, at 2 wk h) 48 mEq/day as KCl tablet, at 4 wk i) 40 mEq/day as K-gluconate solution, at 6 wk j) 40 mEq/day as K-gluconate solution, at 8 wk No significant differences between levels with the two forms. Not all patients adhered strictly to regimen. Hypertension patients, 43-67 yr olds ADULTS; HYPERTENSION; BLOOD SERUM; DIURETICS; POTASSIUM	Hutchison, J.C. 1974 Journal of Clinical Pharmacology 14(11/12):624-629
6687 Bone		ES	5	Not given	4000 +or- 3200 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6688 Hair		NA		a) 3.8-165 ppm b) 20-137 ppm c) 5.4-71 ppm	a) 42 +or- 32 ppm b) 56 +or- 40 ppm c) 33 +or- 22 ppm	a) 12 cm length, 104 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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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
6689 Heart		ES	8	Not given	9100 +or- 1700 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6690 Intestine		ES	10	Not given	5200 +or- 1800 ppm dry wt	Normal tissue mean of stomach and intestine Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6691 Kidney		ES	8	Not given	7000 +or- 810 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6692 Liver		ES	9	Not given	7200 +or- 1300 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6693 Lung		ES	12	Not given	7100 +or- 1200 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6694 Lymph node		ES	3	Not given	13000 +or- 4500 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6695 Pancreas		ES	5	Not given	7100 +or- 1400 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6696 Spleen		ES	9	Not given	10000 +or- 2000 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6697 Stomach		ES	10	Not given	5200 +or- 1800 ppm dry wt	Normal tissue mean of stomach and intestine Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6698 Thyroid gland		ES	4	Not given	3300 +or- 560 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6699 Tongue		ES	2	Not given	6200 +or- 710 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6700 Trachea		ES	2	Not given	3600 +or- 1100 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Potassium, isotope of mass 40
13966-00-2
K
MW 39.098, MP 63.2 C, BP 765.5 C (also reported as 774 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6701 Body		Radiometry	88	a) Not given b) Not given c) Not given d) Not given	a) 2.22 +or- 0.21 g/kg b) 2.60 +or- 0.19 g/kg c) 2.40 +or- 0.15 g/kg d) 2.71 +or- 0.14 g/kg	a) Whole body measurement, urban residents b) Fat-free mass, urban residents c) Whole body measurement, rural residents d) Fat-free mass, rural residents 12-14 yr old Japanese boys JAPAN; CHILDREN; BODY; COMPARATIVE EVALUATIONS; IN VIVO ANALYSIS; POTASSIUM; URBAN AREAS	Anzai, I. Sakamoto, K. Togo, M. Katsunuma, H. 1981 Annals of Human Biology 8(2):109-117

Propane, 2-nitro-
79-46-9
C3-H7-N-O2
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
6702 Breath		GC/MS	28	0.4-1.3 ng/l	0.7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Propionic acid, 3-mercapto-, ethyl ester (8 CI)
Propanoic acid, 3-mercapto-, ethyl ester (9 CI)
5466-06-8
C5-H10-O2-S
MW 134.21

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6703 Breath		GC/MS	28	2.2-5.7 ng/l	4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6704 Breath		GC/MS	28	0.12-1.5 ng/l	0.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Pseudohexyl alcohol
2-Ethylbutanol
2-Ethylbutyl alcohol
2-Ethyl-1-butanol
3-Methylolpentane
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
6705 Breath		GC/MS	28	0.43-2.3 ng/l	1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Pyrene
129-00-0
C16-H10
MW 202.24, MP 156 C, BP 404 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6706 Adipose		HPLC	10	49-2700 ppt wet wt	1140 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27
6707 Liver		HPLC	6	270-470 ppt wet wt	383 ppt wet wt	Autopsies 27-66 yr olds, Japan INDUSTRIAL CHEMICALS; JAPAN; AUTOPSIES; ADIPOSE TISSUE; LIVER; POPULATION EXPOSURE	Obana, H. Hori, S. Kashimoto, T. Kunita, N. 1981 Bulletin of Environmental Contamination and Toxicology 27:23-27

Radium
7440-14-4
Ra
AtW 226, MP 700 C, BP 1140 C (also reported as 1737 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6708 Body			42			Review. Clinical and autopsy findings, subjects surviving 25 yr after first industrial exposure to Ra-226 and Ra-228 RADIUM; NEW JERSEY; AUTOPSIES; CASE HISTORIES; ANEMIA; CARCINOMAS; OCCUPATIONAL DISEASES; ORAL DISEASES; OSTEOSARCOMAS; BODY; BONES; LUNGS; REVIEW; INDUSTRIES; OCCUPATIONAL HAZARDS; PAINTS; RADIATION DOSES; RADIONUCLIDES	Sharpe, W.D. 1974 Environmental Research 8:243-383
6709 Bone			42			Review. Clinical and autopsy findings, subjects surviving 25 yr after first industrial exposure to Ra-226 and Ra-228 RADIUM; NEW JERSEY; AUTOPSIES; CASE HISTORIES; ANEMIA; CARCINOMAS; OCCUPATIONAL DISEASES; ORAL DISEASES; OSTEOSARCOMAS; BODY; BONES; LUNGS; REVIEW; INDUSTRIES; OCCUPATIONAL HAZARDS; PAINTS; RADIATION DOSES; RADIONUCLIDES	Sharpe, W.D. 1974 Environmental Research 8:243-383
6710 Lung			42			Review. Clinical and autopsy findings, subjects surviving 25 yr after first industrial exposure to Ra-226 and Ra-228 RADIUM; NEW JERSEY; AUTOPSIES; CASE HISTORIES; ANEMIA; CARCINOMAS; OCCUPATIONAL DISEASES; ORAL DISEASES; OSTEOSARCOMAS; BODY; BONES; LUNGS; REVIEW; INDUSTRIES; OCCUPATIONAL HAZARDS; PAINTS; RADIATION DOSES; RADIONUCLIDES	Sharpe, W.D. 1974 Environmental Research 8:243-383

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
6711 Blood, whole		X-Ray Spectrometry	27	Not given	0.9 ppm	Precision 19% BLOOD; MEASUREMENT METHODS; COPPER; IRON; METALS; RUBIDIUM; SELENIUM; ZINC	Bearse, R.C. Close, D.A. Malanify, J.J. Umbarger, C.J. 1974 Analytical Chemistry 46(4):499-503

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6712 Liver		NA	30	7-12 ug/g Wet wt	Not given	Category 2 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (non-pollutant trace element monitored for "normal" levels) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

Salicylic acid, ion(1-) (8 CI)
Benzoic acid, 2-hydroxy-, ion(1-) (9 CI) (VAN)
63-36-5
C7-H5-03
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
6713 Blood		GC TLC UV GC/MS Enzymatic	2	Trace-171 mg/l	Not given	Dose probably less than toxic amount Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575

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
6714 Hair		NA	45	10-40 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6715 Hair		NA		a) 0.002-0.04 ppm b) 0.005-0.04 ppm c) 0.004-0.04 ppm	a) 0.012 +or- 0.010 ppm b) 0.016 +or- 0.01 ppm c) 0.02 +or- 0.002 ppm	a) 12 cm length, 98 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6716 Nail		NA	61	50-680 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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
6717 Aorta		NA	a) 3 b) 3 c) 3 d) 6 e) 7 f) 7	a) 0.79-1.72 ug/g b) 0.82-1.08 ug/g c) 0.87-1.32 ug/g d) 0.93-2.78 ug/g e) 0.82-1.87 ug/g f) 0.38-1.65 ug/g Dry wt	a) 1.20 +or- 0.22 ug/g b) 0.96 +or- 0.02 ug/g c) 1.07 +or- 0.05 ug/g d) 1.67 +or- 0.68 ug/g e) 1.23 +or- 0.32 ug/g f) 0.95 +or- 0.43 ug/g Dry wt	a) Normal intima, median 1.09 ug/g b) Normal media, median 0.98 ug/g c) Normal adventitia, median 1.01 ug/g d) Atheroma intima, median 1.58 ug/g e) Atheroma media, median 1.20 ug/g f) Atheroma adventitia, median 0.92 ug/g No known selenium exposure 1 day-79 yr old, autopsies AGE; AUTOPSIES; AORTA; BROMINE	Cross, J.D. Raie, R.M. Smith, H. 1981 Journal of Clinical Pathology 34:393-395

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6718 Blood, cells		NA	a) 20 b) 20 c) 10 d) 10 e) 30 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 440 +or- 90 ng/g b) 469 +or- 70 ng/g c) 410 +or- 70 ng/g d) 470 +or- 60 ng/g e) 558 +or- 112 ng/g f) 571 +or- 109 ng/g Dry wt	a) Adults, cardiovascular disease, urban area b) Controls for a) c) Adults, cardiovascular disease, rural area d) Controls for c) e) High school seniors, hypertensives, urban area f) Controls for e) Erythrocytes Adults, mean age 55 yr, and students, Chatham and Evans counties, GA Depressed erythrocyte glutathione peroxidase CADMIUM; METALS; SELENIUM; RURAL AREAS; URBAN AREAS; GEORGIA; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD; BLOOD PLASMA; ERYTHROCYTES	Andrews, J.W. Hames, C.G. Metts, J.C., Jr. Davis, J.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:33-42
6719 Blood, plasma		NA	a) 20 b) 20 c) 10 d) 10 e) 30 f) 30	a) Not given b) Not given c) not given d) Not given e) Not given f) Not given	a) 972 +or- 372 ng/g b) 992 +or- 272 ng/g c) 908 +or- 283 ng/g d) 872 +or- 307 ng/g e) 1210 +or- 382 ng/g f) 1190 +or- 364 ng/g Dry wt	a) Adults, cardiovascular disease, urban areas b) Controls for a) c) Adults, cardiovascular disease, rural area d) Controls for c) e) High School seniors, hypertensives, urban area f) Controls for e) Levels lower than those for residents of midwestern U.S. Adults, mean age 55 yr, and students Chatham and Evans counties, GA Depressed erythrocyte glutathione peroxidase CADMIUM; METALS; SELENIUM; RURAL AREAS; URBAN AREAS; GEORGIA; CARDIOVASCULAR DISEASES; HYPERTENSION; BLOOD; BLOOD PLASMA; ERYTHROCYTES	Andrews, J.W. Hames, C.G. Metts, J.C., Jr. Davis, J.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:33-42
6720 Blood, platelets	Ingestion	NA	a) 10 b) 8	a) 700-450 ng/g b) 400-150 ng/g	a) Not given b) Not given	a) 1.5-9.5 yr old controls, before breakfast b) 2.5-7.8 yr old patients, low Se diet Estimated from graph Platelet Se levels below normal (600 ng/g) only when Se levels in erythrocytes and plasma very low 6 children with phenylketonuria, 2 with maple-syrup-urine disease, and controls. SELENIUM; NUTRITIONAL DISORDERS; BLOOD; PLATELETS; CHILDREN; ERYTHROCYTES; BLOOD PLASMA	Kasperek, K. Lombeck, I. Kiem, J. Iyengar, G.V. Wang, Y.X. Feinendegen, L.E. Bremer, H.J. 1982 Biological Trace Element Research 4:29-34

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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
6721 Blood, serum	Ingestion	GC	a) 8 b) 20	a) 55-115 ng/ml b) 35-115 ng/ml	a) 78.2 +or- 19.2 ng/ml b) 55.0 +or- 16.8 ng/ml	a) Human milk diet, mean Se intake, birth to 3 mo, 16.3 +or- 4.9 ng/ml, mean daily Se intake at 3 mo 10.08 +or- 2.96 ug/day b) Formula diet, mean Se intake, birth to 3 mo, 8.6 +or- 0.9 ng/ml, mean daily Se intake at 3 mo 7.22 +or- 1.26 ug/day a) significantly higher than b) Se intake group a) significantly higher than that of group b) Range estimated from graph 3 mo old infants, IL ILLINOIS; ADULTS; INFANTS; BLOOD SERUM; MILK; METALS; SELENIUM; DIETS; FOODS; LACTATION	Smith, A.M. Picciano, M.F. Milner, J.A. 1982 American Journal of Clinical Nutrition 35:521-526
6722 Blood, whole		X-Ray Spectrometry	27	Not given	0.2 ppm	Precision 50% BLOOD; MEASUREMENT METHODS; COPPER; IRON; METALS; RUBIDIUM; SELENIUM; ZINC	Bearse, R.C. Close, D.A. Malanify, J.J. Umbarger, C.J. 1974 Analytical Chemistry 46(4):499-503
6723 Bone		NA	a) 7 b) 5	a) <0.02-0.58 ppm b) <0.06-0.12 ppm	a) 0.040 ppm b) 0.057 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6724 Hair		NA	54	0.46-0.52 ug/g	0.49 ug/g	Range of means, 5 localities Residents of Iceland ADULTS; HAIR; ARSENIC; CADMIUM; MERCURY; METALS; SELENIUM; ZINC	Johannesson, T. Lunde, G. Steinnes, E. 1981 Acta Pharmacologica et Toxicologica 48:185-189
6725 Hair		NA	1	49.2X10(E-6)-981.7X10(E-6) g/cu cm	237.34X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6726 Hair		NA	46	0.45-0.9 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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
6727 Hair		NA		a) 0.18-8.4 ppm b) 0.56-2.68 ppm c) 0.4-2.53 ppm	a) 1.4 +or- 1.2 ppm b) 1.32 +or- 0.58 ppm c) 1.26 +or- 0.6 ppm	a) 12 cm length, 95 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTPIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6728 Kidney		Fluorometry	123	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) 1.1 +or- 0.5 ug/g b) 1.2 +or- 0.4 ug/g c) 1.2 +or- 0.4 ug/g d) 1.0 +or- 0.4 ug/g e) 0.8 +or- 0.2 ug/g f) 1.3 +or- 1.2 ug/g g) 1.3 +or- 1.2 ug/g h) 0.7 +or- 0.5 ug/g i) 1.2 +or- 0.5 ug/g	a) All cases b) Hypertension, 35 cases c) Atherosclerosis, 45 cases d) Cancer, 32 cases e) Cancer and metastases, 16 cases f) Leukemia, 7 cases g) Brain tumor, 4 cases h) Renal disease, 4 cases i) Other, 28 cases Autopsies Se/Cd ratios greater in patients with cancer and metastases Smoking and nonsmoking patients CADMIUM; METALS; SELENIUM; ZINC; CADAVERS; CARCINOMAS; HYPERTENSION; KIDNEY DISEASES; LEUKEMIA; KIDNEYS; SMOKING	Shamberger, R.J. Bratush, C.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:203-210
6729 Liver		NA	30	0.097-0.68 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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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
6730 Milk		GC	13	a) 8-34 ng/ml b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given h) Not given	a) 16.3 +or- 4.9 ng/ml b) 41.2 +or- 17.3 ng/ml b) 15.7 +or- 4.9 ng/ml d) 16.3 +or- 4.8 ng/ml e) 14.4 +or- 1.6 ng/ml f) 15.2 +or- 3.2 ng/ml g) 14.1 +or- 3.2 ng/ml h) 15.9 +or- 3.4 ng/ml	a) 8 mothers, sampled 3x/day before nursing, at 1, 2, and 3 mo postpartum b) 4 mothers, colostrum samples from each breast, 1-4 days postpartum c) Sampled before nursing at 2 wk lactation d) Sampled after nursing at 2 wk lactation e) Sampled before nursing at 1 mo lactation f) Sampled after nursing at 1 mo lactation g) Sampled before nursing at 2 mo lactation h) Sampled after nursing at 2 mo lactation c)-h) 5 mothers sampled 2x/day a) and b), g) and h) differed, p <0.05. Significant positive correlation with protein content, r = 0.49 Additional data presented Lactating mothers, 1 day-3 mo postpartum, IL ILLINOIS; ADULTS; INFANTS; BLOOD SERUM; MILK; METALS; SELENIUM; DIETS; FOODS; LACTATION	Smith, A.M. Picciano, M.F. Milner, J.A. 1982 American Journal of Clinical Nutrition 35:521-526
6731 Nail		NA	44	0.5-0.95 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6732 Urine		Fluorimetry	11	a) 35-61 ng/ml b) 33-36 ng/mg creatinine c) 33-63 ug d) 19-248 ng/ml e) 26-240 ng/mg creatinine f) 7-95 ug	a) 47 +or- 20 ng/ml b) 35 +or- 11 ng/mg creatinine c) 45 +or- 15 ug d) 99 +or- 28 ng/ml e) 95 +or- 12 ng/mg creatinine f) 26 +or- 10 ug	a) 24 hr output, based on 7 samples (1 per month) for 7 months, 3 subjects b) Same as a) expressed in terms of creatinine c) Same as a), total Se output d) Spot samples taken over 24 hr in 8 subjects e) Same as d) expressed in terms of creatinine f) Same as d), total Se output Data presented in b) and e) subject to least variation and dilution effect. JAPAN; URINE; MEASUREMENT METHODS; METALS; SELENIUM	Hojo, Y. 1981 Bulletin of Environmental Contamination and Toxicology 27:213-220

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
6733 Adrenal gland		ES	7	Not given	46 +or- 26 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6734 Aorta		ES	7	Not given	34 +or- 22 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6735 Bone		ES	5	Not given	<10 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Silicon
7440-21-3
Si
AtW 28.086, MP 1410 C, BP 2600 C, VP 1 mm Hg at 1724 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6736 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 30-76 ppm c) 43-82 ppm d) Not applicable e) Not applicable Dry wt	a) 18 +or- 6.3 ppm b) 53 ppm c) 62 ppm d) 37 ppm e) 53 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6737 Intestine		ES	10	Not given	31 +or- 14 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN, TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6738 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 33-64 ppm c) 31-68 ppm d) Not applicable e) Not applicable Dry wt	a) 23 +or- 17 ppm b) 48 ppm c) 21 ppm d) 53 ppm e) 42 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Silicon
7440-21-3
Si
AtW 28.086, MP 1410 C, BP 2600 C, VP 1 mm Hg at 1724 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6739 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 22-61 ppm c) 46-230 ppm d) Not applicable e) Not applicable Dry wt	a) 24 +or- 8.5 ppm b) 42 ppm c) 109 ppm d) 46 ppm e) 290 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6740 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 450-630 ppm c) 330-890 ppm d) Not applicable e) Not applicable Dry wt	a) 390 +or- 280 ppm b) 540 ppm c) 845 ppm d) 410 ppm e) 9500 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6741 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 790-4700 ppm d) Not applicable e) Not applicable Dry wt	a) 7000 +or- 3000 ppm b) 1800 ppm c) 3230 ppm d) 7100 ppm e) 21000 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Silicon
7440-21-3
Si
AtW 28.086, MP 1410 C, BP 2600 C, VP 1 mm Hg at 1724 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6742 Pancreas		ES	5	Not given	33 +or- 23 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6743 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 32-160 ppm c) 46-100 ppm d) Not applicable e) Not applicable Dry wt	a) 48 +or- 45 ppm b) 96 ppm c) 109 ppm d) 130 ppm e) 3900 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6744 Stomach		ES	10	Not given	31 +or- 14 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6745 Thyroid gland		ES	4	Not given	16 +or- 5.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6746 Tongue		ES	2	Not given	17 +or- 9.9 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6747 Trachea		ES	2	Not given	25 +or- 11 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6748 Adrenal gland		ES	7	Not given	<0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6749 Aorta		ES	7	Not given	<0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6750 Bone		ES	5	Not given	<0.3 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6751 Bone		NA	7	<0.003-0.025 ppm	Not given	Autopsies, femur 45-75 yr old factory workers, Sweden ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116

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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
6752 Hair		NA	56	46.5X10(E-6)-2643X10(E-6) g/cu cm	99.45X10(E-6) g/cu cm	3 cm segments of single hairs Data from 4 persons, others below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6753 Hair		NA	21 samples	180-1450 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assiut, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6754 Hair		NA		a) 0.07-8.2 ppm b) 0.48-2.93 ppm c) 0.14-2.85 ppm	a) 0.87 +or- 1.1 ppm b) 1.0 +or- 0.73 ppm c) 1.25 +or- 0.9 ppm	a) 12 cm length, 91 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6755 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.03-0.04 ppm c) <0.03-0.09 ppm d) Not applicable e) Not applicable Dry wt	a) <0.03 ppm b) Not given c) Not given d) <0.03 e) <0.03 Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6756 Intestine		ES	10	Not given	0.06 +or- 0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6757 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.04-0.05 ppm c) 0.04-0.09 ppm d) Not applicable e) Not applicable Dry wt	a) <0.03 ppm b) 0.04 ppm c) 0.06 ppm d) 0.13 ppm e) <0.03 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6758 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.06-0.13 ppm c) 0.06-0.10 ppm d) Not applicable e) Not applicable Dry wt	a) 0.15 +or- 0.39 ppm b) .09 ppm c) .08 ppm d) 0.06 ppm e) 0.03 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6759 Liver		NA	30	0.006-0.07 ug/g Wet wt	Not given	Category 2 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (non-pollutant trace element monitored for "normal" levels) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6760 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.16-0.25 ppm c) <0.03-<0.03 ppm d) Not applicable e) Not applicable Dry wt	a) <0.03 ppm b) 0.20 ppm c) <0.03 ppm d) <0.03 ppm e) <0.03 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6761 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) <0.06-<0.06 ppm d) Not applicable e) Not applicable Dry wt	a) <0.06 ppm b) <0.06 ppm c) <0.06 ppm d) <0.06 ppm e) <0.06 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6762 Nail		NA	19 samples	350-850 ng/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assiut, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6763 Pancreas		ES	5	Not given	<0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6764 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.03-<0.07 ppm c) <0.03-<0.03 ppm d) Not applicable e) Not applicable Dry wt	a) <0.03 ppm b) <0.05 ppm c) <0.03 ppm d) <0.03 ppm e) <0.03 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6765 Stomach		ES	10	Not given	0.06 +or- 0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6766 Thyroid gland		ES	4	Not given	<0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6767 Tongue		ES	2	Not given	<0.03 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6768 Trachea		ES	2	Not given	<0.03 +or- 0.01 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6769 Adrenal gland		ES	7	Not given	5200 +or- 1400 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6770 Aorta		ES	7	Not given	8700 +or- 2800 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6771 Bone		ES	5	Not given	8100 +or- 2100 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6772 Hair		NA		a) 24-530 ppm b) 39-304 ppm c) 22-320 ppm	a) 96 +or- 75 ppm b) 107 +or- 64 ppm c) 90 +or- 74 ppm	a) 12 cm length, 104 samples b) Root section, 18 samples c) Distal section, 18 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178
6773 Heart		ES	8	Not given	5600 +or- 1300 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6774 Intestine		ES	10	Not given	4300 +or- 1200 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6775 Kidney		ES	8	Not given	10000 +or- 3400 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6776 Liver		ES	9	Not given	5900 +or- 1900 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6777 Lung		ES	12	Not given	11600 +or- 2700 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6778 Lymph node		ES	3	Not given	6200 +or- 2100 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6779 Pancreas		ES	5	Not given	7100 +or- 2900 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6780 Spleen		ES	9	Not given	6200 +or- 1700 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6781 Stomach		ES	10	Not given	4300 +or- 1200 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6782 Thyroid gland		ES	4	Not given	6800 +or- 1300 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6783 Tongue		ES	2	Not given	3000 +or- 0 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6784 Trachea		ES	2	Not given	8600 +or- 3400 ppm dry wt	Normal tissue Japan TONGUE; ZIRCONIUM; ELEMENTS; JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; SPLEEN; PANCREAS; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6785 Adrenal gland		ES	7	Not given	0.41 +or- 0.20 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6786 Aorta		ES	7	Not given	2.1 +or- 0.68 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6787 Bone		ES	5	Not given	22 +or- 7.5 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6788 Hair		NA	5	2.4X10(E-6)-113.3X10(E-6) g/cu cm	16.13X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289
6789 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.72-1.3 ppm c) 1.2-7.1 ppm d) Not applicable e) Not applicable Dry wt	a) 0.24 +or- 0.08 ppm b) 1.0 ppm c) 3.4 ppm d) 2.3 ppm e) 1.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6790 Intestine		ES	10	Not given	0.54 +or- 0.22 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6791 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.2-2.0 ppm c) 0.89-4.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.38 +or- 0.09 ppm b) 1.6 ppm c) 2.3 ppm d) 2.7 ppm e) 0.81 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6792 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.35-1.2 ppm c) 2.0-4.2 ppm d) Not applicable e) Not applicable Dry wt	a) 0.20 +or- 0.07 ppm dry wt b) 0.77 ppm c) 3.3 ppm d) 1.9 ppm e) 0.79 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6793 Liver			30	0.01 ug/g Wet wt	Not given	Category 3 as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking (trace element of environmental importance not included in first priority list) Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6794 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.7-2.1 ppm c) 1.8-6.8 ppm d) Not applicable e) Not applicable Dry wt	a) 0.55 +or- 0.14 ppm b) 1.9 ppm c) 4.2 ppm d) 2.4 ppm e) 2.2 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6795 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 3.2-14 ppm d) Not applicable e) Not applicable Dry wt	a) 3.4 +or- 1.8 ppm b) 3.5 ppm c) 7.1 ppm d) 4.1 ppm e) 5.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6796 Pancreas		ES	5	Not given	0.24 +or- 0.06 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6797 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.40-2.7 ppm c) 1.1-5.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.23 +or- 0.07 ppm b) 1.6 ppm c) 3.8 ppm d) 5.2 ppm e) 0.91 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6798 Stomach		ES	10	Not given	0.54 +or- 0.22 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6799 Thyroid gland		ES	4	Not given	0.61 +or- 0.21 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6800 Tongue		ES	2	Not given	0.21 +or- 0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6801 Trachea		ES	2	Not given	0.79 +or- 0.44 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6802 Blood	Inhalation Dermal	GC/MS	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 j) Not given k) Not given l) Not given	a) 0.16 +or- 0.06 ug/ml b) 1.22 +or- 0.69 ug/ml c) 0.17 +or- 0.11 ug/ml d) 0.17 +or- 0.08 ug/ml e) 0.31 +or- 0.16 ug/ml f) 0.16 +or- 0.05 ug/ml g) 0.17 +or- 0.07 ug/ml h) 0.94 +or- 0.32 ug/ml i) 0.20 +or- 0.08 ug/ml j) 0.16 +or- 0.09 ug/ml k) 0.20 +or- 0.13 ug/ml l) 0.12 +or- 0.04 ug/ml	a) Pre-work, no protective clothing b) End of 8 hr work-shift, group a) c) 16 hr post-shift, group a) d) Pre-work, wearing respirator e) End of 8 hr work-shift, group d) f) 16 hr post-shift, group d) g) Pre-work, wearing polyvinyl alcohol gloves and protective clothing h) End of 8 hr work-shift, group g) i) 16 hr post-shift, group g) j) Pre-work, wearing gloves, protective clothing, and respirator k) End of 8 hr work-shift, group j) l) 16 hr post-shift, group j) Mean ambient air levels during work-shift, 60-90 ppm (estimated from graph) End of work-shift levels for groups using respirator significantly lower than groups not using respirator All values returned to control levels by following morning Workers with extensive exposure in manufacture of fibrous glass boats, 4 smokers, 4 nonsmokers ADULTS; BLOOD; BREATH; URINE; STYRENES; AIR POLLUTION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; METABOLISM; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS; INDUSTRIAL HYGIENE	Brooks, S.M. Anderson, L. Emmett, E. Carson, A. Tsay, J.-Y. Elia, V. Buncher, R. Karbowsky, R. 1980 Archives of Environmental Health 35(5):287-294
6803 Breath	Inhalation Dermal	GC/MS	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 j) Not given k) Not given l) Not given	a) 1.59 +or- 0.84 ug/l b) 9.46 +or- 2.46 ug/l c) 2.04 +or- 0.78 ug/l d) 1.70 +or- 0.55 ug/l e) 2.86 +or- 1.08 ug/l f) 1.37 +or- 0.26 ug/l g) 2.07 +or- 1.49 ug/l h) 8.55 +or- 2.36 ug/l i) 1.74 +or- 0.54 ug/l j) 1.82 +or- 0.59 ug/l k) 2.98 +or- 1.76 ug/l l) 1.26 +or- 0.55 ug/l	a) Pre-work, no protective clothing b) End of 8 hr work-shift, group a) c) 16 hr post-shift, group a) d) Pre-work, wearing respirator e) End of 8 hr work-shift, group d) f) 16 hr post-shift, group d) g) Pre-work, wearing polyvinyl alcohol gloves and protective clothing h) End of 8 hr work-shift, group g) i) 16 hr post-shift, group g) j) Pre-work, wearing gloves, protective clothing, and respirator k) End of 8 hr work-shift, group j) l) 16 hr post-shift, group j) Mean time of sample 10.2 +or- 6.3 min after leaving work area Mean ambient air levels during work-shift, 60-90 ppm (estimated from graph) Use of respirator significantly reduced level in expired breath All values returned to control levels by following morning Workers with extensive exposure in manufacture of fibrous glass boats, 4 smokers, 4 nonsmokers ADULTS; BLOOD; BREATH; URINE; STYRENES; AIR POLLUTION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; METABOLISM; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS; INDUSTRIAL HYGIENE	Brooks, S.M. Anderson, L. Emmett, E. Carson, A. Tsay, J.-Y. Elia, V. Buncher, R. Karbowsky, R. 1980 Archives of Environmental Health 35(5):287-294

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6804 Urine	Inhalation Dermal	GC	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	a) 149 +or- 108 mg/g creatinine b) 1330 +or- 591 mg/g creatinine c) 248 +or- 110 mg/g creatinine d) 194 +or- 115 mg/g creatinine e) 128 +or- 87 mg/g creatinine f) 301 +or- 165 mg/g creatinine g) 280 +or- 217 mg/g creatinine h) 262 +or- 252 mg/g creatinine	a) Mandelic acid, pre-work, no protective equipment b) Mandelic acid, end of shift, no protective equipment c) Mandelic acid, pre-work, protective equipment d) Mandelic acid, end of shift, protective equipment e) Phenylglyoxylic acid [PGA], pre-work, no protective equipment f) PGA, end of shift, no protective equipment g) PGA, pre-work, protective equipment h) PGA, end of shift, protective equipment Styrene metabolites Mean ambient air levels, 60-90 ppm (estimated from graph) Workers with extensive exposure in manufacture of fibrous glass boats, 4 smokers, 4 nonsmokers ADULTS; BLOOD; BREATH; URINE; STYRENES; AIR POILUTION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; INHALATION; METABOLISM; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS; INDUSTRIAL HYGIENE	Brooks, S.M. Anderson, L. Emmett, E. Carson, A. Tsay, J.-Y. Elia, V. Buncher, R. Karbowsky, R. 1980 Archives of Environmental Health 35(5):287-294
6805 Urine		GC	55	a) 16-2500 mg/g creatinine b) <5-2200 mg/g creatinine	a) Not given b) Not given	a) Mandelic and phenylglyoxylic acids b) Mandelic acid only After styrene exposure of 2.8-83.4 ppm (8 hr time-weighted average) Post shift samples Plastics factory employees ADULTS; UNITED STATES; URINE; MEASUREMENT METHODS; STYRENES; HEALTH HAZARDS; INDUSTRIAL ATMOSPHERES; METABOLITES; OCCUPATIONAL HAZARDS; INDUSTRIAL CHEMICALS	Elia, V.J. Anderson, L.A. MacDonald, T.J. Carson, A. Buncher, C.R. Brooks, S.M. 1980 American Industrial Hygiene Association Journal 41:922-926

Succinamic acid, 3-amino-N-(alpha-carboxyphenethyl)-, N-methyl ester, stereoisomer (8 CI) (VAN)
L-Phenylalanine, N-L-alpha-aspartyl-, 1-methyl ester (9 CI)
22839-47-0
C14-H18-N2-05
MW 294.30, MP 246-247 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6806 Blood, plasma	Ingestion		34	a) 5.86-12.0 umol/dl b) 4.83-8.95 umol/dl c) 5.92-15.1 umol/dl d) 6.40-7.84 umol/dl e) 4.40-5.46 umol/dl f) 3.77-4.29 umol/dl	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Phenylalanine, 12 normal males b) Phenylalanine, 10 normal females c) Phenylalanine, 12 females heterozygous to phenylketonuria d) Tyrosine, same as a) e) Tyrosine, same as b) f) Tyrosine, same as c) Range of means Dose 34 mg/kg aspartame Slower rate of metabolism of aspartame for heterozygous females CALIFORNIA; IOWA; BLOOD PLASMA; AMINO ACIDS; SWEETENING AGENTS	Stegink, L.D. Koch, R. Blaskovics, M.E. Filer, L.J., Jr. Baker, G.L. McDonnell, J.E. 1981 Toxicology 20:81-90

Sulfide, methyl propyl (8 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
6807 Breath		GC/MS	28	1-8.4 ng/l	3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6808 Breath		GC/MS	28	0.1-4 ng/l	0.65 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6809 Liver			30	0.001-0.009 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM, NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.

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
6810 Blood		AAS	72	a) Not given b) Not given c) Not given d) Not given	a) 38.6 +or- 26.7 umol/l b) 100.9 +or- 50.3 umol/l c) 33.0 +or- 22.8 umol/l d) 81.3 +or- 39.1 umol/l	a) Maternal blood, 31 nonsmokers b) Maternal blood, 41 smokers c) Cord blood, 31 nonsmokers d) Cord blood, 41 smokers a), b) during active labor c), d) immediately after delivery b) significantly greater than a) d) significantly greater than c) Mean age 22 and 23 yr, mean infant birth wt 3094 and 3436 g, mean gestation time 39.0 and 39.4 wk for smokers and nonsmokers, respectively, OH CHIO; ADULTS; NEWBORN; BLOOD; PLACENTA; COMPARATIVE EVALUATIONS; CADMIUM; METALS; THIOCYANATES; BIOACCUMULATION; HEALTH HAZARDS; PREGNANCY; SMOKING	Kuhnert, P.M. Kuhnert, B.R. Bottoms, S.F. Erhard, P. 1982 American Journal of Obstetrics and Gynecology 142:1021

Thiocyclopentane (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6811 Breath		GC/MS	28	0.28-2.8 ng/l	0.9 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogeneous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

Thioether (No postings in CHEMLINE).
C4-H10-S

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6812 Urine	Inhalation Dermal	Chem	224	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 47 +or- 1.8 umol/mmol creatinine b) 37 +or- 1.6 umol/mmol creatinine c) 77 +or- 8.5 umol/mmol creatinine d) 42 +or- 2.3 umol/mmol creatinine e) 115 +or- 20 umol/mmol creatinine f) 74 +or- 14 umol/mmol creatinine g) 57 +or- 3 umol/mmol creatinine S.E.	a) 90 men, workers b) 63 men, controls c) 23 women, workers d) 48 women, controls e) 6 women, heavy skin contamination f) 8 women, moderate skin contamination g) 3 women, light skin contamination Thioether levels indicative of exposure to alkylating agents Data also given by department and curing status of rubber Specimens collected after 8 hr work day on Fri. Rubber plant employees, office workers. URINE; INDUSTRIAL HYGIENE; INDUSTRIAL MEDICINE; HEALTH HAZARDS; INDUSTRIAL PLANTS; OCCUPATIONAL HAZARDS; RUBBER; THIOETHERS; INDUSTRIAL CHEMICALS	Kilpikari, I. 1981 British Journal of Industrial Medicine 38:98-100

Thorium, isotope of mass 228
14274-82-9
Th
MW 232.0381, MP approx 1750 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6813 Body	Inhalation	ES Radiometry	1	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 m) Not given n) Not given	a) 11.2 +or- 0.8 nCi b) 10.5 +or- 0.8 nCi c) 14.7 +or- 0.9 nCi d) 8.3 +or- 0.9 nCi e) 13.2 +or- 1.0 nCi f) 10.1 +or- 1.0 nCi g) 7.7 +or- 0.3 nCi h) 11.4 +or- 0.3 nCi i) 8.6 +or- 0.3 nCi j) 6 nCi k) 4 nCi l) 2 nCi m) 1.5 nCi n) 0.75 nCi	a) 0 b) 5 c) 15 d) 47 e) 68 f) 103 g) 187 h) 257 i) 327 j) 500 k) 1000 l) 1500 m) 2000 n) 2500 Days after first measurement Values are Bi-212 content from whole-body counting j)-n) estimated from graph Laboratory worker contaminated with oxide form, between Sept 1962 and Dec 1963 THORIUM; BISMUTH; INDUSTRIAL ACCIDENTS; INHALATION; RADIONUCLIDES; BODY; URINE; IN VIVO ANALYSIS	Newton, D. Rundo, J. Eakins, J.D. 1981 Health Physics 40:291-298
6814 Urine	Inhalation	ES Radiometry	1	9-0.3 pCi/day	Not given	Alpha-activity 0 to 2600 days after day of first measurment Laboratory worker contaminated, presumably through inhalation of thorium in oxide form, between Sept 1962 and Dec 1963 THORIUM; BISMUTH; INDUSTRIAL ACCIDENTS; INHALATION; RADIONUCLIDES; BODY; URINE; IN VIVO ANALYSIS	Newton, D. Rundo, J. Eakins, J.D. 1981 Health Physics 40:291-298

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
6815 Adrenal gland		ES	7	Not given	0.82 +or- 0.48 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6816 Aorta		ES	7	Not given	0.74 +or- 0.39 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6817 Bone		ES	5	Not given	<4.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6818 Bone		NA	a) 7 b) 5	a) 0.03-1.2 ppm b) 0.08-1.4 ppm	a) 0.09 ppm b) 0.10 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6819 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.38-0.59 ppm c) 0.45-1.1 ppm d) Not applicable e) Not applicable Dry wt	a) 0.59 +or- 0.25 ppm b) 0.48 ppm c) 0.79 ppm d) 0.31 ppm e) 0.15 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6820 Intestine		ES	10	Not given	0.88 +or- 0.55 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6821 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.40-1.7 ppm c) 0.36-1.6 ppm d) Not applicable e) Not applicable Dry wt	a) 0.72 +or- 0.25 ppm b) 1.0 ppm c) .87 ppm d) 0.49 ppm e) 0.33 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6822 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	Not given b) 1.1-3.2 ppm c) 1.3-1.7 ppm d) Not applicable e) Not applicable Dry wt	a) 1.1 +or- 0.41 ppm b) 2.2 ppm c) 1.5 ppm d) 0.93 ppm e) 0.53 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6823 Liver			30	0.08-0.65 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6824 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 3.1-9.6 ppm c) 3.7-100 ppm d) Not applicable e) Not applicable Dry wt	a) 1.5 +or- 0.80 ppm b) 6.3 ppm c) 36.2 ppm d) 1.7 ppm e) 1.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6825 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 5.2-100 ppm d) Not applicable e) Not applicable Dry wt	a) 9.8 +or- 1.3 ppm b) 11 ppm c) 39.4 ppm d) 5.9 ppm e) 0.7 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6826 Pancreas		ES	5	Not given	0.43 +or- 0.17 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6827 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 2.2-2.3 ppm c) 0.31-2.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.55 +or- 0.37 ppm b) 2.2 ppm c) 1.6 ppm d) 0.32 ppm e) 0.30 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6828 Stomach		ES	10	Not given	0.88 +or- 0.55 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6829 Thyroid gland		ES	4	Not given	0.37 +or- 0.25 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6830 Tongue		ES	2	Not given	0.40 +or- 0.02 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6831 Trachea		ES	2	Not given	0.72 +or- 0.54 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 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
6832 Adrenal gland		ES	7	Not given	1.0 +or- 0.69 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6833 Aorta		ES	7	Not given	0.45 +or- 0.29 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 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
6834 Bone		ES	5	Not given	<4.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6835 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.1-1.6 ppm c) 0.27-1.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.23 +or- 0.06 ppm b) 1.4 ppm c) 0.75 ppm d) 0.92 ppm e) 2.5 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6836 Intestine		ES	10	Not given	0.51 +or- 0.29 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6837 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.20-0.44 ppm c) 0.24-0.95 ppm d) Not applicable e) Not applicable Dry wt	a) 0.27 +or- 0.08 ppm b) 0.32 ppm c) 0.58 ppm d) 4.1 ppm e) 1.7 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6838 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.26-0.74 ppm c) 0.46-1.7 ppm d) Not applicable e) Not applicable Dry wt	a) 0.37 +or- 0.18 ppm b) 0.50 ppm c) .93 ppm d) 3.9 ppm e) 12 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6839 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 9.2-22 ppm c) 23-210 ppm d) Not applicable e) Not applicable Dry wt	a) 33 +or- 32 ppm b) 15.6 ppm c) 89 ppm d) 920 ppm e) 110 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 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
6840 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 29-95 ppm d) Not applicable e) Not applicable Dry wt	a) 150 +or- 60 ppm b) 36 ppm c) 52 ppm d) 2800 ppm e) 330 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6841 Pancreas		ES	5	Not given	0.82 +or- 0.27 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6842 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.73-2.0 ppm c) 0.65-2.9 ppm d) Not applicable e) Not applicable Dry wt	a) 0.98 +or- 0.89 ppm b) 1.36 ppm c) 1.6 ppm d) 7.1 ppm e) 33 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 3277 C, VP 1 mm Hg at 2180 C, 10 mm Hg at 2480 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6843 Stomach		ES	10	Not given	0.51 +or- 0.29 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6844 Thyroid gland		ES	4	Not given	0.37 +or- 0.22 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6845 Tongue		ES	2	Not given	0.39 +or- 0.25 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Titanium
7440-32-6
Ti
AtW 47.90, MP 1677 C, BP 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
6846 Trachea		ES	2	Not given	0.38 +or- 0.23 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6847 Blood	Inhalation	GC	a) 70 b) 11 c) 10 d) 6 e) 7 f) 4 g) 11 h) 8 i) 5	a) 144-3622 ug/l b) 526-4530 ug/l c) 181-415 ug/l d) 72-214 ug/l e) 336-742 ug/l f) 134-824 ug/l g) 350-763 ug/l h) 30-349 ug/l i) 30-145 ug/l	a) 1591 ug/l b) 1615 ug/l c) 299 ug/l d) 138 ug/l e) 587 ug/l f) 433 ug/l g) 545 ug/l h) 134 ug/l i) 80 ug/l	a) 129 ml/sq m. Mean concentration in room air, (same for b-i) b) 109 ml/sq m c) 19 ml/sq m d) 13 ml/sq m e) 23 ml/sq m f) 18 ml/sq m g) 21 ml/sq m h) 3 ml/sq m i) 2 ml/sq m Correlation between exposure and blood levels Printing shop workers, Germany INDUSTRIAL SOLVENTS; INDUSTRIAL CHEMICALS; GERMANY; ADULTS; BLOOD; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INHALATION; OCCUPATIONAL HAZARDS; PRINTING INDUSTRY	Angerer, J. Behling, K. 1981 International Archives of Occupational and Environmental Health 48:137-146
6848 Blood, whole	Inhalation	GC	20	755.3-21.9 ug/l	Not applicable	0 and 20 hr after exposure to 200 ppm in air for 4 hr. Preexposure level 10 ug/l Range of means Volunteers INDUSTRIAL CHEMICALS; ADULTS; BLOOD; URINE; TOLUENE; INHALATION; METABOLITES; GERMANY	Woiwode, W. Drysch, K. 1981 British Journal of Industrial Medicine 38:194-197
6849 Breath		GC/MS	28	4-20 ng/l	10 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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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
6850 Urine	Inhalation	GC	a) 19 b) 19 c) 18 d) 19 e) 18	a) 4.208-0.680 g/l b) 1.603-0.130 mg/l c) 0.599-<0.2 mg/l d) 39.590-40.968 mg/l e) 3.483-6.900 mg/l	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) Hippuric acid, 0 and 44 hr. Preexposure level 0.823 g/l b) o-Cresol, 0 and 44 hr. Preexposure level 0.159 mg/l c) m-Cresol, 4 and 44 hr. Preexposure level <0.2 mg/l d) p-Cresol, 0 and 4 hr. Preexposure level 31.206 mg/l e) Phenol, 0 and 20 hr. Preexposure level 4.869 mg/l Toluene metabolites, after 4 hr exposure to 200 ppm in air. INDUSTRIAL CHEMICALS; ADULTS; BLOOD; URINE; TOLUENE; INHALATION; METABOLITES; GERMANY	Woiwode, W. Drysch, K. 1981 British Journal of Industrial Medicine 38:194-197

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
6851 Breath		GC/MS	28	0.03-0.15 ng/l	0.07 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6852 Hair		NA	51	0.005-0.037 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

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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
6853 Nail		NA	63	0.008-0.036 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS: URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168

Valeric acid, ethyl ester (8 CI)
Pentanoic acid, ethyl ester (9 CI)
539-82-2
C7-H14-O2
MW 130.18, BP 145-146 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6854 Breath		GC/MS	28	0.06-0.5 ng/l	0.19 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6855 Adrenal gland		ES	7	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6856 Aorta		ES	7	Not given	1.7 +or- 0.67 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6857 Blood		NA		a) 0.024-0.939 ng/ml b) 0.016-0.139 ng/ml	a) Not given b) Not given	a) Men b) Women Healthy subjects BELGIUM; BLOOD; METALS; VANADIUM	Cornelis, R. Versieck, J. 1981 Lancet 2(8256):1179
6858 Bone		ES	5	Not given	19 +or- 3.0 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6859 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.62-0.70 ppm c) 0.90-1.6 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) 0.66 ppm c) 1.2 ppm d) 1.4 ppm e) 0.76 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6860 Intestine		ES	10	Not given	0.49 +or- 0.24 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6861 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.72-1.1 ppm c) 0.82-1.5 ppm d) Not applicable e) Not applicable Dry wt	a) 0.67 +or- 0.35 ppm b) 0.91 ppm c) 1.24 ppm d) 1.7 ppm e) 0.81 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6862 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.4-1.3 ppm c) 1.7-2.0 ppm d) Not applicable e) Not applicable Dry wt	a) 0.37 +or- 0.08 ppm b) Not given c) 1.9 ppm d) 1.4 ppm e) 0.81 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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
6863 Liver			30	<0.007-0.09 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6864 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.6-1.7 ppm c) 1.6-3.6 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) 1.6 ppm c) 2.4 ppm d) 1.4 ppm e) 3.1 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6865 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 1.7-4.1 ppm d) Not applicable e) Not applicable Dry wt	a) 4.8 +or- 2.7 ppm b) 2.0 ppm c) 2.9 ppm d) 2.7 ppm e) 6.0 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6866 Pancreas		ES	5	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6867 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.4-2.0 ppm c) 0.81-3.5 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) Not given c) 2.2 ppm d) 3.5 ppm e) 1.3 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6868 Stomach		ES	10	Not given	0.49 +or- 0.24 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6869 Thyroid gland		ES	4	Not given	<0.67 +or- 0.19 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6870 Tongue		ES	2	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6871 Trachea		ES	2	Not given	1.1 +or- 0.45 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

Vitamin A
11103-57-4
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6872 Blood, serum			10	a) 2.87-11.00 IU/ml b) 2.66-10.20 IU/ml	a) 5.88 +or- 0.88 IU/ml b) 5.39 +or- 0.83 IU/ml	a) Before hemodialysis b) After 8 hr hemodialysis Slight decrease after hemodialysis did not justify supplementation Patients with chronic uremia CAROTENOIDS; KIDNEY DISEASES; BLOOD SERUM; HEMODIALYSIS; VITAMIN A; ISRAEL	Gotloib, L. Sklan, D. Mines, M. 1978 Journal of the American Medical Association 239(8):751

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6873 Adrenal gland		ES	7	Not given	69 +or- 20 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6874 Aorta		ES	7	Not given	83 +or- 12 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6875 Blood, cells			3	a) 5.7-10.1 ug/ml b) 6.4-8.7 ug/ml	a) Not given b) Not given	a) Pretreatment b) After Zn therapy Range of means 2.6-12 yr old children with acrodermatitis enteropathica Therapy decreased irritability, nervousness, and restlessness. Remission maintained by 1-2 mg/kg/day. CHILDREN; DISEASES; NUTRITIONAL DEFICIENCIES; BLOOD; HAIR; INTESTINES; SKIN; URINE; METALS; ZINC	Walravens, P.A. Hambidge, K.M. Neldner, K.H. Silverman, A. van Doorninck, W.J. Mierau, G. Favara, B. 1978 Journal of Pediatrics 93(1):71-73
6876 Blood, plasma		AAS	6	a) 93-97% b) 105-103% c) 92-79% d) 92-94%	a) Not given b) Not given c) Not given d) Not given	a) Fasting b) Ethanol (35 g) c) Food d) Food and ethanol Percent of 9 AM base value of 0.89 +or- 0.02 ug/ml, at 11 AM and 3 PM. Significant decrease in c) and significant difference between c) and d) Estimated from graph. Healthy 21-36 yr olds BLOOD PLASMA; COMPARATIVE EVALUATIONS; ALCOHOLS; METALS; ZINC; FOODS	Richards, B. Flint, D.M. Wahlquist, M.L. 1981 Nutrition Reports International 23(5):939-943
6877 Blood, plasma	Ingestion	AAS	a) 12 b) 19	a) 52-155 ug/dl b) 53-113 ug/dl	a) 82 +or- 4.3 ug/dl b) 77.0 +or- 3.0 ug/dl S.E.	a) Fasting men (21 samples) b) Fasting women (25 samples) No significant difference between a) and b) Levels increased by 85 ug/dl at 2 hr after 25 mg dose (as 110 mg $ZnSO_4$). Increase significantly reduced by coadministration of nonheme Fe (25-75 mg ferrous sulfate), but not by heme iron (75 mg heme chloride). Nonheme Fe (100 mg) did not have significant effect when Zn (54 mg) given as 60 g raw Atlantic oyster Healthy adults ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; COMPARATIVE EVALUATIONS; IRON; METALS; ZINC; DIETS	Solomons, N.W. Jacob, R.A. 1981 American Journal of Clinical Nutrition 34:475-482
6878 Blood, plasma		AAS	2	a) Not applicable b) Not applicable c) Not applicable	a) 87 ug/100 ml b) 96 ug/100 ml c) 94 ug/100 ml	a) Beginning of study, 2 subjects b) Subject 1, end of study c) Subject 2, end of study Study period, 20 days with 50% caloric intake from white bread followed by 20 days in which high fiber moderate phytate, local bread replaced white bread 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6879 Blood, plasma	Ingestion	AAS	6	a) 80-108 ug/dl b) 70-102 ug/dl c) 63-104 ug/dl d) 66-101 ug/dl	a) 97 +or- 11 ug/dl b) 89 +or- 12 ug/dl c) 91 +or- 15 ug/dl d) 85 +or- 12 ug/dl	a) Initial measurement b) After 1 wk lo. Zn diet c) After 2 wk low Zn diet d) After 3 wk low Zn diet 23-44 yr old University of Texas students in good health with adequate Zn NUTRITIONAL DEFICIENCIES; TEXAS; ADULTS; SEX; BLOOD PLASMA; SALIVA; ZINC; BIOINDICATORS; DIETS	Freeland-Graves, J.H. Hendrickson, P.J. Ebangit, M.L. Snowden, J.Y. 1981 American Journal of Clinical Nutrition 34:312-321
6880 Blood, plasma		AAS	50	a) Not given b) Not given	a) 14.48 +or- 2.6 umol/l b) 6.88 +or- 2.83 umol/l	a) 19 healthy controls b) 31 patients with acute myocardial infarction Close correlation between fall in plasma Zn and rise in CPK (creatinine-phosphate-kinase) in acute myocardial infarction patients. BLOOD PLASMA; CARDIOVASCULAR DISEASES; HEART DISEASES; COPPER; MAGNESIUM; MANGANESE; ZINC	Zumkley, H. Bertram, H.P. Vetter, H. Tank, B. Wirth, W. 1980 Trace Substances in Environmental Health VIV, D.D. Hemphill, ed. pp 211-216
6881 Blood, plasma		AAS	110	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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given	a) 74.7 +or- 0.96 ug/100 ml b) 70.4 +or- 5.1 ug/100 ml c) 75.1 +or- 2.0 ug/100 ml d) 76.2 +or- 1.3 ug/100 ml e) 77.9 +or- 1.8 ug/100 ml f) 80.7 ug/100 ml g) 66.4 +or- 7.0 ug/100 ml h) 75.6 +or- 1.7 ug/100 ml i) 75.2 +or- 1.5 ug/100 ml j) 77.9 +or- 1.8 ug/100 ml k) 79.3 +or- 2.2 ug/100 ml l) 72.0 +or- 2.5 ug/100 ml m) 73.1 +or- 1.6 ug/100 ml n) 77.1 +or- 2.0 ug/100 ml o) 77.3 +or- 2.0 ug/100 ml p) 76.8 +or- 2.9 ug/100 ml q) 76.9 +or- 4.7 ug/100 ml r) 74.1 +or- 6.7 ug/100 ml s) 73.3 +or- 6.4 ug/100 ml S.E.	a) All children b) Height, 85-89%, 5 children c) Height, 90-94%, 18 children d) Height, 95-99%, 46 children e) Height, 100-104%, 20 children f) Height, > or = 105%, 2 children g) Weight, 85-89%, 4 children h) Weight, 90-94%, 15 children i) Weight 95-99%, 31 children j) Weight 100-104%, 21 children k) Weight > or = 105%, 19 children l) Arm circumference, 80-84%, 5 children m) Arm circumference, 85-89%, 26 children n) Arm circumference, 90-94%, 23 children o) Arm circumference 95-99%, 22 children p) Arm circumference > or = 100%, 16 children q) Taste acuity normal, 55 children r) Mild hypogeusia, 17 children s) Moderate and severe hypogeusia, 4 children Height, weight, and arm circumference, as % of median levels, significantly correlated with Zn level. Moderate to severe hypogeusia significantly associated with low Zn levels 9-12 yr old school children, Yugoslavia YUGOSLAVIA; CHILDREN; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; HAIR; METALS; ZINC	Buzina, R. Jusic, M. Sapunar, J. Milanovic, N. 1980 American Journal of Clinical Nutrition 33(11):2262-2267

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6882 Blood, plasma		AAS	a) 24 b) 21 c) 8	a) Not given b) Not given c) Not given	a) 12.8 +or- 0.8 umol/l b) 12.1 +or- 0.4 umol/l c) 12.6 +or- 0.4 umol/l	a) No Li therapy b) Li therapy for 6 mo c) Li therapy for 1-2 yr No significant differences Manic-depressive patients DENMARK; BEHAVIOR DISORDERS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; DRUG THERAPY; METALS; ZINC	Schou, M. Holt, E. 1981 Acta Pharmacologica et Toxicologica 49:298-300
6883 Blood, serum		AAS	88	a) 0.65-1.23 ug/ml b) 0.45-1.3 ug/ml c) 0.45-0.8 ug/ml d) 0.25-1.48 ug/ml e) 0.85-1.45 ug/ml	a) 0.92 +or- 0.12 ug/ml b) 0.68 +or- 0.13 ug/ml c) 0.62 +or- 0.08 ug/ml d) 0.56 +or- 0.23 ug/ml e) 1.13 +or- 0.23 ug/ml	a) 28 controls b) 20-22 wk gestation, 60 subjects c) 36-37 wk gestation, 50 subjects d) Postpartum, 29 subjects e) Cord blood, 7 subjects Range estimated from graph Effects of smoking, alcohol, parity, oral contraceptives considered Healthy 19-24 yr old Caucasians taking Fe and folic acid, no other B vitamins. Controls, 18-23 yr old, nonpregnant students, no vitamin supplements no oral contraceptives. Ireland IRELAND; ADULTS; BLOOD SERUM; HAIR; ORAL CONTRACEPTIVES; ZINC; ALCOHOLIC BEVERAGES; PREGNANCY; SMOKING; METALS	Vir, S.C. Love, A.H.G. Thompson, W. 1981 American Journal of Clinical Nutrition 34:2800-2807
6884 Blood, serum		AAS	a) 26 b) 21 c) 52 d) 11 e) 10 f) 21 g) 10 h) 10 i) 10	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) 1.2 +or- 0.6 ppm b) 1.0 +or- 0.6 ppm c) 0.9 +or- 0.4 ppm d) 1.1 +or- 0.5 ppm e) 1.0 +or- 0.4 ppm f) 1.1 +or- 0.3 ppm g) 0.9 +or- 0.4 ppm h) 0.9 +or- 0.1 ppm i) 1.1 +or- 0.2 ppm	a) Lung and respiratory tract b) Gastrointestinal tract c) Breast d) Cervix e) Lymphatic leukemia f) Malignant melanomas g) Hodgkin's lymphoma h) Healthy volunteers i) Geriatric patients a)-g) type of cancer No significant difference between controls and cancer patients Cancer patients (15-81 yr olds), geriatric patients (65-81 yr olds), healthy volunteers (20-44 yr olds), UK UNITED KINGDOM; CARCINOMAS; LEUKEMIA; MELANOMAS; NEOPLASMS; SARCOMAS; BLOOD SERUM; CALCIUM; COPPER; MAGNESIUM; MANGANESE; METALS; ZINC; BIOINDICATORS	Capel, I.D. Pinnock, M.H. Williams, D.C. Hanham, I.W.F. 1982 Oncology 39:38-41
6885 Blood, whole		X-Ray Spectrometry	27	Not given	6.4 ppm	Precision 7%. Accuracy within 10% by comparison to atomic absorption spectrometry. BLOOD; MEASUREMENT METHODS; COPPER; IRON; METALS; RUBIDIUM; SELENIUM; ZINC	Bearse, R.C. Close, D.A. Malanify, J.J. Umbarger, C.J. 1974 Analytical Chemistry 46(4):499-503
6886 Body	Ingestion	Radiometry	12	19-99%	Not given	% of dose absorbed 24 hr after 1-2 uCi Zn-65 Estimated from graph Significant correlation with urinary excretion (p <0.001) Patients with hypogeusia and hyposmia DISEASES; BODY; URINE; MEASUREMENT METHODS; ZINC; RADIONUCLIDES; METALS	Henkin, R.I. Aamodt, R.L. 1975 Lancet 1(7921):1379-1380

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6887 Body	Ingestion	Radiometry	75	40-86% of dose	65 +or- 11% of dose	Intestinal absorption of 10 uCi dose (Zn-65) after 14 hr fast Healthy 18-84 yr olds BODY; METALS; ZINC	Aamodt, R.L. Rumble, W.F. Johnston, G.S. Markley, E.J. Henkin, R.I. 1981 American Journal of Clinical Nutrition 34:2648-2652
6888 Body	Ingestion	Radiometry	75	40-86% of dose	65 +or- 11% of dose	Intestinal absorption of 10 uCi dose Zn-65 after 14 hr fast Healthy 18-84 yr olds BODY; METALS; ZINC	Aamodt, R.L. Rumble, W.F. Johnston, G.S. Markley, E.J. Henkin, R.I. 1981 American Journal of Clinical Nutrition 34:2648-2652
6889 Bone		ES	5	Not given	200 +or- 56 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6890 Bone		NA	a) 7 b) 5	a) 71-137 ppm b) 92-102 ppm	a) 104 ppm b) 95 ppm Medians	a) Exposed group b) Controls Autopsies, femur 45-75 yr old factory workers, Sweden. Controls from unpolluted areas ANTIMONY; ARSENIC; CADMIUM; COPPER; LEAD; MERCURY; SELENIUM; SILVER; TIN; ZINC; BIOACCUMULATION; INDUSTRIAL ATMOSPHERES; INDUSTRIAL PLANTS; POPULATION EXPOSURE; SMELTERS; BONES; FEMUR; COMPARATIVE EVALUATIONS; SWEDEN; AUTOPSIES; OCCUPATIONAL HAZARDS; METALS	Lindh, U. Brune, D. Nordberg, G. Wester, P.-O. 1980 Science of the Total Environment 16:109-116
6891 Hair		NA	58	143-191 ug/g	172 ug/g	Range of means, 5 localities Residents of Iceland ADULTS; HAIR; ARSENIC; CADMIUM; MERCURY; METALS; SELENIUM; ZINC	Johannesson, T. Lunde, G. Steinnes, E. 1981 Acta Pharmacologica et Toxicologica 48:185-189

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6892 Hair			3	a) 66-89 ug/g b) 75-120 ug/g	a) Not given b) Not given	a) Pretreatment b) After Zn therapy Range of means 2.6-12 yr old children with acrodermatitis enteropathica Therapy decreased irritability, nervousness, and restlessness. Remission maintained by 1-2 mg/kg/day. CHILDREN; DISEASES; NUTRITIONAL DEFICIENCIES; BLOOD; HAIR; INTESTINES; SKIN; URINE; METALS; ZINC	Walravens, P.A. Hambidge, K.M. Neldner, K.H. Silverman, A. van Doorninck, W.J. Mierau, G. Favara, B. 1978 Journal of Pediatrics 93(1):71-73
6893 Hair		AAS	88	a) 127-225 ug/g b) 110-238 ug/g c) 88-222 ug/g d) 98-208 ug/g	a) 178.2 +or- 25.1 ug/g b) 183 +or- 26 ug/g c) 170 +or- 26 ug/g d) 165 +or- 29 ug/g	a) 28 controls b) 20-22 wk gestation, 60 subjects c) 36-37 wk gestation, 50 subjects d) Postpartum, 29 subjects Range estimated from graph Effect of smoking, alcohol, parity, oral contraceptives considered Healthy 19-24 yr old Caucasians taking Fe and folic acid, no other B vitamins. Controls, 18-23 yr old, nonpregnant students, no vitamin supplements no oral contraceptives. Ireland IRELAND; ADULTS; BLOOD SERUM; HAIR; ORAL CONTRACEPTIVES; ZINC; ALCOHOLIC BEVERAGES; PREGNANCY; SMOKING; METALS	Vir, S.C. Love, A.H.G. Thompson, W. 1981 American Journal of Clinical Nutrition 34:2800-2807
6894 Hair		NA	56	71.3X10(E-6)-1521X10(E-6) g/cu cm	319.7X10(E-6) g/cu cm	3 cm segments of single hairs Some samples below detection limits IRIDIUM; HAIR; FORENSIC MEDICINE; MEASUREMENT METHODS; ANTIMONY; ARSENIC; BROMINE; COPPER; GOLD; LANTHANUM; MANGANESE; MERCURY; METALS; SELENIUM; SILVER; SODIUM; STRONTIUM; ZINC; INDUSTRIAL ATMOSPHERES	Dybczynski, R. Boboli, K. 1976 Journal of Radioanalytical Chemistry 31:267-289

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6895 Hair		AAS	110	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 m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given	a) 90.3 +or- 2.6 ppm b) 82.1 +or- 13.3 ppm c) 90.1 +or- 4.5 ppm d) 92.2 +or- 4.8 ppm e) 95.9 +or- 6.2 ppm f) 89.4 ppm g) 73.1 +or- 6.0 ppm h) 89.6 +or- 9.2 ppm i) 88.6 +or- 3.5 ppm j) 94.5 +or- 7.0 ppm k) 94.8 +or- 6.5 ppm l) 85.7 +or- 6.2 ppm m) 88.4 +or- 5.3 ppm n) 90.8 +or- 5.6 ppm o) 93.6 +or- 4.0 ppm p) 89.1 +or- 9.8 ppm q) 116.3 +or- 38.9 ppm r) 91.6 +or- 45.4 ppm s) 88.2 +or- 27.8 ppm S.E.	a) All children b) Height, 85-89%, 5 children c) Height, 90-94%, 18 children d) Height, 95-99%, 46 children e) Height, 100-104%, 20 children f) Height, > or = 105%, 2 children g) Weight, 85-89%, 4 children h) Weight, 90-94%, 15 children i) Weight 95-99%, 31 children j) Weight 100-104%, 21 children k) Weight > or = 105%, 19 children l) Arm circumference, 80-84%, 5 children m) Arm circumference, 85-89%, 26 children n) Arm circumference, 90-94%, 23 children o) Arm circumference 95-99%, 22 children p) Arm circumference > or = 100%, 16 children q) Taste acuity normal, 55 children r) Mild hypogeusia, 17 children s) Moderate and severe hypogeusia, 4 children Height, weight, and arm circumference, as % of median levels, significantly correlated with Zn level. Moderate to severe hypogeusia significantly associated with low Zn levels 9-12 yr old school children, Yugoslavia YUGOSLAVIA; CHILDREN; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; HAIR; METALS; ZINC	Buzina, R. Jusic, M. Sapunar, J. Milanovic, N. 1980 American Journal of Clinical Nutrition 33(11):2262-2267
6896 Hair		NA	65	150-185 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6897 Hair		NA		a) 51-348 ppm b) 77-177 ppm c) 91-241 ppm d) 71-171 ppm	a) 138 +or- 45 ppm b) 137 +or- 25 ppm c) 166 +or- 43.6 ppm d) 126 +or- 26 ppm	a) 12 cm length, 106 samples b) Root section, 18 samples c) Distal section, 18 samples d) Students in a), 32 samples Metropolitan Bombay, India INDIA; ADOLESCENTS; ADULTS; HAIR; ANTIMONY; ARSENIC; BROMINE; CADMIUM; CHLORINE; CHROMIUM; COBALT; COPPER; GOLD; IODINE; IRON; LANTHANUM; MANGANESE; POTASSIUM; SCANDIUM; SELENIUM; SILVER; SODIUM; ZINC; AIR POLLUTION; BIOACCUMULATION; FOSSIL FUELED POWER PLANTS; INDUSTRIAL AREAS; INDUSTRIAL ATMOSPHERES; INDUSTRIAL EMISSIONS; INDUSTRIAL POLLUTION; POPULATION EXPOSURE; URBAN AREAS; INDUSTRIAL CHEMICALS	Bhat, K.R. Arunachalam, J. Yegnasubramanian, S. Gangadharan, S. 1982 Science of the Total Environment 22:169-178

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6898 Hair		AAS	3	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 568 ug/g b) 406 ug/g c) 138 ug/g d) 130 ug/g e) 94.5 ug/g f) 94.3 ug/g	a) Subject 1, unwashed hair b) Subject 1, after 12 successive acetone washes c) Subject 2, unwashed hair d) Subject 2, after 12 successive acetone washes e) Subject 3, unwashed hair f) Subject 3, after 12 successive washes in sodium lauryl sulfate a), c), e), 6-10 determinations, each subject. Data also for other procedures and washing agents. HAIR; COMPARATIVE EVALUATIONS; CADMIUM; COPPER; IRON; MANGANESE; ZINC	Salmela, S. Vuori, E. Kilpio, J.O. 1981 Analytica Chimica Acta 125:131-137
6899 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 65-190 ppm c) 95-230 ppm d) Not applicable e) Not applicable Dry wt	a) 82 +or- 18 ppm b) 127 ppm c) 182 ppm d) 49 ppm e) 150 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6900 Intestine		ES	10	Not given	71 +or- 17 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zn
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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6901 Intestine			3	a) Not applicable b) Not applicable c) Not applicable	a) 77 ug/g b) 321 ug/g c) 97 ug/g Dry weight	a) Pretreatment b) After 2 mo Zn therapy c) 2 controls Peroral jejunal biopsies 12 yr old girl. 6-7 yr old controls. Therapy decreased irritability, nervousness, and restlessness. Remission maintained by 1-2 mg/kg/day. CHILDREN; DISEASES; NUTRITIONAL DEFICIENCIES; BLOOD; HAIR; INTESTINES; SKIN; URINE; METALS; ZINC	Walravens, P.A. Hambidge, K.M. Neldner, K.H. Silverman, A. van Doorninck, W.J. Mierau, G. Favara, B. 1978 Journal of Pediatrics 93(1):71-73
6902 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) 150-440 ppm c) 180-330 ppm d) Not applicable e) Not applicable Dry wt	a) 150 +or- 72 ppm b) 295 ppm c) 250 ppm d) 86 ppm e) 280 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6903 Kidney		AAS	123	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) 6.5 +or- 2.7 uM/g b) 5.8 +or- 2.9 uM/g c) 5.3 +or- 2.6 uM/g d) 7.7 +or- 2.7 uM/g e) 7.6 +or- 2.6 uM/g f) 5.2 +or- 1.4 uM/g g) 8.0 +or- 2.5 uM/g h) 5.1 +or- 1.7 uM/g i) 6.0 +or- 2.5 uM/g	a) All cases b) Hypertension, 35 cases c) Atherosclerosis, 45 cases d) Cancer, 32 cases e) Cancer and metastases, 16 cases f) Leukemia, 7 cases g) Brain tumor, 4 cases h) Renal disease, 4 cases i) Other, 28 cases Autopsies Postiive significant correlation between Zn and Cd in all cases. Smoking and nonsmoking patients CADMIUM; METALS; SELENIUM; ZINC; CADAVERS; CARCINOMAS; HYPERTENSION; KIDNEY DISEASES; LEUKEMIA; KIDNEYS; SMOKING	Shamberger, R.J. Bratush, C.M. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:203-210

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6904 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 86-220 ppm c) 65-400 ppm d) Not applicable e) Not applicable Dry wt	a) 210 +or- 89 ppm b) 153 ppm c) 198 ppm d) 87 ppm e) 270 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6905 Liver		ASV LSV NA	30	31-80 ug/g Wet wt	Not given	Category 1 (first priority element) as proposed by International Workshop on Monitoring Environmental Materials and Specimen Banking Autopsies, Baltimore, MD, Minneapolis, MN, and Seattle, WA MARYLAND; MINNESOTA; WASHINGTON; AUTOPSIES; LIVER; MEASUREMENT METHODS; ALUMINUM; ANTIMONY; ARSENIC; BARIUM; CADMIUM; CHROMIUM; COBALT; COPPER; FLUORINE; IRON; LEAD; MANGANESE; MERCURY; MOLYBDENUM; NICKEL; RUBIDIUM; SELENIUM; SILVER; STRONTIUM; THALLIUM; TIN; VANADIUM; ZINC; POPULATION EXPOSURE	Harrison, S.H. Zeisler, R. Wise, S.A. 1981 EPA 600/S1-81-025, 6 pp.
6906 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 86-220 ppm c) 65-400 ppm d) Not applicable e) Not applicable Dry wt	a) 77 +or- 22 ppm b) 153 ppm c) 198 ppm d) 87 ppm e) 270 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6907 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 74-380 ppm d) Not applicable e) Not applicable Dry wt	a) 110 +or- 34 ppm b) 110 ppm c) 228 ppm d) 150 ppm e) 600 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6908 Nail		NA	66	130-250 ug/g	Not given	Range of means, estimated from graph Aswan, El Kharga, Assuit, Cairo, and Alexandria, Egypt EGYPT; HAIR; NAILS; ANTIMONY; CADMIUM; CESIUM; CHROMIUM; COBALT; IRON; MANGANESE; METALS; MOLYBDENUM; SCANDIUM; SELENIUM; SILVER; TUNGSTEN; ZINC; DRINKING WATER; POPULATION EXPOSURE; SOILS; URBAN AREAS	Kasperek, K. Iyengar, G.V. Feinendegen, L.E. Hashish, S. Mahfouz, M. 1982 Science of the Total Environment 22:149-168
6909 Pancreas		ES	5	Not given	120 +or- 30 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6910 Saliva	Ingestion	AAS	7	a) 172-413 ng/ml b) 157-438 ng/ml c) 171-549 ng/ml d) 178-537 ng/ml	a) 266 +or- 89 ng/ml b) 280 +or- 111 ng/ml c) 302 +or- 136 ng/ml d) 312 +or- 128 ng/ml	a) Baseline levels b) After 1 wk on low Zn diet c) After 2 wk on low Zn diet d) After 3 wk on low Zn diet Range of means for individual patients 23-44 yr old University of Texas students in good health with adequate Zn NUTRITIONAL DEFICIENCIES; TEXAS; ADULTS; SEX; BLOOD PLASMA; SALIVA; ZINC; BIOINDICATORS; DIETS	Freeland-Graves, J.H. Hendrickson, P.J. Ebangit, M.L. Snowden, J.Y. 1981 American Journal of Clinical Nutrition 34:312-321

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6911 Salivary sediment	Ingestion	AAS	5	a) 101-162 ug/g b) 79-118 ug/g	a) Not given b) Not given	a) Baseline levels Zn b) After low Zn diet for 22 days Estimated from graph 23-44 yr old University of Texas students in good health with adequate Zn NUTRITIONAL DEFICIENCIES; TEXAS; ADULTS; SEX; BLOOD PLASMA; SALIVA; ZINC; BIOINDICATORS; DIETS	Freeland-Graves, J.H. Hendrickson, P.J. Ebangit, M.L. Snowden, J.Y. 1981 American Journal of Clinical Nutrition 34:312-321
6912 Skin			5	a) Not given b) Not given c) Not given d) Not given	a) 6.7 ug/g b) 10.4 ug/g c) 26.3 ug/g d) 22.43 ug/g Dry weight	a) Pretreatment, 1 subject b) After 2 mo Zn therapy, subject a) c) After 13 mo Zn therapy, subject a) d) 4 controls Subject a) 31 mo old boy Therapy decreased irritability, nervousness, and restlessness. Remission maintained by 1-2 mg/kg/day. CHILDREN; DISEASES; NUTRITIONAL DEFICIENCIES; BLOOD; HAIR; INTESTINES; SKIN; URINE; METALS; ZINC	Walravens, P.A. Hambidge, K.M. Neldner, K.H. Silverman, A. van Doorninck, W.J. Mierau, G. Pavara, B. 1978 Journal of Pediatrics 93(1):71-73
6913 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 68-440 ppm c) 130-550 ppm d) Not applicable e) Not applicable Dry wt	a) 84 +or- 30 ppm b) 254 ppm c) 325 ppm d) 120 ppm e) 330 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6914 Stomach		ES	10	Not given	71 +or- 17 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6915 Thyroid gland		ES	4	Not given	80 +or- 13 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6916 Tongue		ES	2	Not given	65 +or- 7.8 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6917 Trachea		ES	2	Not given	32 +or- 11 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6918 Urine	Ingestion	Radiometry	12	.01-.15 uCi	Not given	24 hr excretion after 1-2 uCi Zn-65 Estimated from graph Significant correlation with absorption Patients with hypogeusia and hyposmia DISEASES; BODY; URINE; MEASUREMENT METHODS; ZINC; RADIONUCLIDES; METALS	Henkin, R.I. Aamodt, R.L. 1975 Lancet 1(7921):1379-1380

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6919 Urine			3	a) 37-56 ug/24 hr b) 286-1168 ug/24 hr	a) Not given b) Not given	a) Pretreatment b) After Zn therapy Range of means 2.6-12 yr old children with acrodermatitis enteropathica Therapy decreased irritability, nervousness, and restlessness. Remission maintained by 1-2 mg/kg/day. CHILDREN; DISEASES; NUTRITIONAL DEFICIENCIES; BLOOD; HAIR; INTESTINES; SKIN; URINE; METALS; ZINC	Walravens, P.A. Hambidge, K.M. Weldner, K.H. Silverman, A. van Doorninck, W.J. Mierau, G. Favara, B. 1978 Journal of Pediatrics 93(1):71-73
6920 Urine	Ingestion	AAS	2	a) Not given b) Not given c) Not given d) Not given	a) 0.7 mg/24 hr b) 0.7 mg/24 hr c) 0.7 mg/24 hr d) 0.8 mg/24 hr	a) Subject 1, intake 18.1 mg/24 hr, low fiber diet b) Subject 1, intake 19.0 mg/24 hr, high fiber diet c) Subject 2, intake 19.0 mg/24 hr, low fiber diet d) Subject 2, intake 19.4 mg/24 hr, high fiber diet Total dietary intake Means of 10 2-day periods 50% caloric intake from white bread in a) and c) and from high fiber, moderate phytate local bread in b) and d) Both subjects in negative balance on high fiber diet 35 and 24 yr old, wt 56.0 & 60.3 kg, Iran IRAN; ADULTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; URINE; CALCIUM; MAGNESIUM; PHOSPHORUS; ZINC; DIETS; FIBERS; FOODS; METALS	Reinhold, J.G. Faradji, B. Abadi, P. Ismail-Beigi, F. 1976 Journal of Nutrition 106:493-503

Zinc 70 (No postings in CHEMLINE).
Zn
MW 65.38, MP 419.5 C, BP 908 C, VP 1 mm Hg at 487 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6921 Blood, plasma	Ingestion	NA	4	Not given	0.3%	Peak radioactivity, % of 3.2 mg dose Healthy 24-37 yr olds, wt. 54-67 kg ADULTS; BLOOD PLASMA; MEASUREMENT METHODS; METALS; ZINC	Jangnorbani, M. Ting, B.T.G. Istfan, N.W. Young, V.R. 1981 American Journal of Clinical Nutrition 34:581-591

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)
15442-64-5
C34-H30-N4-O4-Zn.2H
MW 626.03

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6922 Blood		Fluorometry	394	3-61 ug/dl	Not given	Subjects with blood Pb <40 ug/dl. Prospective employees, no known occupational Pb exposure BLOOD; MEASUREMENT METHODS; LEAD; METALS; PROTOPORPHYRINS; POPULATION EXPOSURE	Suga, R.S. Fischinger, A.J. Knoch, F.W. 1981 American Industrial Hygiene Association Journal 42:637-642
6923 Blood		Fluorometry		a) 12-105 ug/dl b) 5-100 ug/dl	a) 41.2 +or- 17.0 ug/dl b) 28.6 +or- 12.9 ug/dl	a) Cord blood b) Maternal blood a) significantly higher than b) Range estimated from graph Mothers age 13-40 yr (mean 21.1 yr), babies mean gestational age 39.6 wk, mean birth wt 3,211 g, indigent urban population, KY KENTUCKY; ADULTS; NEWBORN; BLOOD; LEAD; METALS; PORPHYRINS; ZINC; BIOACCUMULATION; POPULATION EXPOSURE; PREGNANCY; URBAN AREAS	Angell, N.F. Lavery, J.P. 1982 American Journal of Obstetrics and Gynecology 142(1):40-46
6924 Blood			1	Not applicable	269 ug/dl	8 wk after chelation therapy (1 g CaNa2-EDTA 2X/day for 5 days) Blood Pb, 103 ug/dl 43 yr old art conservator, NY NEW YORK; ADULTS; CASE HISTORIES; LEAD POISONING; METAL POISONING; BLOOD; URINE; DRUG THERAPY; LEAD; METALS; ZINC; HEALTH HAZARDS; INHALATION; OCCUPATIONAL HAZARDS; PIGMENTS	Fischbein, A. Wallace, J. Anderson, K.E. Sassa, S. Kon, S. Rohl, A.N. Kappas, A. 1982 Journal of the American Medical Association 247(14):2007-2009

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
6925 Adrenal gland		ES	7	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zirconium
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AtW 91.22, MP 1852 C, BP 3577 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6926 Aorta		ES	7	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6927 Bone		ES	5	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6928 Heart		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.4-<0.4 ppm c) <0.4 ppm-<0.4 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) <0.4 ppm c) <0.4 ppm d) <0.4 ppm e) <0.4 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zirconium
7440-67-7
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AtW 91.22, MP 1852 C, BP 3577 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6929 Intestine		ES	10	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6930 Kidney		ES	a) 8 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.4-<0.4 ppm c) <0.4-<0.4 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) <0.4 ppm c) <0.4 ppm d) <0.4 ppm e) <0.4 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6931 Liver		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) <0.4-0.76 ppm c) <0.4-1.4 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) Not given c) Not given d) 0.46 ppm e) 0.50 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zirconium
7440-67-7
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AtW 91.22, MP 1852 C, BP 3577 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6932 Lung		ES	a) 12 b) 2 c) 3 d) 1 e) 1	a) Not given b) 1.3-1.6 ppm c) 0.89-4.1 ppm d) Not applicable e) Not applicable Dry wt	a) 0.49 +or- 0.19 ppm b) 1.4 ppm c) 2.1 ppm d) 0.87 ppm e) 5.0 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6933 Lymph node		ES	a) 3 b) 1 c) 3 d) 1 e) 1	a) Not given b) Not applicable c) 0.4-3.6 ppm d) Not applicable e) Not applicable Dry wt	a) 11 +or- 3.9 ppm b) 1.7 ppm c) 2.4 ppm d) 6.5 ppm e) 18 ppm Dry wt	a) Normal healthy men b) Chromium plating worker c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6934 Pancreas		ES	5	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zirconium
7440-67-7
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AtW 91.22, MP 1852 C, BP 3577 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6935 Spleen		ES	a) 9 b) 2 c) 3 d) 1 e) 1	a) Not given b) 0.64-2.0 ppm c) <0.4-0.67 ppm d) Not applicable e) Not applicable Dry wt	a) <0.4 ppm b) 1.32 ppm c) Not given d) 1.3 ppm e) 1.8 ppm Dry wt	a) Normal healthy men b) Chromium plating workers c) Chromate refining workers d) Airplane painter e) Stone mason Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6936 Stomach		ES	10	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6937 Thyroid gland		ES	4	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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Zirconium
7440-67-7
Zr
AtW 91.22, MP 1852 C, BP 3577 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6938 Tongue		ES	2	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165
6939 Trachea		ES	2	Not given	<0.4 ppm dry wt	Normal tissue Autopsies Japan JAPAN; ADULTS; AUTOPSIES; ADRENAL GLANDS; AORTA; BONES; HEART; INTESTINES; KIDNEYS; LIVER; LUNGS; LYMPH NODES; PANCREAS; SPLEEN; STOMACH; THYROID GLANDS; TRACHEA; ALUMINUM; BARIUM; CADMIUM; CALCIUM; CHROMIUM; COBALT; COPPER; IRON; LEAD; MAGNESIUM; MANGANESE; METALS; MOLYBDENUM; NICKEL; PHOSPHORUS; POTASSIUM; SILICON; SILVER; SODIUM; STRONTIUM; TIN; TITANIUM; VANADIUM; ZINC; BIOACCUMULATION; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; TONGUE; ZIRCONIUM; ELEMENTS	Teraoka, H. 1981 Archives of Environmental Health 36(4):155-165

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
6940 Breath		GC/MS	28	0.4-6 ng/l	1.6 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6941 Breath		GC/MS	28	2.2-8 ng/l	4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6942 Breath		GC/MS	28	0.03-0.29 ng/l	0.095 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6943 Breath		GC/MS	28	0.9-9 ng/l	2.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

1-Pentanol, 2-methyl-
105-30-6
C6-H14-O
MW 102.18, BP 148 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6944 Breath		GC/MS	28	0.5-7.4 ng/l	1.9 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6945 Breath		GC/MS	28	2-12 ng/l	4.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6946 Breath		GC/MS	28	2.5-10 ng/l	5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
6947 Breath		GC/MS	28	1.2-5 ng/l	2.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

1-Propanol, 2,3-dichloro-, phosphate (3:1)
78-43-3
C9-H15-Cl6-O4-P
MW 430.91

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6948 Semen		MS		5-50 ppb	Not given	College students, FL FLORIDA; ADULTS; SEMEN; CHLORINE ORGANIC COMPOUNDS; FIRE RETARDANTS	Hudec, T. Thean, J. Kuehl, D. Dougherty, R.C. 1981 Science 211:951-952

1,1'-Biphenyl, 2,2',3,3',4,4'-hexachloro-
38380-07-3
C12-H4-Cl6
MW 360.86

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6949 Adipose		GC	26	0.05-0.2 ug/g	0.07 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6950 Blood, plasma		GC	26	0.7-0.8 ng/ml	0.8 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,4',5-heptachloro-
35065-30-6
C12-H3-C17
MW 395

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6951 Adipose		GC	26	0.08-1 ug/g	0.2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6952 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 1.18 +or- 0.45 ppb b) 0.28 +or- 0.09 ppb c) 0.11 +or- 0.04 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6953 Blood, plasma		GC	26	0.5-3 ng/ml	1 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,4',5,5'-octachloro-
35694-08-7
C12-H2-C18
MW 429.74

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6954 Adipose		GC	26	Not given	0.1 ug/g	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,4',5,6'-octachloro-
42740-50-1
C12-H2-C18
MW 429.74

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6955 Adipose		GC	26	0.05-0.2 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,2',3,3',4,4',5,6'-octachloro-
42740-50-1
C12-H2-Cl8
MW 429.74

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6956 Blood, plasma		GC	26	0.2-1 ng/ml	0.7 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,5,5',6'-octachloro-
52663-75-9
C12-H2-Cl8
MW 429.74

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6957 Adipose		GC	26	0.05-0.5 ug/g	0.2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6958 Blood, plasma		GC	26	0.2-2 ng/ml	1 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,5,6'-heptachloro-
38411-25-5
C12-H3-Cl7
MW 395.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6959 Adipose		GC	26	0.05-0.2 ug/g	0.09 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6960 Blood, plasma		GC	26	0.2-0.3 ng/ml	0.3 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,5'-hexachloro-
52663-66-8
C12-H3-Cl7
MW 395.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6961 Adipose		GC	26	0.05-0.3 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6962 Blood, plasma		GC	26	0.2-2 ng/ml	0.4 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,3',4,5',6'-heptachloro-
52663-70-4
C12-H3-Cl7
MW 395.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6963 Adipose		GC	26	0.05-0.3 ug/g	0.07 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6964 Blood, plasma		GC	26	0.2-0.5 ng/ml	0.4 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4-tetrachloro-
52663-59-9
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6965 Adipose		GC	26	0.04-3 ug/g	0.3 ug/g Median	Analytically indistinguishable from 3,5,3',5'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,2',3,4-tetrachloro-
52663-59-9
C12-H6-Cl4
MW 291.98

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6966 Blood, plasma		GC	26	0.2-42 ng/ml	1 ng/ml Median	Analytically indistinguishable from 3,5,3',5'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4,4',5,5'-heptachloro-
35065-29-3
C12-H3-Cl7
MW 395

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6967 Adipose		GC	26	0.05-3 ug/g	0.6 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6968 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 1.73 +or- 0.63 ppb b) 0.44 +or- 0.15 ppb c) 0.12 +or- 0.07 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6969 Blood, plasma		GC	26	0.6-8 ng/ml	3 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4,4',5'-hexachloro-
35065-28-2
C12-H4-Cl6
MW 361

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6970 Adipose		GC	26	0.06-4 ug/g	1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,2',3,4,4',5'-hexachloro-
35065-28-2
C12-H4-C16
MW 361

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6971 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 4.66 +or- 1.43 ppb b) 0.65 +or- 0.21 ppb c) 0.17 +or- 0.07 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
6972 Blood, plasma		GC	26	0.5-17 ng/ml	4 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4,4',5',6-heptachloro-
52663-69-1
C12-H3-C17
MW 395.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6973 Adipose		GC	26	0.06-0.2 ug/g	0.1 ug/g	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6974 Blood, plasma		GC	26	0.2-0.8 ng/ml	0.3 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4,5'-pentachloro-
38380-02-8
C12-H5-C15
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6975 Adipose		GC	26	0.08-0.5 ug/g	0.2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,2',3,4,5'-pentachloro-
38380-02-8
C12-H5-Cl5
MW 326.42

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6976 Blood, plasma		GC	26	0.6-2 ng/ml	1 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4',5,5'-hexachloro-
51908-16-8
C12-H4-Cl6
MW 360.86

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6977 Adipose		GC	26	0.05-0.7 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6978 Blood, plasma		GC	26	0.2-2 ng/ml	0.7 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,4',5,5',6-heptachloro-
52663-68-0
C12-H3-Cl7
MW 395.30

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6979 Adipose		GC	26	0.05-0.7 ug/g	0.2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6980 Blood, plasma		GC	26	0.2-2 ng/ml	0.6 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,5,5'-pentachloro-
52663-61-3
C12-H5-C15
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6981 Adipose		GC	26	0.08-0.3 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6982 Blood, plasma		GC	26	0.6-2 ng/ml	0.9 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,5'-tetrachloro-
41464-39-5
C12-H6-C14
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6983 Adipose		GC	26	0.1-5 ug/g	0.5 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6984 Blood, plasma		GC	26	0.4-55 ng/ml	3 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',3,5',6-pentachloro-
38379-99-6
C12-H5-C15
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6985 Adipose		GC	26	0.05-2 ug/g	0.2 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,2',3,5',6-pentachloro-
38379-99-6
C12-H5-Cl5
MW 326.42

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6986 Blood, plasma		GC	26	0.3-9 ng/ml	1 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',4,4',5-pentachloro-
38380-01-7
C12-H5-Cl5
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6987 Adipose		GC	26	0.07-5 ug/g	1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6988 Blood, plasma		GC	26	0.4-12 ng/ml	4 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',4,4',5,5'-hexachloro-
35065-27-1
C12-H4-Cl6
MW 361

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6989 Adipose		GC	26	0.09-4 ug/g	1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6990 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 2.51 +or- 0.96 ppb b) 0.52 +or- 0.22 ppb c) 0.15 +or- 0.07 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206

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1,1'-Biphenyl, 2,2',4,4',5,5'-hexachloro-
35065-27-1
C12-H4-C16
MW 361

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6991 Blood, plasma		GC	26	0.7-12 ng/ml	5 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',4,5,5'-pentachloro-
37680-73-2
C12-H5-C15
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6992 Adipose		GC	26	0.07-0.5 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6993 Blood, plasma		GC	26	0.4-6 ng/ml	0.8 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',4,5'-tetrachloro-
41464-40-8
C12-H6-C14
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6994 Adipose		GC	26	0.06-4 ug/g	0.3 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6995 Blood, plasma		GC	26	0.2-42 ng/ml	2 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,2',5,5'-tetrachloro-
35693-99-3
C12-H6-Cl4
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6996 Adipose		GC	26	0.07-3 ug/g	0.5 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6997 Blood, plasma		GC	26	0.5-23 ng/ml	4 ng/ml Median	Capacitor manuracture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,3,3',4,4',5-hexachloro-
38380-08-4
C12-H4-Cl6
MW 361

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6998 Adipose		GC	26	0.08-2 ug/g	0.4 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
6999 Blood	Ingestion	GC	a) 10 b) 9 c) 7	a) Not given) Not given c) Not given	a) 1.79 +or- 0.69 ppb b) 0.28 +or- 0.07 ppb c) 0.04 +or- 0.02 ppb	a) Taiwan, PCB poisoning b) Japan, PCB poisoning c) Japan, controls Few months (a) and 5 yr (b) after ingesting contaminated rice oil. TAIWAN; JAPAN; BLOOD; CHLORINATED HYDROCARBONS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FOOD CONTAMINATION; POPULATION EXPOSURE; INDUSTRIAL CHEMICALS	Masuda, Y. Kuroki, H. Yamaryo, T. Haraguchi, K. Kuratsune, M. Hsu, S.T. 1981 Chemosphere 11(2):199-206
7000 Blood, plasma		GC	26	0.2-5 ng/ml	2 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,3,3',4,5,5'-hexachloro-
39635-35-3
C12-H4-Cl6
MW 360.86

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7001 Adipose		GC	26	0.05-1 ug/g	0.3 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
7002 Blood, plasma		GC	26	0.4-4 ng/ml	1 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,3,3',4',5-pentachloro-
70424-68-9
C12-H5-Cl5
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7003 Adipose		GC	26	0.09-0.2 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
7004 Blood, plasma		GC	26	0.4-1 ng/ml	0.6 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,3,3',4',6-pentachloro-
38380-03-9
C12-H5-Cl5
MW 326.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7005 Adipose		GC	26	0.07-0.3 ug/g	0.1 ug/g Median	Analytically indistinguishable from 3,4,3',4'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

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1,1'-Biphenyl, 2,3,3',4',6-pentachloro-
38380-03-9
C12-H5-Cl5
MW 326.42

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7006 Blood, plasma		GC	26	0.3-3 ng/ml	0.5 ng/ml Median	Analytically indistinguishable from 3,4,3',4'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,3',4,4',5,5'-hexachloro-
52663-72-6
C12-H4-Cl6
MW 360.86

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7007 Adipose		GC	26	0.05-0.4 ug/g	0.1 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
7008 Blood, plasma		GC	26	0.2-2 ng/ml	0.5 ng/ml Median	Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 2,4,4'-trichloro-
7012-37-5
C12-H7-Cl3
MW 257.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7009 Adipose		GC	26	0.5-183 ug/g	9 ug/g Median	Capacitor manufacture workers. 1976 clinical health survey. Relative concentrations used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
7010 Blood, plasma		GC	26	1-850 ng/ml	27 ng/ml Median	Analytically indistinguishable from 2,5,4'-trichlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey Relative concentration used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,1'-Biphenyl, 3,3',4,5'-tetrachloro-
41464-48-6
C12-H6-C14
MW 291.98

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7011 Adipose		GC	26	0.03-6 ug/g	0.9 ug/g	Analytically indistinguishable from 2,3,4,4'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306
7012 Blood, plasma		GC	26	0.7-29 ng/ml	3 ng/ml Median	Analytically indistinguishable from 2,3,4,4'-tetrachlorobiphenyl Capacitor manufacture workers. 1976 clinical health survey. Relative levels used to calculate adipose-plasma partition ADIPOSE TISSUE; BLOOD PLASMA; POLYCHLORINATED BIPHENYLS; OCCUPATIONAL HAZARDS; INDUSTRIES	Wolff, M.S. Thornton, J. Fischbein, A. Lilis, R. Selikoff, I.J. 1982 Toxicology and Applied Pharmacology 62:294-306

1,2-Benzisothiazolin-3-one, 1,1-dioxide (8 CI)
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide (9 CI)
81-07-2
C7-H5-N-O3-S
MW 183.2, MP 228 C (decomp), BP (sublimes)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7013 Blood, plasma	Ingestion	HPLC	a) 3 b) 1 c) 2	a) 1120-2156 ng/ml b) Not applicable c) 550-575 ng/ml	a) 1533 ng/ml b) 983 ng/ml c) 562 ng/ml	a) Peak level 0.5-1.0 hr after 75 mg/6 hr, area under the concentration-time curve (AUC), 43.6-69.4 ng hr/ml b) Peak level 0.5 hr after 50 mg/6 hr, AUC, 44.4 ng hr/ml c) Peak level 0.5 hr after 25 mg/6 hr, AUC, 44.2-62.4 ng hr/ml Dose given 4x/day for 3 days prior to measurement 27-43 yr old (mean 32), wt 54-96 kg (mean 74), normal subjects, used saccharine regularly ADULTS; BLOOD PLASMA; URINE; FOOD ADDITIVES; SWEETENING AGENTS	Colburn, W.A. Bekersky, I. Blumenthal, H.P. 1981 Clinical Pharmacology and Therapeutics 30(4):558-563
7014 Blood, plasma	Injection Ingestion	HPLC	3	a) 75-0.4 ug/ml b) 80-1.2 ug/ml c) 27-<1.0 ug/ml d) 14-<1.0 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 5 and 400 min after 10 mg/kg IV bolus b) Same as a), plus 500 mg probenecid 12 and 2 hr before and 2 hr after saccharin c) 0.5-1.0 and >25 hr hr after 2.0 g oral, after overnight fast d) 1.5-2 and >25 hr after 2.0 g oral, 1-2 hr after a meal Range of means, estimated from graph 25-37 yr olds, wt 77-126 kg, United Kingdom BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; FOOD ADDITIVES; SWEETENING AGENTS; UNITED KINGDOM	Sweatman, T.W. Renwick, A.G. Burgess, C.D. 1981 Xenobiotica 11(8):531-540

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1,2-Benzisothiazolin-3-one, 1,1-dioxide (8 CI)
1,2-Benzisothiazol-3(2H)-one, 1,1-dioxide (9 CI)
81-07-2
C7-H5-N-O3-S
MW 183.2, MP 228 C (decomp), BP (sublimes)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7015 Blood, plasma	Ingestion	GC/MS	a) 5 b) 5 c) 5	a) 1.83-0.5 ug/ml b) 9.34-1.5 ug/ml c) 13.77-2.0 ug/ml	a) Not given b) Not given c) Not given	a) 50 mg/60 kg b) 150 mg/60 kg c) 333 mg/60 kg 30-60 and 240 min after dose. Levels at 5 min, < 2 ug/ml Range of means, some levels estimated from graph Healthy volunteers BLOOD PLASMA; URINE; SWEETENING AGENTS	Pantarotto, C. Salmona, M. Garattini, S. 1981 Toxicology Letters 9:367-371
7016 Urine	Ingestion	HPLC	a) 3 b) 1 c) 2	a) 77-105 mg b) Not applicable c) 32-34 mg	a) 91 mg b) 75 mg c) 33 mg	a) 75 mg/6 hr b) 50 mg/6 hr c) 25 mg/6 hr Doses given 4x/day for 3 days prior to measurements Excreted 0-6 hr after last dose 27-43 yr old (mean 32), wt 54-96 kg (mean 74), normal subjects, used saccharine regularly ADULTS; BLOOD PLASMA; URINE; FOOD ADDITIVES; SWEETENING AGENTS	Colburn, W.A. Bekersky, I. Blumenthal, H.P. 1981 Clinical Pharmacology and Therapeutics 30(4):558-563
7017 Urine	Ingestion	HPLC	3	a) 86.0-91.3% of dose b) 81.7-88.5% of dose c) 98.6-105.3% of dose d) 97.2-100.7% of dose	a) 89.2 +or- 7.8% of dose b) 86.2 +or- 3.9% of dose c) 101.1 +or- 3.6% of dose d) 98.9 +or- 1.8% of dose	a) 0-96 hr after 2.0 g oral, after overnight fast b) 0-96 hr after 2.0 g oral, 1-2 hr after meal c) 0-48 hr after 10 mg/kg IV d) Same as c) plus 500 mg probenecid 12 and 2 hr before and 2 hr after saccharin 25-37 yr olds, wt 77-126 kg, United Kingdom BLOOD PLASMA; URINE; COMPARATIVE EVALUATIONS; FOOD ADDITIVES; SWEETENING AGENTS; UNITED KINGDOM	Sweatman, T.W. Renwick, A.G. Burgess, C.D. 1981 Xenobiotica 11(8):531-540
7018 Urine	Ingestion	GC/MS	a) 5 b) 5 c) 5	a) Not given b) Not given c) Not given	a) 46.7 mg b) 124.4 mg c) 265.3 mg	a) 78.0% of 50 mg/60 kg dose b) 74.0% of 150 mg/60 kg dose c) 74.9% of 333 mg/60 kg dose Cumulative 24 hr output Healthy volunteers BLOOD PLASMA; URINE; SWEETENING AGENTS	Pantarotto, C. Salmona, M. Garattini, S. 1981 Toxicology Letters 9:367-371

1,3-Cycloheptadiene (No postings in CHEMLINE).
C7-H10
MW 94.16, BP 120-121 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7019 Breath		GC/MS	28	0.05-0.27 ng/l	0.12 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7020 Adipose						Review. Hemoperfusion not effective in removing chlordecone from blood of industrially exposed workers. Oral administration of cholestyramine, increased fecal excretion of pesticide and accelerated disappearance from body Workers at Kepone manufacturing plant, VA Appendiuclar tremor, opsoclonus. Irritability, memory loss, anxiety. Liver damage and low motile sperm count VIRGINIA; ADULTS; LIVER DISEASES; NERVOUS SYSTEM DISEASES; ADIPOSE TISSUE; BILE; BLOOD; FECES; LIVER; MUSCLES; INDUSTRIAL MEDICINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Guzelian, P.S. 1981 Journal of Toxicology and Environmental Health 8:757-766
7021 Bile						Review. Hemoperfusion not effective in removing chlordecone from blood of industrially exposed workers. Oral administration of cholestyramine, increased fecal excretion of pesticide and accelerated disappearance from body Workers at Kepone manufacturing plant, VA Appendicular tremor, opsoclonus. Irritability, memory loss, anxiety. Liver damage and low motile sperm count VIRGINIA; ADULTS; LIVER DISEASES; NERVOUS SYSTEM DISEASES; ADIPOSE TISSUE; BILE; BLOOD; FECES; LIVER; MUSCLES; INDUSTRIAL MEDICINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Guzelian, P.S. 1981 Journal of Toxicology and Environmental Health 8:757-766

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7022 Blood						Review. Hemoperfusion not effective in removing chlordecone from blood of industrially exposed workers. Oral administration of cholestyramine, increased fecal excretion of pesticide and accelerated disappearance from body Workers at Kepone manufacturing plant, VA Appendicular tremor, opsoclonus. Irritability, memory loss, anxiety. Liver damage and low motile sperm count VIRGINIA; ADULTS; LIVER DISEASES; NERVOUS SYSTEM DISEASES; ADIPOSE TISSUE; BILE; BLOOD; FECES; LIVER; MUSCLES; INDUSTRIAL MEDICINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Guzelian, P.S. 1981 Journal of Toxicology and Environmental Health 8:757-766
7023 Liver						Review. Hemoperfusion not effective in removing chlordecone from blood of industrially exposed workers. Oral administration of cholestyramine, increased fecal excretion of pesticide and accelerated disappearance from body Workers at Kepone manufacturing plant, VA Appendicular tremor, opsoclonus. Irritability, memory loss, anxiety. Liver damage and low motile sperm count VIRGINIA; ADULTS; LIVER DISEASES; NERVOUS SYSTEM DISEASES; ADIPOSE TISSUE; BILE; BLOOD; FECES; LIVER; MUSCLES; INDUSTRIAL MEDICINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Guzelian, P.S. 1981 Journal of Toxicology and Environmental Health 8:757-766
7024 Muscle						Review. Hemoperfusion not effective in removing chlordecone from blood of industrially exposed workers. Oral administration of cholestyramine, increased fecal excretion of pesticide and accelerated disappearance from body Workers at Kepone manufacturing plant, VA Appendicular tremor, opsoclonus. Irritability, memory loss, anxiety. Liver damage and low motile sperm count VIRGINIA; ADULTS; LIVER DISEASES; NERVOUS SYSTEM DISEASES; ADIPOSE TISSUE; BILE; BLOOD; FECES; LIVER; MUSCLES; INDUSTRIAL MEDICINE; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; PESTICIDE RESIDUES	Guzelian, P.S. 1981 Journal of Toxicology and Environmental Health 8:757-766

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
7025 Breath		GC/MS	28	1.9-7.3 ng/l	3.8 ng/l	Estimated from graph Healthy 18-60 yr old nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7026 Blood		GC	100	a) Not detected-143.5 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 21.2 +or- 30.4 ppb b) 20.6 +or- 30.7 ppb c) 22.1 +or- 28.6 ppb d) 17.9 +or- 25.5 ppb e) 20.4 +or- 26.5 ppb f) 23.9 +or- 30.3 ppb g) 20.8 +or- 26.5 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Maternal blood, collected 8-12 hr before parturition Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134
7027 Blood, fetal		GC	100	a) Not detected-253.3 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 19.8 +or- 34.3 ppb b) 18.5 +or- 105.0 ppb c) 22.6 +or- 25.4 ppb d) 34.9 +or- 32.8 ppb e) 17.3 +or- 30.7 ppb f) 14.9 +or- 17.6 ppb g) 22.8 +or- 46.7 ppb	a) All subjects b) 56 subjects, mother's age 18-25 yr c) 34 subjects, mother's age 26-34 yr d) 36 subjects, vegetarian mothers e) 54 subjects, non-vegetarian mothers f) 42 subjects, rural g) 48 subjects, urban Cord blood, collected at delivery d) and e), f) and g) significantly different Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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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-Cl6
MW 365.93, MP 104 C, VP 6X10(E-6) mm Hg at 25 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7028 Placenta		GC	100	a) Not detected-83.3 ppb b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 12.7 +or- 20.4 ppb b) 13.7 +or- 22.7 ppb c) 11.2 +or- 15.9 ppb d) 12.1 +or- 27.5 ppb e) 13.8 +or- 22.5 ppb f) 15.3 +or- 29.0 ppb g) 12.3 +or- 18.7 ppb	a) All subjects b) 60 subjects, ages 18-25 yr c) 40 subjects, ages 26-34 yr d) 42 subjects, vegetarians e) 58 subjects, non-vegetarians f) 43 subjects, rural g) 57 subjects, urban Tissue collected at delivery Residents of Lucknow, India INDIA; ADULTS; AGE; FETUS; BLOOD; PLACENTA; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; AGRICULTURE; BIOACCUMULATION; DIETS; PREGNANCY; RURAL AREAS; URBAN AREAS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Saxena, M.C. Siddiqui, M.K.J. Bhargava, A.K. Krishna Murti, C.R. Kutty, D. 1981 Archives of Toxicology 48:127-134

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,endo- (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,2abeta,3alpha,6alpha,6abeta,7beta,7aalpha)- (9 CI)
72-20-8
C12-H8-Cl6-O
MW 380.9, MP 200 C (decomp), also reported as 245 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7029 Adipose		GC	a) 19 b) 9 c) 9	a) Not detected b) Not detected c) Not detected-0.02 ug/g	a) Not applicable b) Not applicable c) Not given	a) Torreon, Mexico. Agricultural region with high pesticide use b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas c) Peubla. Industrial and traditional agricultural region with low pesticide use (2 samples >0.01 ug/g) Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269

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
7030 Adipose		GC	a) 19 b) 9 c) 9	a) 0.05-0.24 ug/g b) Not detected-0.49 ug/g c) Not detected-0.12 ug/g	a) 0.06 +or- 0.07 ug/g b) 0.18 +or- 0.15 ug/g c) Not given	a) Torreon, Mexico. Agricultural region with high pesticide use (11 samples >0.01 ug/g) b) Mexico City. Pesticide exposure mainly from foods shipped in from other areas (8 samples >0.01 ug/g) c) Peubla. Industrial and traditional agricultural region with low pesticide use (2 samples >0.01 ug/g) Levels based on extractable lipids. Nondetectable levels=0.005 ug/g Residents of Mexico MEXICO; AUTOPSIES; ADIPOSE TISSUE; SURGERY; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; DDD; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; LINDANE; PESTICIDES; PESTICIDE RESIDUES; POPULATION EXPOSURE; URBAN AREAS	Albert, L. Mendez, F. Cebrian, M.E. Portales, A. 1980 Archives of Environmental Health 35(5):262-269

2-Butanol, 3-methyl-
598-75-4
C5-H12-O
MW 88.15, BP 128 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7031 Breath		GC/MS	28	0.09-1.9 ng/l	0.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7032 Breath		GC/MS	28	0.2-2.1 ng/l	0.65 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7033 Breath		GC/MS	28	0.35-8.5 ng/l	1.7 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

2-Pinene (8 CI)
Bicyclo(3.1.1)hept-2-ene, 2,6,6-trimethyl- (9 CI)
80-56-8
C10-H16
MW 136.23, BP 155-156 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7034 Blood	Ingestion	GC/MS	1	17 ->1 ug/ml	Not applicable	1 and 6 days after ingesting 400-500 ml pine oil which contained 57% alpha pinene Estimated from graph 49 yr old, wt 85 kg, attempted suicide Headache, erythema of mouth and larynx, flushed face, ataxia, spontaneous hyperventilation. 10 hr after ingestion, impaired consciousness, drop in blood pressure, leukocytosis BLOOD; URINE; METABOLISM; METABOLITES; INDUSTRIAL CHEMICALS; SOLVENTS	Koppel, C. Tenczer, J. Tonnesmann, U. Schrop, T. Ibe, K. 1981 Archives of Toxicology 49:73-78
7035 Urine	Ingestion	GC/MS	1	Not applicable	100 mg	10 day cumulative excretion of metabolite (bornylacetate) of alpha pinene, after ingesting 400-500 ml pine oil (57% alpha pinene) 49 yr old, wt 85 kg, attempted suicide Headache, erythema of mouth and larynx, flushed face, ataxia, spontaneous hyperventilation. 10 hr after ingestion, impaired consciousness, drop in blood pressure, leukocytosis BLOOD; URINE; METABOLISM; METABOLITES; INDUSTRIAL CHEMICALS; SOLVENTS	Koppel, C. Tenczer, J. Tonnesmann, U. Schirop, T. Ibe, K. 1981 Archives of Toxicology 49:73-78

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
7036 Breath		GC/MS	28	0.23-1.8 ng/l	0.65 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7037 Breath		GC/MS	28	0.28-4 ng/l	1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7038 Breath		GC/MS	28	0.35-4.5 ng/l	1.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7039 Breath		GC/MS	28	0.38-3.8 ng/l	1.2 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

2,2,5,5-Tetramethylhexane (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7040 Breath		GC/MS	28	0.15-1.5 ng/l	0.45 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

2,3,3-Trimethylhexane (No postings in CHEMLINE).
C9-H2-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
7041 Breath		GC/MS	28	0.35-3.3 ng/l	1.1 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7042 Breath		GC/MS	28	0.6-3 ng/l	1.4 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7043 Breath		GC/MS	28	0.2-1.6 ng/l	0.55 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7044 Breath		GC/MS	28	0.08-0.35 ng/l	0.18 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

3-Hexanone, 2,4-dimethyl-
18641-70-8
C8-H16-O
MW 128.21, BP 145 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7045 Breath		GC/MS	28	0.035-0.52 ng/l	0.13 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7046 Breath		GC/MS	28	0.5-6 ng/l	1.8 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7047 Breath		GC/MS	28	0.09-0.55 ng/l	0.23 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

3,3-Diethylpentane (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7048 Breath		GC/MS	28	0.09-0.9 ng/l	0.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

3,4-Dimethylheptane (No postings in CHEMLINE).
922-28-1
C9-H2-O
MW 128.25, BP 140.6 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7049 Breath		GC/MS	28	0.55-5 ng/l	1.5 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

4-nonenal, (E)-
2277-16-9
C9-H16-O

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7050 Breath		GC/MS	28	0.65-9 ng/l	2.3 ng/l	Estimated from graph Healthy 18-60 yr olds, nonsmokers. Rigid protocol 14 days before and during study to minimize number and amount of exogenous constituents. ADULTS; BREATH; ALCOHOLS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES	Krotoszynski, B. Gabriel, G. O'Neill, H. Claudio, M.P.A. 1977 Journal of Chromatographic Science 15:239-244

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
7051 Bile	Ingestion	Colorimetry	2	0.10-3.0 ppm	Not given	Suicide victims 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7052 Blood, plasma	Ingestion	Colorimetry	a) 1 b) 1	a) Not given b) >0.25-0.041 ppm	a) 1.5 ppm b) Not given	a) 30 hr after 2.5 cups of 21% solution. Postmortem sample 0.5 ppm b) 20 hr and 13 days after 0.5 cups of 20% solution Suicides 28 yr old Caucasian and 18 yr old Oriental, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7053 Brain	Ingestion	Colorimetry	3	0.09-0.3 ppm	Not given	Suicide victims 18 yr old Oriental and 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928

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4,4'-Bipyridinium, 1,1'-dimethyl-
4685-14-7
C12-H14-N2
MW 186, MP 300 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALITICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7054 Heart	Ingestion	Colorimetry	3	0.01-0.11 ppm	Not given	Suicide victims 18 yr old Oriental and 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7055 Kidney	Ingestion	Colorimetry	3	0.02-7.0 ppm	Not given	Suicide victims 18 yr old Oriental and 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7056 Liver	Ingestion	Colorimetry	3	0.12-2.0 ppm	Not given	Suicide victims 18 yr old Oriental and 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928

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4,4'-Bipyridinium, 1,1'-dimethyl-
4685-14-7
C12-H14-N2
MW 186, MP 300 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7057 Lung	Ingestion	Colorimetry	3	0.05-3.0 ppm	Not given	Suicide victims 18 yr old Oriental and 28 and 57 yr old Caucasians, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7058 Pleural fluid	Ingestion	Colorimetry	1	Not given	0.049 ppm	3 days after 0.5 cups of 20% solution, suicide victim 18 yr old Oriental, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928
7059 Spleen			1	Not applicable	3.0 ppm	Suicide victim 28 yr old, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928

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4,4'-Bipyridinium, 1,1'-dimethyl-
4685-14-7
C12-H14-N2
MW 186, MP 300 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7060 Urine	Ingestion	Colorimetry	a) 1 b) 1	a) 37-0.27 ppm b) Not given	a) Not given b) 18 ppm	a) 20 hr and 13 days after 0.5 cups of 20% solution b) Postmortem, 2 days after 2.5 cups of 21% solution Suicides 18 yr old Oriental and 28 yr old Caucasian, California Nausea, muscle cramps, anuria, hypotension, shock Lungs heavy and airless with congestion, edema, and fibrosis. Bronchi and trachea contained thick bloody liquid. Liver enlarged with greenish or yellow discoloration and centrilobular necroses. Acute tubular necrosis of kidney. Cortical necrosis and focal hemorrhages of adrenal. CALIFORNIA; ADULTS; AUTOPSIES; SUICIDE; BLOOD PLASMA; PLEURAL FLUID; URINE; MEASUREMENT METHODS; PESTICIDES	Russell, L.A. Stone, B.E. Rooney, P.A. 1981 Clinical Toxicology 18(8):915-928

(3,4'-Bipyridin)-6(1H)-one, 5-amino-
60719-84-8
C10-H9-N3-O
MW 187.22

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7061 Blood, plasma	Injection Ingestion	HPLC	a) 4 b) 7	a) 3.4-1.3 ug/ml b) 12-30 ug/ml	a) Not given b) Not given	a) 45 min and 2 hr after 1.5 mg/kg IV bolus and sustained infusion of 5 ug/kg/min. Final measurement 1.7 ug/ml at 10 hr b) 0.5 and 1.5 hr after 3 mg/kg oral. Final measurement 1.5 ug/ml at 5 hr Range of means, estimated from graph Patients with congestive heart failure HEART DISEASES; BLOOD PLASMA; DRUG THERAPY; DRUGS	Edelson, J. LeJemtel, T.H. Alousi, A.A. Biddlecome, C. Maskin, C.S. Sonnenblick, E.H. 1981 Clinical Pharmacology and Therapeutics 29(6):723-728

Acetamide, N-amidino-2-(2,6-dichlorphenyl)- (8 CI)
Benzeneacetamide, N-(aminoiminomethyl)-2,6-dichloro- (9 CI)
29110-47-2
C9-H9-Cl2-N3-O
MW 246.11

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7062 Blood, plasma	Injection Ingestion	GC/MS	18	a) 3.5-9.7 ng/ml b) 0.8-1.9 ng/ml	a) Not given b) Not given	a) Day 5 of therapy b) 48 hr after last dose Dose 3 mg/day Levels not significantly correlated with degree of renal impairment 21-65 yr old hypertensive patients with glomerular filtration rate between 3.8-113 ml/min. GERMANY; HYPERTENSION; KIDNEY DISEASES; BLOOD PLASMA; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; GERMANY	Kirch, W. Kohler, H. Braun, W. Gizycki, C.V. 1980 Clinical Pharmacokinetics 5:476-483
7063 Blood, serum	Injection	GC/MS		a) 23-2 ng/ml b) 12-2 ng/ml	a) Not given b) Not given	a) Hypertensive patients with normal renal function b) Uremic patients Initial measurement and 48 hr after 3 mg, IV Range of means estimated from graph GERMANY; HYPERTENSION; KIDNEY DISEASES; BLOOD PLASMA; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS	Kirch, W. Kohler, H. Braun, W. Gizycki, C.V. 1980 Clinical Pharmacokinetics 5:476-483
7064 Urine	Injection	GC-EC	a) 6 b) 6 c) 6	a) Not given b) Not given c) Not given	a) 57 +or- 32.0% (1.71 g) b) 14.0 +or- 9.0% (0.42 g) c) 7.5 +or- 2.4% (0.23 g)	a) Normal renal function b) Moderate renal impairment c) Uremic patients Cumulative excretion up to 48 hr after 3 mg, IV 21-65 yr old hypertensive patients GERMANY; HYPERTENSION; KIDNEY DISEASES; BLOOD PLASMA; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; GERMANY	Kirch, W. Kohler, H. Braun, W. Gizycki, C.V. 1980 Clinical Pharmacokinetics 5:476-483

Acetamide, 2-(p-(2-hydroxy-3-(isopropylamino)propoxy)phenyl)- (8 CI)
Benzeenacetamide, 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
7065 Blood, plasma	Ingestion	Fluorometry	6	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) 511 +or- 59 ng/ml b) 250 +or- 13 ng/ml c) 463 +o- 56 ng/ml d) 463 +or- 56 ng/ml e) 410 +or- 28 ng/ml f) 325 +or- 27 ng/ml g) 360 +or- 58 ng/ml h) 514 +or- 80 ng/ml S.E.	a) Single dose 100 mg b) Single dose 100 mg plus 500 mg Ca c) Single dose 100 mg plus 5.6 g Al(OH)3 d) Single dose 100 mg plus 40 mg furosemide e) Dose as in a) for 6 days f) Dose as in b) for 6 days g) Dose as in c) for 6 days h) Dose as in d) for 6 days Peak level 2.5-4.0 hr after last dose Al(OH)3 decreased mean peak 20% Ca decreased mean peak 51% and increased elimination half-life Healthy 25-32 yr olds ADULTS; BLOOD PLASMA; URINE; ANTIARRHYTHMIC AGENTS; ANTIHYPERTENSIVE AGENTS; DIURETICS; DRUG THERAPY; DRUGS; ALUMINUM; CALCIUM; BLOOD PRESSURE	Kirch, W. Schafer-Korting, M. Axthelm, T. Kohler, H. Mutschler, E. 1981 Clinical Pharmacology and Therapeutics 30(4):429-435
7066 Blood, plasma	Ingestion	GC	a) 5 b) 5 c) 5 d) 5	a) 0.5-0.03 ug/ml b) 0.6-0.2 ug/ml c) 0.8-0.08 ug/ml d) 1.1-0.05 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 1 and 33 hr after 25 mg b) 2 and 48 hr after 50 mg. Initial measurement 0.03 ug/ml at 1 hr c) 1 and 48 hr after 100 mg d) 2 and 48 hr after 200 mg. Initial measurement 0.09 ug/ml at 1 hr Range of means, estimated from graph Healthy 18-33 yr olds Duration of cardiac beta blocking activity determined by elimination half life and dose. ADULTS; BLOOD PLASMA; DRUGS; COMPARATIVE EVALUATIONS	Harron, D.W.G Balnave, K. Kinney, C.D. Wilson, P. Russell, C.J. Shanks, F.G. 1981 Clinical Pharmacology and Therapeutics 29(3):295-302
7067 Urine	Injection Ingestion	Fluorometry	6	a) 3.9-5.0 mg b) Not applicable 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) 4.4 +or- 0.2 mg b) 14.3 mg c) 40 +or- 6 mg d) 31 +or- 3 mg e) 48 +or- 8 mg f) 48 +or- 8 mg g) 47 +or- 5 mg h) 36 +or- 3 mg i) 31 +or- 6 mg j) 36 +or- 6 mg S.E.	a) After 5 mg IV, 5 subjects b) After 20 mg IV, 1 subject c) After single oral dose, 100 mg, 6 subjects d) After single oral dose, 100 mg, plus 500 mg Ca, 6 subjects e) After single oral dose, 100 mg, plus 5.6 g Al(OH)3 6 subjects f) After single oral dose, 100 mg, plus 40 mg furosemide, 6 subjects g) Dose as in c) for 6 days, 6 subjects h) Dose as in d) for 6 days, 6 subjects i) Dose as in e) for 6 days, 6 subjects j) Dose as in f) for 6 days, 6 subjects 48 hr total after last dose Kinetics changed with addition of Ca Healthy 25-32 yr olds ADULTS; BLOOD PLASMA; URINE; ANTIARRHYTHMIC AGENTS; ANTIHYPERTENSIVE AGENTS; DIURETICS; DRUG THERAPY; DRUGS; ALUMINUM; CALCIUM; BLOOD PRESSURE	Kirch, W. Schafer-Korting, M. Axthelm, T. Kohler, H. Mutschler, E. 1981 Clinical Pharmacology and Therapeutics 30(4):429-435

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7068 Blood, serum	Injection	CC	12	a) 3.94-76.84 ug/ml b) 0.41-3.9 ug/ml c) 9.3-66.67 ug/ml d) 3.66-43.7 ug/ml	a) 27.94 +or- 19.13 ug/ml b) 1.59 +or- 0.93 ug/ml c) 29.64 +or- 16.17 ug/ml d) 13.82 +or- 11.61 ug/ml	a) Peak levels chloramphenicol succinate (prodrug) b) 6 hr, chloramphenicol succinate c) Peak levels chloramphenicol (metabolite) d) Trough levels chloramphenicol Steady states After chloramphenicol succinate, 100 mg/kg/day, in 4 equal doses, 0.5-1 hr IV for at least 2 days before steady-state measurements Data show incomplete hydrolysis of chloramphenicol succinate to chloramphenicol 2.5 mo-20 yr old patients CHILDREN; INFANTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES	Nahata, M.C. Powell, D.A. 1981 Clinical Pharmacology and Therapeutics 30(3):368-372
7069 Blood, serum	Injection	Colorimetry	a) 8 b) 2	a) 50-28 ug/ml b) 6.7-52 ug/ml	a) Not applicable b) Not applicable	a) 2 and 6 hr after 25 mg/kg IV. Initial measurement 35 ug/ml b) Initial measurement and 2 hr after 25 mg/kg IV. Level at 6 hr 9.5 ug/ml. Phenobarbital also given a) Significantly higher than b) at 4 hr Range of means, estimated from graph 3-18 mo old infants, treated for meningitis, brain abcess, or pneumonia RESPIRATORY DISEASES; INFANTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; ANTIBIOTICS; DRUG INTERACTION; DRUG THERAPY; DRUGS	Burckart, G.J. Barrett, F.F. Straughn, A.B. Ternullo, S.B. 1982 *Journal of Clinical Pharmacology* 22:49-52
7070 Urine	Injection	CC	12	a) 7.58%-42.56% b) 3.05%-25.8%	a) Not given b) Not given	a) Unchanged chloramphenicol succinate (prodrug) b) Chloramphenicol (metabolite) % of dose recovered during 6 hr interval After chloramphenicol succinate, 100 mg/kg/day, in 4 equal doses, 0.5-1 hr IV for at least 2 days before measurement Data demonstrated incomplete hydrolysis of chloramphenicol succinate to chloramphenicol 2.5 mo-20 yr old patients CHILDREN; INFANTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES	Nahata, M.C. Powell, D.A. 1981 Clinical Pharmacology and Therapeutics 30(3):368-372

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
7071 Blood, plasma	Ingestion	HPLC	1	270-40 ug/ml	Not given	7.5 and 30.5 hr after overdose of 30-40 750-mg capsules Estimated from graph 26 yr old who attempted suicide ADULTS; CASE HISTORIES; BLOOD PLASMA; URINE; ANALGESICS; DRUG ABUSE; DRUGS	Melethil, S. Poklis, A. Schwartz, H.S. 1981 Veterinary and Human Toxicology 23(6):421-423
7072 Blood, plasma		GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 1,150 mg/l b) 810 mg/l c) 47 mg/l	a) At admission b) 17 hr later, at beginning of charcoal hemoperfusion c) After 10 hr hemoperfusion Dose unknown 43 yr old Unconscious, hypotensive, recurrent myoclonus, vertical nystagmus, metabolic acidosis, low plasma bicarbonate, cerebral infarcts, intracerebral hematoma UNITED KINGDOM; ADOLESCENTS; ADULTS; CASE HISTORIES; BLOOD PLASMA; DRUG ABUSE; DRUGS; HYPNOTICS; MUSCLE RELAXANTS; THEOPHYLLINES	Raper, S. Crome, P. Vale, A. Helliwell, M. Widdop, B. 1982 Archives of Toxicology 49:303-310
7073 Blood, plasma		HPLC	a) 15 b) 17 c) 12 d) 14 e) 3 f) 7 g) 26 h) 52	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) 136 +or- 46 ug/ml b) 310 +or- 161 ug/ml c) 2310 +or- 910 ug/ml d) 2626 +or- 618 ug/ml e) 1126 +or- 367 ug/ml f) 3255 +or- 1446 ug/ml g) 30.2 +or- 3.5 ug/ml h) 27 +or- 2.1 ug/ml	a) Acetylcysteine therapy within 10 hr of overdose, 12-16 yr olds b) Same as a), 17-21 yr olds c) Acetylcysteine Therapy 10-24 hr postingestion, 12-16 yr olds d) Same as c), 17-21 yr olds e) Acetylcysteine therapy 24+ hr postingestion, 12-16 yr olds f) Same as e), 17-21 yr olds g) Ingestion of nontoxic dose, 12-16 yr olds h) As in g) 17-21 yr olds Known or suspected ingestion of 7.5 g or more. Drug overdose victims No relationship to subsequent Reye's syndrome could be demonstrated ADOLESCENTS; CHILDREN; BLOOD PLASMA; ANALGESICS; DRUG ABUSE; DRUGS	Rumack, B.H. Peterson, R.G. 1978 Pediatrics 62(suppl.):898-903
7074 Blood, serum	Ingestion	HPLC	1	Not applicable	21 mg/l	1 day after about 20 500 mg tablets 43 yr old alcoholic, The Netherlands Drowsiness, thrombocytopenia and diffuse abdominal pain CASE HISTORIES; CHILDREN; BLOOD SERUM; ANALGESICS; ANTI-INFLAMMATORY AGENTS; DRUGS; NETHERLANDS; ADULTS	Uges, D.R.A. Bloemhof, H. Christensen, E.K.J. 1981 Pharmaceutisch Weekblad Scientific Edition 3:205-211

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7075 Blood, serum	Ingestion		1	a) Not applicable b) Not applicable	a) 94 ug/ml b) 26 ug/ml	a) 24 hr after estimated 35 325-mg tablets b) 48 hr 3 yr old, wt 14.2 kg, with acetaminophen poisoning, NC Headache, nausea, vomiting, anorexia, paleness, lethargy, somnolence, followed by high levels of hepatic enzymes and bilirubin. Increased prothrombin time due to liver necrosis. NORTH CAROLINA; CHILDREN; BLOOD SERUM; ANALGESICS; ANTIPYRETICS; DRUGS	Arena, J.M. Rourk, M.H., Jr. Sibrack, C.D. 1978 Pediatrics 61(1):68-72
7076 Urine	Ingestion	Colorimetry	1	294-370 mg/hr	331 mg/hr	10-22.5 hr after overdose of 30-40 750 mg capsules 26 yr old who attempted suicide ADULTS; CASE HISTORIES; BLOOD PLASMA; URINE; ANALGESICS; DRUG ABUSE; DRUGS	Melethil, S. Poklis, A. Schwartz, H.S. 1981 Veterinary and Human Toxicology 23(6):421-423

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
7077 Blood, serum	Ingestion	GC	1	Not applicable	0.18 g/l	Unknown dose of ethanol-isopropanol 45 yr old Coma, respiratory distress BLOOD SERUM; DRUG ABUSE; DRUGS; ALCOHOLS	Vasiliades, J. Pollock, J. Robinson, C.A. 1978 Clinical Chemistry 24(2):383-385

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
7078 Blood, plasma		AAS	a) 20 b) 20	a) Not given b) Not given	a) 1.59 +or- 1.26 umol/l b) 4.39 +or- 3.69 umol/l	a) Limited care dialysis patients. Daily oral Al(OH3) dose 5.13 +or- 4.3 g. Al dialysate 0.037 umol/l b) Home dialysis patients. Daily oral Al(OH3) dose 5.4 +or- 6.7 g. Al dialysate 0.37 +or- 0.49 umol/l b) significantly higher than a) Clinically stable patients on intermittent dialysis >9 months. HEMODIALYSIS; KIDNEY DISEASES; CALCIUM; METALS; PHOSPHORUS; BLOOD; BLOOD PLASMA; ALUMINUM	Zumkley, H. Bertram, H.P. Graefe, U. Langer, K. 1980 Proceedings, University of Missouri Annual Conference on Trace Substances in Environmental Health 14:299-303

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7079 Blood, plasma	Ingestion	AAS	6	a) 10-27 ug/l 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 m) Not given n) Not given o) Not given p) Not given q) Not given	a) 19 ug/l b) 42 ug/l c) 117 ug/l d) 77 ug/l e) 36 ug/l f) 46 ug/l g) 29 ug/l h) 22 ug/l i) 39 ug/l j) 101 ug/l k) 125 ug/l l) 48 ug/l m) 94 ug/l n) 71 ug/l o) 43 ug/l p) 88 ug/l q) 82 ug/l	a) 71 yr old with osteoporosis, Al intake 3.28 mg/day, Al balance -0.7 mg/day, periods 1-5 b) Patient a), intake 5.22 mg/day, balance 0.3 mg/day, periods 6-10 c) Patient a), intake 1082 mg/day (diet plus 90 ml/day Maalox), balance 255 mg/day, periods 11-14 d) Patient a), intake 5.09 mg/day, balance -0.2 mg/day, periods 15-18 e) 69 yr old, intake 4.93 mg/day, balance -24.7 mg/day, periods 1-4 f) Patient e), intake 1910 mg/day (diet plus 90 ml/day Amphogel), Al balance 247 mg/day, periods 5-7 g) 42 yr old with osteoporosis, intake 1637 mg/day (diet plus 120 ml/day Mylanta), balance 250 mg/day, periods 10-14 h) Patient g), intake 3.34 mg/day, balance -8.8 mg/day, periods 15-19 i) 54 yr old with osteoporosis and cerebellar degeneration, intake 5.15 mg/day, Al balance -3.5 mg/day, periods 1-5 j) Patient i), intake 1081 mg/day (diet plus 90 ml/day Maalox), balance 89 mg/day, periods 6-10 k) Patient i), intake 5.28 mg/day, balance -6.0 mg/day, periods 11-15 l) 50 yr old, history of osteoporosis and alcoholism, intake 3.67 mg/day, balance -3.9 mg/day, periods 1-5 m) Patient l), intake 1080 mg/day (diet plus 90 ml/day Maalox), balance 23 mg/day, periods 6-10 n) patient l), intake 3.54 mg/day, balance -10.6 mg/day, periods 11-14 o) 58 yr old, history tumoral calcinosis, intake 3.57 mg/day, balance -5.2 mg/day, periods 1-7 p) Patient o), intake 2899 mg/day (diet plus Amphogel and Maalox), balance 276 mg/day, periods 8-16 q) Patient o), intake 2719 mg/day (diet plus Amphogel and Maalox), balance 314 mg/day, periods 17-21 Each period = 6 days Data mean of all 6 day periods on constant intake Al in carmine (used as stool marker) included in intake Maalox, Mylanta, and Amphogel, commercial antacids containing 12.0-21.2 g Al/l Volunteers admitted for evaluation of various medical problems, IL ILLINOIS; ADULTS; BONE DISEASES; DISEASES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; ANTACIDS; ALUMINUM; BIOACCUMULATION; DIETS	Gorsky, J.E. Dietz, A.A. Spencer, H. Osis, D. 1979 Clinical Chemistry 25(10):1739-1743
7080 Cartilage	Ingestion	Polarography	a) 1 b) 4	a) Not given b) Not given	a) 22 ug/g b) 8.3 +or- 2.0 ug/g Wet wt S.E.	a) 48 yr old on 4-10 g daily dose Al-hydroxide for 5 yr b) Controls Patient on hemodialysis for chronic renal failure after transplant rejection. Controls had not received Al compounds ADULTS; BONE DISEASES; KIDNEY DISEASES; CARTILAGE; SYNOVIAL MEMBRANES; HEMODIALYSIS; ALUMINUM	Netter, P. Burnel, D. Hutin, M.F. Kessler, M.F. Faure, G. 1981 Lancet 1(8226):1056-1057

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7081 Synovial fluid	Ingestion	Pulse-polarograph y	a) 6 b) 1	a) Not given b) Not given	a) 10.8 +or- 5.0 ug/l b) 87 ug/l S.E.	a) Controls b) 48 yr old on 4-10 g daily dose Al-hydroxide for 5 yr Patient on hemodialysis for chronic renal failure after transplant rejection. Controls had not received Al compounds. ADULTS; BONE DISEASES; KIDNEY DISEASES; CARTILAGE; SYNOVIAL MEMBRANES; HEMODIALYSIS; ALUMINUM	Netter, P. Burnel, D. Hutin, M.F. Kessler, M.F. Faure, G. 1981 Lancet 1(8228):1056-1057
7082 Synovial tissue	Ingestion	Polarography	5	a) Not given b) Not given	a) 3.7 ug/g b) 2.2 ug/g c) 0.8 +or- 0.2 ug/g Wet wt S.E.	a) 48 yr old on 4-10 g daily dose Al-hydroxide for 5 yr. Tissue sample from anterior capsule of femoral head b) Patient a). Tissue sample from posterior capsule of femoral head c) 4 Controls Patient on hemodialysis for chronic renal failure after transplant rejection. Controls had not received Al compounds ADULTS; BONE DISEASES; KIDNEY DISEASES; CARTILAGE; SYNOVIAL MEMBRANES; HEMODIALYSIS; ALUMINUM	Netter, P. Burnel, D. Hutin, M.F. Kessler, M.F. Faure, G. 1981 Lancet 1(8228):1056-1057

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7083 Urine	Ingestion	AAS	6	a) 0.051-0.084 mg/day b) 0.021-0.048 mg/day c) 0.184-0.255 mg/day d) 0.053-0.111 mg/day e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given k) Not given l) Not given m) Not given n) Not given o) Not given p) Not given q) Not given r) Not given s) Not given	a) 0.066 mg/day b) 0.033 mg/day c) 0.221 mg/day d) 0.080 mg/day e) 0.098 mg/day f) 0.282 mg/day g) 0.338 mg/day h) 0.229 mg/day i) 0.230 mg/day j) 0.200 mg/day k) 0.051 mg/day l) 0.173 mg/day m) 0.053 mg/day n) 0.048 mg/day o) 0.139 mg/day p) 0.076 mg/day q) 0.067 mg/day r) 0.223 mg/day s) 0.211 mg/day	a) 71 yr old with osteoporosis, intake 3.28 mg/day, Al balance -0.7 mg/day, periods 1-5 b) Patient a), intake 5.22 mg/day, balance 0.3 mg/day, periods 6-10 c) Patient a), intake 1082 mg/day (diet plus 90 ml/day Maalox), balance 255 mg/day, periods 11-14 d) Patient a), intake 5.09 mg/day, balance -0.2 mg/day, periods 15-18 e) 69 yr old, intake 4.93 mg/day, balance -24.7 mg/day, periods 1-4 f) Patient e), intake 1910 mg/day (diet plus 90 ml/day Amphogel), balance 247 mg/day, periods 5-7 g) 42 yr old with osteoporosis, intake 1249 mg/day (diet plus 90 ml/day Mylanta), balance 258 mg/day, periods 1-5 h) Patient g), intake 1250 mg/day (diet plus 90 ml/day Mylanta), balance 92 mg/day, periods 6-9 i) Patient g), intake 1637 mg/day (diet plus 120 mg/day Mylanta), balance 250 mg/day, periods 10-14 j) Patient g), intake 3.34 mg/day, balance -8.8 mg/day, periods 15-19 k) 54 yr old with osteoporosis and cerebellar degeneration, intake 5.15 mg/day, balance -3.5 mg/day, periods 1-5 l) Patient k), intake 1081 mg/day (diet plus 90 ml/day Maalox), balance 89 mg/day, periods 6-10 m) Patient k), intake 5.28 mg/day, balance -6.0 mg/day, periods 11-15 n) 50 yr old, history of osteoporosis and alcoholism, intake 3.67 mg/day, balance -3.9 mg/day, periods 1-5 o) Patient n), intake 1080 mg/day (diet plus 90 ml/day Maalox), balance 23 mg/day, periods 6-10 p) Patient n), intake 3.54 mg/day, balance -10.6 mg/day, periods 11-14 q) 58 yr old, history tumoral calcinosis, intake 3.57 mg/day, balance -5.2 mg/day, periods 1-7 r) Patient q), intake 2899 mg/day (diet plus Amphogel and Maalox), balance 276 mg/day, periods 8-16 s) Patient q), intake 2719 mg/day (diet plus Amphogel and Maalox), balance 314 mg/day, periods 17-21 Each period = 6 days Data mean of all 6 day periods on constant intake Al in carmine (used as stool marker) included in intake Maalox, Mylanta, and Amphogel, commercial antacids containing 12.0-21.2 g Al/l Volunteers, admitted for evaluationn of various medical problems, IL ILLINOIS; ADULTS; BONE DISEASES; DISEASES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; ANTACIDS; ALUMINUM; BIOACCUMULATION; DIETS	Gorsky, J.E. Dietz, A.A. Spencer, H. Osis, D. 1979 Clinical Chemistry 25(10):1739-1743

Anthranilic acid, N-2,3-xylyl- (8 CI)
Benzoic acid, 2-((2,3-dimethylphenyl)amino)- (9 CI)
61-68-7
C15-H15-N-O2
MW 241.28, MP 230-231 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7084 Blood, plasma	Ingestion	HPLC	a) 13 b) 12 c) 14 d) 4 e) 11 f) 18	a) < 1 ug/ml b) 1-10 ug/ml c) 12-100 ug/ml d) 30-50 ug/ml e) 8-150 ug/ml f) 11-100 ug/ml	a) Not given b) Not given c) Not given d) Not given e) 73 +or- 46 ug/ml f) 38 +or- 24 ug/ml	a) Below detection limits b) Therapeutic range c) No symptoms d) Muscle twitching e) Convulsions f) No convulsions 54 patients reported to have taken between 1.5 and 50 g 1-18 hr before initial measurements Ranges estimated from graph Overdose patients, 1969-1980, Scotland Diarrhea, vomiting, muscle twitching, progressing, in some patients, to grand mal convulsions UNITED KINGDOM; BLOOD PLASMA; ANALGESICS; DRUG ABUSE; DRUG INTERACTION; DRUGS	Balali-Mood, M. Proudfoot, A.T. Critchley, J.A.J.H. Prescott, L.F. 1981 Lancet 1(8234):1354-1356

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
7085 Blood, serum	Injection	HPLC	8	a) 9-0.15 ug/ml b) 10-0.3 ug/ml	a) Not given b) Not given	a) 5 and 360 min after 40 mg IV b) 5 and 360 min after 40 mg IV, plus indomethacin (100 mg about 8 hr before and 100 mg 30-60 min before furosemide) Range of means, estimated from graph Healthy 22-27 yr olds, 50.0-86.2 kg BLOOD SERUM; ANALGESICS; DIURETICS; DRUG INTERACTION; DRUGS	Chennavasin, P. Seiwell, R. Brater, D.C. 1980 Journal of Pharmacology and Experimental Therapeutics 215(1):77-81
7086 Urine	Injection	Colorimetry	18	a) Not given b) Not given c) Not given d) Not given	a) 28.08 +or- 2.60 mg b) 24.00 +or- 0.74 mg c) 23.64 +or- 2.03 mg d) 26.94 +or- 2.30 mg	a) Moderate congestive heart failure (8 subjects) b) Advanced congestive heart failure (10 subjects) c) As in b) (8 subjects) d) As in b), with 0.2 mg/kg hydralazine 6 hr cumulative output after 40 mg Diuretic effect correlated with urine level and augmented by hydralazine 29-64 yr old cardiac patients CARDIOVASCULAR DISEASES; URINE; DIURETICS; DRUG THERAPY; DRUGS; JAPAN	Nomura, A. Yasuda, H. Minami, M. Akimoto, T. Miyazaki, F. Arita, T. 1981 Clinical Pharmacology and Therapeutics 30(2):177-182

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7087 Urine	Injection	HPLC	8	a) Not given b) Not given c) Not given d) Not given	a) 9.3 +or- 1.4 mg b) 9.4 +or- 0.4 mg c) 19.7 +or- 2.2 mg d) 18.8 +or- 1.7 mg	a) 24 hr cumulative excretion after 20 mg b) Same as a), plus indomethacin (100 mg about 8 hr before and 100 mg 30-60 min before furosemide) c) 24 hr cumulative excretion after 40 mg d) Same as c) plus indomethacin as in b) No significant differences between a) and b) and c) and d) Healthy 22-27 yr olds, 50.0-86.2 kg BLOOD SERUM; ANALGESICS; DIURETICS; DRUG INTERACTION; DRUGS	Chennavasin, P. Seiwell, R. Brater, D.C. 1980 Journal of Pharmacology and Experimental Therapeutics 215(1):77-81

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
7088 Blood, plasma			3	a) 60-30 ug/2 ml b) 50-12 ug/2 ml c) 42-11 ug/2 ml d) 65-35 ug/2 ml e) 50-22 ug/2 ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) Pb poisoned, exposure unknown, blood Pb 60 ug/100 ml b) After chelation therapy, blood Pb 20 ug/100 ml c) Sibling of a), not Pb poisoned d) Pb poisoned, exposure unknown, blood Pb 72 ug/100 ml e) After chelation therapy, 52 ug Pb/100 ml Estimated from graph 3 and 18 hr after unspecified dose 2.0-3.5 yr olds CHILDREN; LEAD POISONING; METAL POISONING; BLOOD; BLOOD PLASMA; DRUGS; LEAD; METALS; METABOLISM	Alvares, A.P. Kapelner, S. Sassa, S. Kappas, A. 1975 Clinical Pharmacology and Therapeutics 17(2):179-183
7089 Blood, plasma	Injection	Photometry	a) 1 b) 1	a) 50-15 ug/ml b) 70-6 ug/ml	a) Not applicable b) Not applicable	a) Oral contraceptive user b) Control Initial measurement and 25 hr after 1.0-1.2 g dose Antipyrine clearance impaired by oral contraceptive steroids BLOOD PLASMA; SEDATIVES; ANTIPYRETICS; DRUG INTERACTION; DRUG THERAPY; DRUGS	Abernethy, D.R. Greenblatt, D.J. 1981 Clinical Pharmacology and Therapeutics 29(1):106-110

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
7090 Breath	Injection	Radiometry	a) 45 b) 19 c) 22 d) 46 e) 9	a) 5-10% b) 6.1-17% c) 0.8-4.5% d) 0.8-7% e) 3.5-8.2%	a) 6.2% b) 9.1% c) 2.5% d) 3.5% e) 6%	a) Controls b) Patients on anticonvulsants c) Patients with hepatocellular disease d) Patients with hepatic neoplasms e) Patients with cholestasis 2 hr output of C-14 after 1 uCi Significant increase in b) and decrease in c) and d) Estimated from graph 43-57 yr old hospital patients Confusion or dysarthria occurred in one control and 8 patients with hepatocellular disease BREATH; CIRRHOSIS; LIVER DISEASES; URINE; ANALGESICS; ANTICONVULSANTS; ANTIPYRETICS; DRUG INTERACTION; DRUGS; TRANQUILIZERS; COMPARATIVE EVALUATIONS	Hepner, G.W. Vesell, E.S. Lipton, A. Harvey, H.A. Wilkinson, G.R. Schenker, S. 1977 Journal of Laboratory and Clinical Medicine 90(3):440-456

Asparaginase
9015-68-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7091 Blood, plasma	Injection	Radiometry	a) 1 b) 5 c) 1 d) 4 e) 1	a) Not applicable b) 14.6-28.0 IU/ml c) Not applicable d) 0.20-1.40 IU/ml e) Not applicable	a) 8.3 IU/ml (83%) b) 22.7 IU/ml (76%) c) 37.8 IU/ml (63%) d) 0.88 IU/ml (15%) e) 0.04 IU/ml (<1%)	a) After 16,500 IU/sq m IV b) After 50,000 IU/sq m IV c) After 100,000 IU/sq m IV d) After 10,000 IU/sq m IM (peak level) e) After 20,000 IU/sq m IM (peak level) % of dose Patients with leukemia and metastatic cancer, wt 50-127 kg ANTITUMOR AGENTS; ADULTS; CARCINOMAS; LEUKEMIA; NEOPLASMS; OSTEOSARCOMAS; BLOOD PLASMA; URINE; DRUGS; COMPARATIVE EVALUATIONS; ENZYMES	Ho, D.H.W. Yap, H.Y. Brown, N. Benjamin, R.S. Frireich, E.J. Blumenschein, G.R. Bodey, G.P. 1981 Journal of Clinical Pharmacology 21:72-78
7092 Urine	Injection	Radiometry	a) 7 b) 5	a) Not given b) None detected	a) <1% b) None detected	a) Excreted within 24 h after 16,500-100,000 IU/sq m, IV b) Excreted within 3 d after 10,000-20,000 IU/sq m, IM % of dose Patients with leukemia and metastatic cancer, wt 50-127 kg ANTITUMOR AGENTS; ADULTS; CARCINOMAS; LEUKEMIA; NEOPLASMS; OSTEOSARCOMAS; BLOOD PLASMA; URINE; DRUGS; COMPARATIVE EVALUATIONS; ENZYMES	Ho, D.H.W. Yap, H.Y. Brown, N. Benjamin, R.S. Frireich, E.J. Blumenschein, G.R. Bodey, G.P. 1981 Journal of Clinical Pharmacology 21:72-78

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
7093 Blood, plasma	Ingestion	GC	6	4.2-0.5 ug/ml	Not given	5 and 24 hr after 500 mg on day 4 of a 5 day study during which time subjects received 100 mg cannabidiol (CBD) every 4 hr. Initial measurement 0.08 ug/ml at 30 min. When hexobarbital was given before or after CBD treatment, peak levels were as much as 50% lower Range of means, estimated from graph Healthy 21-28 yr olds Increased fatigue, and tremor, impaired eye tracking performance, and altered electroencephalogram. Effects not altered by CBD. BLOOD PLASMA; DRUG INTERACTION; DRUGS; HYPNOTICS; PSYCHOTROPIC DRUGS; SEDATIVES; COMPARATIVE EVALUATIONS; METABOLISM	Benowitz, N.L. Nguyen, T.R. Jones, R.T. Herning, R.I. Bachman, J. 1980 Clinical Pharmacology and Therapeutics 28(1):115-120

Barbituric acid, 5-(1-cyclohexen-1-yl)-5-ethyl- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-(1-cyclohexen-1-yl)-5 ethyl- (9 CI)
52-31-3
C12-H16-N2-O3
MW 236.26, MP 171-174 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7094 Blood		GC UV	1	a) Not applicable b) Not applicable	a) 1.4 mg/100g b) 1.4 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7095 Brain		GC UV	1	a) Not applicable b) Not applicable	a) 0.5 mg/100g b) 0.8 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7096 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 1.3 mg/100g b) 0.9 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

Barbituric acid, 5-allyl-5-(1-methylbutyl)- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-(1-methylbutyl)-5-(2-propenyl)- (9 CI)
76-73-3
C12-H18-N2-O3
MW 334

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7097 Blood		GC TLC UV GC/MS Enzymatic	2	3.6-23.5 mg/l	Not given	Dose probably sufficient to contribute to signs and symptoms Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7098 Blood	Ingestion	GC	15	a) 1.5-6.6 ug/ml b) 1.5-4.1 ug/ml c) 1.4-5.6 ug/ml d) 1.3-5.3 ug/ml	a) 3.1 +or- 0.7 ug/ml b) 2.4 +or- 0.4 ug/ml c) 3.5 +or- 0.4 ug/ml d) 2.8 +or- 0.6 ug/ml	a) 6 controls, toxic level b) 6 controls, 7 hr after last dose c) 9 patients, toxic level d) 9 patients, 7 hr after last dose Mean dose 672 +or- 65 mg Tuinal (50% secobarbital and 50% amobarbital by weight)/150 lb for controls, and 1063 +or- 169 mg Tuinal/150 lb for patients. Dose schedule 100-200 mg total barbituate/hr until toxic level reached 17-35 yr old secobarbital/amobarbital drug abusers and controls Drowsiness, slurred speech, ataxia, and combination of vertical and lateral nystagmus BLOOD; DRUG ABUSE; DRUG INTERACTION; DRUGS; HYPNOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Faulkner, T.P. McGinity, J.W. Hayden, J.H. Olsen, D.A. Comstock, E.G. 1979 Journal of Clinical Pharmacology 19(10):605-616
7099 Blood		UV	5	0.11-0.7 mg/100 ml	Not given	Drug induced fatalities, ethanol (5 cases, 0.07-0.32 g/100 ml) and phenobarbital (1 case, 0.20 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7100 Urine	Ingestion	RIA	1	Not given	>500 ug/l	1-72 hr after 100 mg Volunteer URINE; DRUGS; HYPNOTICS; NARCOTICS; MEASUREMENT METHODS	Usategui-Gomez, M. Heveran, J.E. Cleeland, R. McGhee, B. Telischak, Z. Awdziej, T. Grunberg, E. 1975 Clinical Chemistry 21(10):1378-1382

Barbituric acid, 5-allyl-5-isobutyl- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-(2-methylpropyl)-5-(2-propenyl)- (9 CI)
77-26-9
C11-H16-N2-O3
MW 224.3, MP 137-140 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7101 Blood		GC TLC UV GC/MS Enzymatic	a) 1 b) 2	a) 0-8.0 mg/l b) 0-13.0 mg/l	a) Not given b) Not given	a) Dose probably sufficient to contribute to signs and symptoms b) Doses probably less than toxic amounts Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575

Barbituric acid, 5-ethyl-5-(1-methyl-1-butenyl)- (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(1-methyl-1-butenyl)- (9 CI)
125-42-8
C11-H16-N2-O3
MW 224.3, MP 160-163 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7102 Blood	Ingestion	Colorimetry TLC	1	Not applicable	5.3 mg/100 ml	Unknown dose 75 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; URINE; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7103 Kidney	Ingestion	Colorimetry TLC	1	Not applicable	8.5 mg/100 mg	Unknown dose 75 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; URINE; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7104 Liver	Ingestion	Colorimetry TLC	1	Not applicable	16.4 mg/100 mg	Unknown dose 75 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; URINE; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7105 Urine	Ingestion	Colorimetry TLC	1	Not applicable	8.0 mg/100 ml	Unknown dose 75 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; URINE; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80

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
7106 Bile	Injection Ingestion	GC	2	114-3480 ug/ml	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7107 Blood	Ingestion	Colorimetry TLC	1	Not applicable	15 mg/100 ml	Estimated absorbed dose 1.5 g Suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; DRUG ABUSE; DRUGS	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7108 Blood	Injection Ingestion	GC	2	113-173 ug/ml	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7109 Blood		UV	6	0.4-0.8 mg/100 ml	Not given	Drug induced fatalities. Ethanol (6 cases, 0.02-0.35 g/100 ml) and propoxyphene (1 case, 0.12 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7110 Blood, plasma	Ingestion	GC	6	a) Not given b) Not given c) Not given	a) 2.60 +or- 0.63 ug/ml b) 1.98 +or- 0.48 ug/ml c) 2.32 +or- 0.48 ug/ml	a) Before delta-9-tetrahydrocannabinol (THC) b) During THC c) After THC Dose 200 mg. THC, 60-180 mg/day for 14 days Healthy 20-29 yr olds BLOOD PLASMA; DRUG INTERACTION; DRUGS; SEDATIVES; METABOLISM	Benowitz, N.L. Jones, R.T. 1977 Clinical Pharmacology and Therapeutics 22(3):259-268
7111 Blood, plasma	Ingestion	RIA	7	1.2-2.1 ug/ml	Not given	9 hr after 100 mg on day 1, 8, 15 during 14 day study with one dose per night Range of means Healthy 21-60 yr olds with sleep difficulties Slightly reduced sleep latency, but no effect on sleep duration or number of wakings. No effect on psychomotor performance. BLOOD PLASMA; DRUG THERAPY; DRUGS; HYPNOTICS	Linnoila, M. Erwin, C.W. Brendle, A. 1982 Journal of Clinical Pharmacology 22:14-19

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7112 Brain	Injection Ingestion	GC	2	100-112 ug/g	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7113 Heart	Ingestion	GC	1	Not applicable	180 ug/g	Suicide victim, dose unknown 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7114 Kidney	Ingestion	Colorimetry TLC	1	Not applicable	6.3 mg/100 mg	Estimated absorbed dose 1.5 g Suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; DRUG ABUSE; DRUGS	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7115 Kidney	Injection Ingestion	GC	2	190-1457 ug/g	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7116 Liver	Ingestion	Colorimetry TLC	1	Not applicable	32 mg/100 mg	Estimated absorbed dose 1.5 g Suicide victim AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; DRUG ABUSE; DRUGS	Poklis, A. Hameli, A.Z. 1975 Archives of Toxicology 34:77-80
7117 Liver	Injection Ingestion	GC	2	458-1580 ug/g	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7118 Lung	Injection Ingestion	GC	2	148-217 ug/g	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968
7119 Urine	Ingestion	Colorimetry		2-17 ug/ml	Not given	1 and 8 hr after 400 mg. Final measurement 10 ug/ml at 12 hr. Estimated from graph. Data corrected to urine relative density of 1.024. URINE; DRUGS; HYPNOTICS; SEDATIVES; MEASUREMENT METHODS	Pehr, F. 1975 Clinical Chemistry 21(11):1609-1611
7120 Urine	Injection Ingestion	GC	2	8.3-445 ug/ml	Not applicable	Suicide victims, dose unknown 38 yr old Caucasian and 32 yr old East Indian, CA Congestion and edema of lungs CALIFORNIA; ADULTS; SUICIDE; BILE; BLOOD; BRAIN; HEART; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES	Shaw, R.F. 1981 Clinical Toxicology 18(8):965-968

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
7121 Blood	Ingestion	GC	15	a) 2.3-7.6 ug/ml b) 2.0-5.2 ug/ml c) 2.7-9.7 ug/ml d) 2.4-8.7 ug/ml	a) 3.6 +or- 0.8 ug/ml b) 3.0 +or- 0.5 ug/ml c) 5.6 +or- 0.9 ug/ml d) 4.4 +or- 1.0 ug/ml	a) 6 controls, toxic level b) 6 controls, 7 hr after last dose c) 9 patients, toxic level d) 9 patients, 6 hr after last dose Mean dose 672 +or- 65 mg Tuinal (50% secobarbital and 50% amobarbital by weight)/150 lb for controls, and 1063 +or- 169 mg Tuinal/150 lb for patients. Dose schedule 100-200 mg total barbituate/hr until toxic level reached 17-35 yr old secobarbital/amobarbital drug abusers and controls Drowsiness, slurred speech, ataxia, and combination of vertical and lateral nystagmus BLOOD; DRUG ABUSE; DRUG INTERACTION; DRUGS; HYPNOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Faulkner, T.P. McGinity, J.W. Hayden, J.H. Olsen, D.A. Comstock, E.G. 1979 Journal of Clinical Pharmacology 19(10):605-616

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7122 Blood, plasma	Ingestion		1	Not given	4.5 ug/ml	6 hr after 1 g Amoquine (590 mg dihydroquinidine, 410 mg amobarbital) 16 yr old Headache, vertigo, sleepiness, photophobia, sinus tachycardia (125 bpm) at admission 6 hr after dose. BELGIUM; ADOLESCENTS; CASE HISTORIES; BLOOD PLASMA; URINE; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; LAVAGE	Lesne, M. Devos, D.M. Reynaert, M. 1981 Clinical Toxicology 18(6):659-662
7123 Urine	Ingestion	Colorimetry		4-16 ug/ml	Not given	1 and 7 hr after 400 mg. Final measurement 12 ug/ml at 12 hr Estimated from graph Results corrected to a urine relative density of 1.024. URINE; DRUGS; HYPNOTICS; SEDATIVES; MEASUREMENT METHODS	Pehr, F. 1975 Clinical Chemistry 21(11):1609-1611

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
7124 Blood		GC TLC UV GC/MS Enzymatic	2	50.0-77.0 mg/l	Not given	Dose probably sufficient to contribute to signs and symptoms Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7125 Blood		UV	11	0.5-7.4 mg/100 ml	Not given	Drug induced fatalities. Ethanol (9 cases, 0.01-0.38 g/100 ml), secobarbital (1 case, 0.2 mg/100 ml), ethchlorvynol (1 case, 0.34 mg/100 ml), amobarbital-secobarbital (1 case, 0.6 mg/100 ml), phenytoin (1 case, 0.1 mg/100 ml), and diphenhydram (1 case, 0.01 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7126 Blood		GC	1	Not applicable	0.4 mg%	Driver fatally injured in single-car crash. Blood alcohol 30 mg% North Carolina NORTH CAROLINA; BLOOD; DRUG ABUSE; DRUGS; ALCOHOLS	Turk, R.F. McBay, A.J. Hudson, P. 1974 Journal of Forensic Sciences 19(1):90-97
7127 Blood, plasma	Ingestion	GC	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1 g) 1 h) 1 i) 1 j) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) 26-2 ug/ml g) 40-9 ug/ml h) 7-1.5 ug/ml i) 8-3.5 ug/ml j) 10-0.2 ug/ml	a) 25.3 ug/ml b) 31.1 ug/ml c) 5.7 ug/ml d) 11.0 ug/ml e) 10.5 ug/ml f) Not given g) Not given h) Not given i) Not given j) Not given	a) Mother, at delivery, dose 100 mg b) Mother, at delivery, dose 200 mg, increased from 100 mg at 2nd trimester c) Mother, at delivery, dose 50 mg d) Mother, at delivery, dose 67 mg e) Mother, at delivery, dose 75 mg f) Infant of a), 12 hr-15 day after parturition, cord blood level 21.8 ug/ml g) Infant of b), 12 hr-10 day after parturition, cord blood level 35.8 ug/ml h) Infant of c), 12 hr-9.5 day after parturition, cord blood level 5.4 ug/ml i) Infant of d), 18 hr-7 day after parturition, cord blood level 9.2 ug/ml j) Infant of e), 36 hr-15 day after parturition, cord blood level 10.0 ug/ml Daily dose during pregnancy with last dose 2.5-12.5 hr before delivery Temporary increase 1st day postpartum in 3 of 5 newborns f)-j) estimated from graph Epileptic mothers and their full-term male infants, Tokyo Jaundice in two newborns JAPAN; ADULTS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANTICONVULSANTS; DRUGS; HYPNOTICS; SEDATIVES; PREGNANCY; DRUG THERAPY	Ishizaki, T. Yokochi, K. Chiba, K. Tabuchi, T. Wagatsuma, T. 1981 Pediatric Pharmacology 1:291-303

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7128 Blood, plasma	Injection	GC	a) 6 b) 6	a) 11.5-20.0 ug/ml b) 9.6-16.9 ug/ml	a) 16.2 +or- 3.1 ug/ml b) 13.8 +or- 2.5 ug/ml	a) Peak, 0.25-2.00 hr (mean 0.92 +or- 0.60 hr) after 10 mg/kg phenobarbital sodium, IM b) Peak, 1.0-6.0 hr (mean 5.83 +or- 2.34 hr) after 10 mg/kg phenobarbital acid, IM Peak times significantly different 5-18 mo old children with febrile convulsions Transient sedation in some BLOOD PLASMA; CEREBROSPINAL FLUID; ANTICONVULSANTS; DRUGS; HYPNOTICS; SEDATIVES; COMPARATIVE EVALUATIONS	Minagawa, K. Miura, H. Chiba, K. Ishizaki, T. 1981 Pediatric Pharmacology 1:279-289
7129 Blood, plasma	Ingestion	GC	a) 64 b) 34	a) 5.1-28.0 ug/ml b) 9.5-35.5 ug/ml	a) 11.4 +or- 4.5 ug/ml b) 17.8 +or- 6.4 ug/ml	a) 2.71 +or- 1.81 mg/kg/day b) 2.51 +or- 1.20 mg/kg/day, plus valproate sodium a) and b) significantly different. For both a) and b) ratio of level to dose increased with age 0.25-16.2 yr old epileptics AGE; CHILDREN; BLOOD PLASMA; ANTICONVULSANTS; DRUG INTERACTION; DRUG THERAPY; DRUGS	Suganuma, T. Ishizaki, T. Chiba, K. Hori, M. 1981 Journal of Pediatrics 99(2):314-317
7130 Blood, plasma		GC	2	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 135 mg/l b) 155 mg/l c) 60 mg/l d) 185 mg/l e) 100 mg/l f) 54 mg/l	a) 31 yr old, 2 days after admission b) 24 hr later at beginning charcoal hemoperfusion c) After 7 hr hemoperfusion d) 18 yr old, initial measurement e) After 1.5 hr charcoal hemoperfusion f) After 4 hr hemoperfusion Dose unknown Unconscious, hypothermic, hypotensive, hyporic UNITED KINGDOM; ADOLESCENTS; ADULTS: CASE HISTORIES; BLOOD PLASMA; DRUG ABUSE; DRUGS; HYPNOTICS; MUSCLE RELAXANTS; THEOPHYLLINES	Raper, S. Crome, P. Vale, A. Helliwell, M. Widdop, B. 1982 Archives of Toxicology 49:303-310

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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
7131 Blood, plasma	Injection Ingestion	GC		a) 1.8-6 ug/ml b) 2-9 ug/ml c) 18-40 ug/ml d) 2.3-11 ug/ml e) 0.7-4.5 ug/ml f) 4.5-12 ug/ml g) 3-10 ug/ml h) 17-30 ug/ml i) 2.3-7 ug/ml j) 1.3-6 ug/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 i) Not given j) Not given	a) 4 mothers, at delivery, after 50 mg 2x/day b) Newborn of a) at delivery c) Newborn of a) at end of 7 day treatment. 5 mg/kg within 2 hr of birth, IM, and 50 mg/kg/day, oral, thereafter d) Newborn of a), 20 days after birth, treatment as in c) e) Mothers as in a), 3 days after delivery f) 4 mothers, at delivery, after 50 mg 2x/day g) Newborn of f) at delivery h) Newborn of f) at end of 7 day treatment, dose regimen as in c), receiving phototherapy for elevated serum bilirubin levels i) New born of f), 20 days after birth, dose regimen as in c), on phototherapy j) Mothers as in f), 3 days after delivery Estimated from graph Expectant mothers and newborn (gestational age 32-37 wk) receiving phenobarbital to reduce risk of hyperbilirubinemia ADULTS; NEWBORN; BLOOD PLASMA; DRUG THERAPY; DRUGS; PREGNANCY	Boreus, L.O. Jalling, B. Wallin, A. 1978 Journal of Pediatrics 93(4):695-698
7132 Blood, serum	Ingestion	GC	21	13.2-71.6 mg/l	35.9 mg/l Median	Dose 8-34 mg/kg (mean 23.4 +or- 7.1 mg/kg), rate 120 mg/hr until predetermined clinical end-point. Barbiturate addicts, 16-73 yr old, estimated mean daily intake 1 g (range 0.5-4 g) ADULTS; BLOOD SERUM; ANTICONVULSANTS; DRUG ABUSE; DRUG THERAPY; DRUGS	Robinson, G.M. Sellers, E.M. Janecek, E. 1981 Clinical Pharmacology and Therapeutics 30(1):71-76
7133 Blood, serum	Injection Ingestion	RIA	1	41.9-18.9 ug/ml	Not applicable	7 and 16 days after birth Doses: 10 mg/kg, IV, on day 2 and followed by 10 mg/12 hr, to day 7 (changed from IV to roal on day 5). Phenytoin also administered. Infant, wt 1,895 g, suffering seizures 2nd day after birth and treated with Dilantin and phenobarbital NEWBORN; BLOOD SERUM; ANTICONVULSANTS; DRUG THERAPY; DRUGS	Wiriyathian, S. Kaojarern, S. Rosenfeld, C.R. 1982 Journal of Pediatrics 100(1):146-149
7134 Cerebrospinal fluid	Injection	GC	a) 6 b) 6	a) 3.2-6.6 ug/ml b) 4.1-9.2 ug/ml	a) 5.4 +or- 1.3 ug/ml b) 6.0 +or- 1.6 ug/ml	a) 1 hr after 10 mg/kg phenobarbital sodium, IM. 36% of plasma level b) 4 hr after 10 mg/kg phenobarbital acid, IM. 50% of plasma level levels for a) and b) similar when peak plasma levels attained 5-18 mo old children with febrile convulsions Transient sedation in some BLOOD PLASMA; CEREBROSPINAL FLUID; ANTICONVULSANTS; DRUGS; HYPNOTICS; SEDATIVES; COMPARATIVE EVALUATIONS	Minagawa, K. Miura, H. Chiba, K. Ishizaki, T. 1981 Pediatric Pharmacology 1:279-289

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7135 Urine	Ingestion	Colorimetry		13-2 ug/ml	Not given	3 hr and 7 days after 400 mg. Initial measurement 4 ug/ml at 1 hr. Results corrected to a urine relative density of 1.024. Estimated from graph URINE; DRUGS; HYPNOTICS; SEDATIVES; MEASUREMENT METHODS	Pehr, F. 1975 Clinical Chemistry 21(11):1609-1611

Barbituric acid, 5-sec-butyl-5-ethyl-, sodium salt (8 CI)
2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(1-methylpropyl)-, monosodium salt (9 CI)
143-81-7
C10-H16-N2-O3.Na
MW 235.27

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7136 Blood		UV	1	Not applicable	0.3 mg/100 ml	Drug induced fatality. Ethanol (0.16 g/100 ml) and phenobarbital (0.4 mg/100 ml) also found. Autopsy, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7137 Urine	Ingestion	RIA	1	200->500 ug/l	Not given	1-48 hr after 100 mg. Initial measurement 10 ug/l. 260 ug/l at 72 hr. Volunteer URINE; DRUGS; HYPNOTICS; NARCOTICS; MEASUREMENT METHODS	Usategui-Gomez, M. Heveran, J.E. Cleeland, R. McGhee, B. Telischak, Z. Awdziej, T. Grunberg, E. 1975 Clinical Chemistry 21(10):1378-1382

Benzeneethanamine, alpha-methyl-N-propyl-, (+-)-
59366-97-1
C12-H19-N
MW 177.32

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7138 Urine	Ingestion	GC	2	a) Not given b) Not given	a) 13.4% of dose b) 3.5% of dose	a) Metabolite, 1-(4-hydroxyphenyl)-2-(n-propylamino) propane b) Metabolite, 1-(4-hydroxy-3-methoxyphenyl)-2-n-propylamino)propane 24 hr output after 25 mg (base equivalent) dose Healthy 28 and 44 yr old URINE; AUTONOMIC DRUGS; DRUGS; PSYCHOTROPIC DRUGS; METABOLITES	Coutts, R.T. Dawson, G.W. 1977 Research Communications in Chemical Pathology and Pharmacology 17(2):349-352

beta-D-Glucopyranosiduronic acid, cyanophenylmethyl, (R)-
1332-94-1
C14-H15-N-O7
MW 309.27, MP 214-216 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7139 Blood	Ingestion	Colorimetry	6	a) 0.4-2.05 ug/ml b) 1.01-2.01 ug/ml	a) Not given b) Not given	a) Range of CN peaks 1.5 - 2 hr after 0.5 g, oral, total dose 0.5 g 3x/day for 7 days, 6 subjects b) CN peaks, days 4 and 5 after 0.5 g, oral, 3x/day plus 30 g almonds with breakfasts, 1 subject. Peak before almonds, 0.6 ug/ml Terminal cancer patients, wt 47-86 kg Amygdalin at doses and schedules used had no significant side effects. Adding almonds to diet increased blood CN and caused nausea, vomiting, headache, light-headedness, laden sensations in extremities. Symptoms subsided after 1.5 hr. Malignancies progressed at periods of 5 to 15 weeks after starting treatment. CARCINOMAS; SARCOMAS; BLOOD; BLOOD PLASMA; URINE; DRUG INTERACTION; DRUG THERAPY; DRUGS; CYANIDE; THIOCYANATES; DIETS; METABOLITES	Moertel, C.G. Ames, M.M. Kovach, J.S. Moyer, T.P. Rubin, J.R. Tinker, J.H. 1981 Journal of the American Medical Association 245(6):591-594
7140 Blood, plasma	Injection Ingestion	Colorimetry GC/MS	6	a) Not given b) Not given c) 2-27 ug/ml	a) 1,160 ug/ml b) <1 ug/ml c) Not given	a) Peak, unchanged drug after 4.5 g/sq m/day, IV, for 21 days b) Peak, unchanged drug 30-60 min after first dose of 0.5 g, oral c) Mean peak levels thiocyanate 2 h after 0.5 g, oral, a.m., day 1 and day 14. Total dose 0.5 g 3x/day Most IV dose excreted unchanged in urine Increased blood cyanide after oral dose Terminal cancer patients, wt 47-86 kg Amygdalin at doses and schedules used had no significant side effects. Adding almonds to diet increased blood cyanide, and caused nausea, vomiting, headache, light-headedness, laden sensations in extremities. Symptoms subsided after 1.5 hr. Malignancies progressed at periods of 5 to 15 weeks after starting treatment. CARCINOMAS; SARCOMAS; BLOOD; BLOOD PLASMA; URINE; DRUG INTERACTION; DRUG THERAPY; DRUGS; CYANIDE; THIOCYANATES; DIETS; METABOLITES	Moertel, C.G. Ames, M.M. Kovach, J.S. Moyer, T.P. Rubin, J.R. Tinker, J.H. 1981 Journal of the American Medical Association 245(6):591-594

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beta-D-Glucopyranosiduronic acid, cyanophenylmethyl, (E)-
1332-94-1
C14-H15-N-O7
MW 309.27, MP 214-216 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7141 Urine	Injection Ingestion	Colorimetry	6	a) 62-96% b) 8-32%	a) Not given b) Not given	a) 4.5 g/sq m/day, IV, 21 days b) 0.5 g 3x/day, oral, 7 days % of dose Mean 24 h excretion Terminal cancer patients, wt 47-86 kg Amygdalin at doses and schedules used had no significant side effects. Adding almonds to diet increased blood CN and caused nausea, vomiting, headache, light-headedness, laden sensations in extremities. Symptoms subsided after 1.5 hr. Maliqnancies progressed at periods of 5 to 15 weeks after starting treatment. CARCINOMAS; SARCOMAS; BLOOD; BLOOD PLASMA; URINE; DRUG INTERACTION; DRUG THERAPY; DRUGS; CYANIDE; THIOCYANATES; DIETS; METABOLITES	Moertel, C.G. Ames, M.M. Kovach, J.S. Moyer, T.P. Rubin, J.R. Tinker, J.H. 1981 Journal of the American Medical Association 245(6):591-594

Biguanide, 1,1-dimethyl- (8 CI)
Imidodicarbonimidic diamide, N,N-dimethyl- (9 CI)
657-24-9
C4-H11-N5
MW 129.17

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7142 Blood, plasma	Injection Ingestion	GC-EC	16	a) 9-0.02 ug/ml b) 1.30-0.59 ug/ml c) 4.03-1.81 ug/ml d) 4.20-1.89 ug/ml e) 6.10-1.79 ug/ml f) Not given	a) Not given b) 1.02 +or- 0.34 ug/ml c) 3.10 +or- 0.93 ug/ml d) 3.25 +or- 0.97 ug/ml e) 3.24 +or- 1.46 ug/ml f) 2.5 ug/ml	a) 0 and 12 hr after 0.25 g IV (4 subjects) b) Mean peaks, 2.2 hr after 0.5 g oral (4 subjects) c) Mean peaks, 1.5 hr after 1.5 g oral (4 subjects) d) Mean peaks, 2.1 hr after 1.0 g oral (4 diabetics) e) Mean peaks, 2.4 hr after 1.0 g oral (8 diabetics, 4 taking chlorpropramide) f) Peak level, after 0.5 g 2x/day for 12 days (4 diabetics) a) and f) estimated from graph 46-81 yr old maturity onset diabetics and healthy 30-36 yr olds ADULTS; DIABETES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; BIOACCUMULATION	Tucker, G.T. Casey, C. Phillips, P.J. Connor, H. Ward, J.D. Woods, H.F. 1981 British Journal of Clinical Pharmacology 12:235-246
7143 Urine	Injection Ingestion	GC-EC	16	a) Not given b) 31.6%-59.5% c) 28.8%-43.3% d) 26.6%-48.2% e) 18.1%-39.5%	a) 79% +or- 2% b) 49.6% +or- 12.5% c) 37.9% +or- 6.6% d) 38.1% +or- 8.9% e) 34.7% +or- 7.0%	a) 0.25 g IV (4 subjects) b) 0.5 g oral (4 subjects) c) 1.5 g oral (4 subjects) d) 1.0 g oral (4 diabetics) e) 1.0 g oral (8 diabetics, 4 taking chlorpropramide) % unchanged drug recovered within 72 hr a) estimated from graph 46-81 yr old maturity onset diabetics and healthy 30-36 yr olds ADULTS; DIABETES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; BIOACCUMULATION	Tucker, G.T. Casey, C. Phillips, P.J. Connor, H. Ward, J.D. Woods, H.F. 1981 British Journal of Clinical Pharmacology 12:235-246

Bismuth
7440-69-9
Bi
AtW 208.98, MP 271.5 C, BP 1579 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7144 Blood	Ingestion	AAS	52	a) 1.0-1.2 ug/ml b) 0.9-2.6 ug/l c) 2.5-8.0 ug/l d) 2.0-35.0 ug/l	a) 1.0 ug/l b) 1.7 +or- 0.7 ug/l c) 4.2 +or- 2.0 ug/l d) Not given	a) 3 of 20 healthy blood donors b) Day 5 after 10 ml (18 mg Bi/ml) 4X/day (8 subjects) c) Day 10. Same as b) followed by 20 ml 4X/day for 5 days (8 subjects) d) Last day after 5 ml 4X/day for 4-6 wk (24 ulcer patients) GASTROINTESTINAL DISEASES; BLOOD; URINE; DRUG THERAPY; DRUGS; BISMUTH; METALS	Lee, S.P. 1981 Research Communications in Chemical Pathology and Pharmacology 34(2):359-364
7145 Urine	Ingestion	AAS	32	a) 240-704 ug/24 hr b) 400-1350 ug/24 hr c) 118-1330 ug/24 hr d) 85-1052 ug/24 hr e) 76-997 ug/24 hr f) 82-684 ug/24 hr	a) 410 +or- 134 ug/24 hr b) 926 +or- 267 ug/24 hr c) Not given d) Not given e) Not given f) Not given	a) Day 5 after 10 ml (18 mg Bi/ml) 4X/day (8 subjects) b) Day 10. Same as a) followed by 20 ml 4X/day for 5 days (8 subjects) c) Last day after 5 ml 4X/day for 4-6 wk (24 ulcer patients) d) 5 days posttreatment (same as c) e) 10 days posttreatment (same as c) f) 15 days posttreatment (same as c) As tripotassium dicitrato-bismuthate 21-68 yr olds GASTROINTESTINAL DISEASES; BLOOD; URINE; DRUG THERAPY; DRUGS; BISMUTH; METALS	Lee, S.P. 1981 Research Communications in Chemical Pathology and Pharmacology 34(2):359-364

Bromide
24959-67-9
Br
MW 79.90, MP -7.2 C, BP 58.78 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7146 Blood, serum				a) 0-49 mg/dl b) 50-99 mg/dl c) 100-199 mg/dl d) >200 mg/dl	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 48.4-49.2% of patients b) 20.3-22.4% c) 22.5-25.0% d) 5.9-6.3% Data expressed as NaBr Levels in patients admitted to psychiatric hospitals Australia AUSTRALIA; ADULTS; BLOOD SERUM; DRUG ABUSE; DRUGS	Andrews, S. Francis, I. Oey, H.G. 1974 Medical Journal of Australia 1(1):18-19

Butyrophenone, 4-(4-(p-chlorophenyl)-4-hydroxypiperidino)-4'-fluoro- (8 CI)
1-Butanone, 4-(4-(4-chlorophenyl)-4-hydroxy-1-piperidinyl)-1-(4-fluorophenyl)- (9 CI)
52-86-8
C21-H23-Cl-F-N-O2
MW 375.88, MP 148-149.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7147 Blood, plasma		RIA	a) 1 b) 1 c) 1 d) 1	a) 16.2-23.4 ng/ml b) 21.9-27.6 ng/ml c) 80.3-162.8 ng/ml d) 104.9-181.6 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 10 mg/day b) 20 mg/day c) 60 mg/day d) 60 mg/day Range of weekly means. Treated 3 wk. Absence of coffee and tea during wk 2 did not increase bioavailability. Mentally retarded patients with psychotic disturbances. NEW ZEALAND; ADULTS; BEHAVIOR DISORDERS; MENTAL RETARDATION; BLOOD PLASMA; PSYCHOTROPIC DRUGS; COMPARATIVE EVALUATIONS; DIETS; DRUGS; CAFFEINE	Bowen, S. Taylor, K.M. Gibb, I.A. McL. 1981 Lancet 1(8231):1217-1218
7148 Blood, serum	Ingestion	RIA	98	a) 8-30 ng/ml b) 15-100 ng/ml c) 25-65 ng/ml	a) Not given b) Not given c) Not given	a) 10-100 ug/kg/day b) >100-200 ug/kg/day c) >200-300 ug/kg/day Range estimated from graph Positive correlation with salivary levels 18-54 yr old schizophrenics, Japan JAPAN; CENTRAL NERVOUS SYSTEM DISEASES; NERVOUS SYSTEM DISEASES; BLOOD SERUM; SALIVA; DRUG THERAPY; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Yamazumi, S. Miura, S. 1981 International Pharmacopsychiatry 16:174-183
7149 Saliva	Ingestion	RIA	98	a) 2-32 ng/ml b) 4-140 ng/ml c) 35-160 ng/ml	a) Not given b) Not given c) Not given	a) 10-100 ug/kg/day b) >100-200 ug/kg/day c) >200-300 ug/kg/day Range estimated from graph Positive correlation with serum levels 18-54 yr old schizophrenics, Japan JAPAN; CENTRAL NERVOUS SYSTEM DISEASES; NERVOUS SYSTEM DISEASES; BLOOD SERUM; SALIVA; DRUG THERAPY; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Yamazumi, S. Miura, S. 1981 International Pharmacopsychiatry 16:174-183

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7150 Blood, plasma	Ingestion	TLC GC	a) 1 b) 1	a) 1800-500 ng/ml b) 1700-1300 ng/ml	a) Not applicable b) Not applicable	a) 0.5 and 12 hr b) 1 and 12 hr Estimated from graph Dose 64 mg plus 454 mg salicylic acid 324 mg phenacetin, and 60 mg codeine phosphate 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7151 Blood, plasma	Ingestion	HPLC	16	2.80-2.37 ug/ml	Not given	2 and 4 hr after 250 mg. Initial measurement 2.66 ug/ml at 1 hr Increase in plasma free fatty acid levels and urinary catecholamines, but no change in plasma binding of chlordiazepoxide, diazepam, or propranolol. BLOOD PLASMA; DRUG INTERACTION; DRUGS; FATS; CAFFEINE	Patwardhan, R.V. Desmond, P.V. Johnson, R.F. Dunn, G.D. Robertson, D.H. Hoyumpa, A.M. Schenker, S. 1980 Clinical Pharmacology and Therapeutics 28(3):398-403
7152 Milk	Ingestion	TLC GC	a) 1 b) 1	a) 1300-400 ng/ml b) 1600-200 ng/ml	a) Not applicable b) Not applicable	a) 1.5 and 12 hr. Initial measurement 600 ng/ml at 0.5 hr b) 3 and 48 hr. Initial measurement 1000 ng/ml at 0.5 hr Estimated from graph Dose 64 mg, plus 324 mg phenacetin, 454 mg aspirin and 60 mg codeine phosphate 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

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
7153 Blood, plasma	Ingestion	AAS	a) 10 b) 20 c) 20	a) 9.3-9.7 mg/100 ml b) 9.2-9.9 mg/100 ml c) 9.2-9.8 mg/100 ml	a) 9.5 mg/100 ml b) 9.5 mg/100 ml c) 9.6 mg/100 ml	a) Controls, non-nutrient supplement plus lactose-containing placebo b) High protein-vitamin liquid supplement plus mineral capsule (100 mg Ca ($CaCO_3$), 6 days/wk c) Supplement and mineral capsule as in b) plus 40 mg Zn as carbonate, 6 days/wk Range of means over 20 mo No supplements during 4 mo summer vacation Significantly increased ht, wt, and bone ages in boys receiving Zn during final 12 mo of supplementation, despite subnormal Zn levels in plasma throughout study Ca levels maintained within normal limits with a few exceptions 13 yr old prepubertal village schoolboys, southern Iran IRAN; ADOLESCENTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; CALCIUM; IRON; PHOSPHORUS; ZINC; DIETS	Konaghy, H.A. Reinhold, J.G. Mahloudji, M. Ghavami, P. Spivey Fox, M.R. Halsted, J.A. 1974 American Journal of Clinical Nutrition 27(2):112-121

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7154 Blood, serum		Chem	100	a) Not given b) Not given c) Not given d) Not given	a) 9.06 +or- 0.84 mg/100 ml b) 9.03 +or- 0.80 mg/100 ml c) 9.64 +or- 0.76 mg/100 ml d) 9.90 +or- 0.72 mg/100 ml	a) 75 women lactating 2 mo or more b) 25 women from a) c) Women in b), 1 mo after supplementation with 500 mg Ca and 1,600 IU (40 ug) vitamin D daily d) 25 nonlactating controls, no supplement 22-34 yr olds, North India Serum chemistry suggested osteomalacia, but radiographs of pelvis and dorsolumbar spine showed no abnormalities. OSTEOMALACIA; DIETS; LACTATION; PREGNANCY; CALCIUM; PHOSPHORUS; INDIA; BONE DISEASES; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS; BLOOD SERUM	Marya, R.K. Rathee, S. Arora, S.R. 1981 Annals of Nutritional Metabolism 25:56-64
7155 Blood, serum	Injection Rectal		1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 9.2 mg/100 ml b) 5.8 mg/100 ml c) 8.1 mg/100 ml d) 8.8 mg/100 ml e) 8.9 mg/100 ml f) 9.6 mg/100 ml	a) 13 mo before admission b) At admission, 12 hr after Fleet emema (238 mEq phosphate) c) Day 2, after 180 mg Ca gluconate, 81 mg Ca chloride, 40 mEq NaHCO3, all IV d) Day 3, additional 90 mg Ca and 40 mEq NaHCO3 3) Day 4 f) Day 7 4.5 yr old with chronic renal failure Carpopedal spasm, hyperventilation, diarrhea, tachycardia CHILDREN; KIDNEY DISEASES; BLOOD SERUM; CALCIUM; PHOSPHORUS	Oxnard, S.C. O'Bell, J. Grupe, W.E. 1974 Pediatrics 53(1):105-106
7156 Urine	Ingestion	AAS	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	a) 100 +or- 28 mg/day b) 68 +or- 19 mg/day c) 198 +or- 71 mg/day d) 149 +or- 44 mg/day e) 66 +or- 16 mg/day f) 43 +or- 12 mg/day g) 89 +or- 14 mg/day h) 58 +or- 6 mg/day	a) 226 mg/day b) 214 mg/day c) 2236 mg/day d) 2307 mg/day e) 228 mg/day f) 225 mg/day g) 2346 mg/day h) 2358 mg/day ILLINOIS; URINE; CALCIUM; FLUORIDE; PHOSPHORUS; METABOLISM	Spencer, H. Osis, D. Kramer, L. Wiatrowski, E. Norris, C. 1975 Journal of Nutrition 105:733-740

Chloral hydrate (8 CI)
1,1-Ethanediol, 2,2,2-trichloro- (9 CI)
302-17-0
C2-H3-Cl3-O2
MW 165.42, MP 57 C (also reported as 52 C), BP 98 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7157 Blood			3	0.04-1.9 mg/100 ml	Not given	Drug induced fatalities. Amitriptyline (2 cases, 0.02-0.03 mg/100 ml), ethanol (1 case, 0.14 g/100 ml), pentobarbital (1 case, 0.10 mg/100 ml), and codeine (1 case, 0.05 mg/100 ml) also found Measured as trichloroethanol Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

Chloramphenicol-3-monosuccinate (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7158 Blood, serum	Injection	HPLC	45	a) 0-40 ug/ml b) 5-47 ug/ml	a) Not given b) Not given	a) Chloramphenicol succinate b) Chloramphenicol Peak levels during first 3 hr after initiation of therapy. Dose 15-200 mg/kg/24 hr IV Estimated from graph Hospitalized infants and children, age 3 days-16 yr, being treated for infections CHILDREN; INFANTS; INFECTIONS; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS	Kauffman, R.E. Miceli, J.N. Strebel, L. Buckley, J.A. Done, A.K. Dajani, A.S. 1981 Journal of Pediatrics 98(2):315-320
7159 Urine	Injection	HPLC	15	a) 6-80% b) 3-60% c) 2-42%	a) 33 +or- 5.3% b) 18 +or- 3% c) 14 +or- 2% S.E.	a) Chloramphenicol succinate b) Chloramphenicol glucuronide c) Chloramphenicol % of dose Dose, 15-200 mg/kg/24 hr IV as succinate CHILDREN; INFANTS; INFECTIONS; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS	Kauffman, R.E. Miceli, J.N. Strebel, L. Buckley, J.A. Done, A.K. Dajani, A.S. 1981 Journal of Pediatrics 98(2):315-320

Clodronate disodium (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7160 Blood, plasma	Injection	CC	6	a) 13-2.3 ug/ml b) 20-2.1 ug/ml c) 40-3.2 ug/ml	a) Not given b) Not given c) Not given	a) 1 and 4 hr after 3 mg/kg (mean AUC 29.8 ug/ml hr) b) 1 and 6 hr after 6 mg/kg (mean AUC 58.3 ug/ml hr) c) 1 and 6 hr after 10 mg/kg (mean AUC 102.7 ug/ml hr) Range of means, estimated from graph Healthy 23-30 yr olds ADULTS; BLOOD PLASMA; URINE; DRUGS	Conrad, K.A. Lee, S.M. 1981 Clinical Pharmacology and Therapeutics 30(1):114-120

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Clodronate disodium (No postings in CHEMLINE).

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7161 Urine	Injection	CC	6	Not given	76.2 +or- 8.7%	48 hr cumulative output of unchanged drug. No difference between 3, 6 and 10 mg/kg doses Healthy 23-30 yr olds ADULTS; BLOOD PLASMA; URINE; DRUGS	Conrad, K.A. Lee, S.M. 1981 Clinical Pharmacology and Therapeutics 30(1):114-120

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
7162 Blood, serum	Injection	AAS	a) 23 b) 22	a) 21-16.5 umol/l b) 22-18 umol/l	a) Not given b) Not given	a) Preoperative and postoperative day 2. 18.5 umol/l on day 5 b) Postoperative day 1 and 5. Preoperative level 19 mol/l. 20 mg Zn and 1.2 mg Cu IV daily Range of means, estimated from graph Surgery patients ADULTS; BLOOD SERUM; COPPER; METALS; ZINC	Hallbook, T. Hedelin, H. 1978 Acta Chirurgica Scandinavica 144:423-426

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
7163 Blood, plasma	Inhalation Oral absorption	GC	161	a) 12-576.4 nmol/l b) 13.1-3857.0 nmol/l c) 82.1-3421.0 nmol/l d) 29.1-5319.0 nmol/l e) 135.7-4310.1 nmol/l	a) 202.8 nmol/l b) 1200.6 nmol/l c) 1757.8 nmol/l d) 2560.2 nmol/l e) 1913.3 +or- 834.7 nmol/l	a) 3 subjects, never used snuff, range 8.6-667.0 nmol/l before snuffing b) 10 occasional snuffers, range 14.8-3941.0 nmol/l before snuffing c) 8 daily snuffers, range 66.7-3476.0 nmol/l before snuffing d) 4 multiple dose snuffers, range 5.1-5227.0 before snuffing e) 136 heavy cigarette smokers 2 min after finishing cigarette 25 snuff users at meeting in Wellington, Somerset, United Kingdom 136 heavy cigarette smokers at smokers' clinic, Maudsley Hospital UNITED KINGDOM; ADULTS; BLOOD PLASMA; NICOTINE; METABOLISM; METABOLITES; SMOKING; TOBACCOS	Russell, M.A.H. Jarvis, M.J. Devitt, G. Feyerabend, C. 1981 British Medical Journal 283(6295):814-817

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
7164 Blood, plasma	Ingestion	HPLC MS	6	a) 5.55-0.09 ug/ml b) 5.53-0.02 ug/ml c) 6.02-0.08 ug/ml d) 5.73-0.03 ug/ml e) 11.57-0.17 ug/ml f) 11.26-0.05 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) C12-R(+) warfarin level. 3.05 ug/ml at 1 hr b) Same as a). Dose plus secobarbital. 1.86 ug/ml at 1 hr c) C13-S(-) warfarin level. 2.56 ug/ml at 1 hr d) Same as c). Dose plus secobarbital. 1.90 ug/ml at 1 hr e) C12/C13-R, S (+ and -) warfarin. 5.61 ug/ml at 1 hr f) Same as e). Dose plus secobarbital. 3.76 ug/ml at 1 hr Dose 1.5 mg/kg warfarin psuedoracemate. Secobarbital 100 mg/day for 7 days before and 5-9 days after warfarin Range of means at 4 and 240 hr after dose Healthy 18-30 yr olds Secobarbital reduced hypoprothrombinemia of the pseudoracemic warfarin BLOOD PLASMA; ANTICOAGULANTS; DRUG INTERACTION; DRUGS	O'Reilly, R.A. Trager, W.F. Motley, C.H. Howald, W. 1980 Clinical Pharmacology and Therapeutics 28(2):187-195

Dibenz(b,e)oxepin-delta(11(6H),gamma)-propylamine, N,N-dimethyl- (8 CI)
1-Propanamine, 3-dibenz(b,e)oxepin-11(6H)-ylidene-N,N-dimethyl- (9 CI)
1668-19-5
C19-H21-N-O
MW 279.37, BP 154-157 C at 0.03 mm Hg, 260-270 C at 0.2 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7165 Blood			2	0.10-0.16 mg/100 ml	Not given	Drug induced fatalities. Ethanol (1 case, 0.19 g/100 ml) and propoxyphene (1 case, 0.03 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

Diflunisal (No postings in CHEMLINE).
C13-H8-F2-O3
MW 250.20, MP 210-211 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7166 Blood, plasma	Ingestion	Fluorometry	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 36.0 +or- 5.8 ug/ml b) 30.1 +or- 5.6 ug/ml c) 19.5 +or- 6.2 ug/ml d) 29.7 +or- 6.5 ug/ml e) 38.7 +or- 7.5 ug/ml f) 31.6 +or- 7.5 ug/ml	a) 2.42 +or- 0.88 hr, fasted control, no antacid b) 3.10 +or- 1.47 hr, postprandial, no antacid c) 2.99 +or- 1.33 hr, fasted, 15 ml Al(OH)3 gel d) 3.58 +or- 1.56 hr, postprandial, 15 ml Al(OH)3 gel e) 1.89 +or- 1.14 hr, fasted, 10 ml Mg(OH)2 suspension f) 3.28 +or- 1.68 hr, postprandial, 15 ml Al(OH)3/Mg(OH)2 mixture Mean time to peak level after 250 mg diflunisal given just after antacids Meal decreased peak level 16% Al(OH)3 gel reduced peak level 46% Mg(OH)2 suspension (fasting) increased early levels (130% at 0.5 hr and 64% at 1 hr) Mean age 23 yr, mean wt 72 kg, healthy subjects ANTACIDS; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; ANTI-INFLAMMATORY AGENTS; DRUG INTERACTION; DRUGS; ALUMINUM; MAGNESIUM	Tobert, J.A. DeSchepper, P. Tjandramaga, T.B. Mullie, A. Butinx, A.P. Meisinger, M.A.P. Huber, P.B. Hall, T.L.P. Yeh, K.C. 1981 Clinical Pharmacology and Therapeutics 30(3):385-389
7167 Urine	Ingestion	Fluorometry	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 181 +or- 44 mg b) 173 +or- 23 mg c) 155 +or- 30 mg d) 184 +or- 21 mg e) 180 +or- 37 mg f) 179 +or- 27 mg	a) Fasted control, no antacid b) Postprandial, no antacid c) Fasted, 15 ml Al(OH)3 gel d) Postprandial, 15 ml Al(OH)3 gel e) Fasted, 10 ml Mg(OH)2 suspension f) Postprandial, 15 ml Al(OH)3/Mg(OH)2 suspension Mean 96 hr recovery after 250 mg diflunisal given just after antacids Meal before diflunisal had no effect on urinary recovery Al(OH)3 gel reduced mean 96 hr excretion 14% Mean age 23 yr, mean wt 72 kg, healthy subjects ANTACIDS; ADULTS; BLOOD PLASMA; URINE; ANALGESICS; ANTI-INFLAMMATORY AGENTS; DRUG INTERACTION; DRUGS; ALUMINUM; MAGNESIUM	Tobert, J.A. DeSchepper, P. Tjandramaga, T.B. Mullie, A. Butinx, A.P. Meisinger, M.A.P. Huber, P.B. Hall, T.L.P. Yeh, K.C. 1981 Clinical Pharmacology and Therapeutics 30(3):385-389

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
7168 Blood	Ingestion		1	a) Not applicable b) Not applicable	a) 13.0 ng/ml b) 1.3 ng/ml	a) Initial measurement b) 40 hr after accidental ingestion of unknown quantity Healthy 2 yr old High levels tolerated without untoward effects. Intermittent sinus bradycardia and sinus pauses began 2 hr after admission and persisted 3 days. Child had no symptoms, remained well throughout hospitalization. CHILDREN; BLOOD; ANTIARRHYTHMIC AGENTS; DIURETICS; DRUGS	Harris, M.M. Hariprasad, M.K. Khalid, S. 1981 New England Journal of Medicine 305(11):643
7169 Blood, serum	Injection	RIA	6	3.0-6.5 ng/ml	4.9 +or- 1.5 ng/ml	Steady state Dose 0.02 mg/kg initially, 0.01 mg/kg at 24 and 36 hr, 0.005 mg/kg at 48 hr and every 12 hr thereafter, IV Premature neonates, gestational ages 26-36 wk (mean 29.9 wk), postnatal ages 1-9 days (mean 4.1 days), wt 820-2710 g (mean 1460 g) Therapy for left ventricular volume overload secondary to patent ductus arteriosus NEWBORN; BLOOD SERUM; URINE; ANTIARRHYTHMIC AGENTS; DIURETICS; DRUG THERAPY; DRUGS	Ng, P.K. Cote, J. Schiff, D. Collins-Nakai, R.L. 1981 Research Communications in Chemical Pathology and Pharmacology 34(2):207-216
7170 Blood, serum	Ingestion		1	18.5-4 ng/ml	Not given	36-120 hr after accidental ingestion of 2.5-4.1 mg Estimated from graph Level at 0 hr (estimated by extrapolation), 41 ng/ml Highest serum K, 6.1 nmol/l at 44 hr 22 mo old child, wt 10.8 kg, with digoxin intoxication At 36 hr, vomiting, drowsy, dehydrated, stuporous, normotensive with irregular bradycardia of 60 beats/min. Total A-V dissociation with junctional escape beats. 48 hr later patient less drowsy, electrocardiogram normal. CHILDREN; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DIURETICS; DRUGS	Pearce, G. Buchanan, N. Uther, J. 1980 Medical Journal of Australia 2(5):279-280
7171 Urine	Injection	RIA	12	a) 114-188 ug b) 138-175 ug c) 256-314 ug d) 245-310 ug	a) 154 +or- 20 ug b) 158 +or- 13 ug c) 289 +or- 17 ug d) 286 +or- 21 ug	a) 24 hr after 3 min IV b) 24 hr after 60 min IV c) 6 day total output after 3-5 min IV d) 6 day total output after 60 min IV 0.4 mg dose No effect of infusion rate on excretion Daily output for days 2-6 also given 20-35 yr olds HEART DISEASES; URINE; ANTIARRHYTHMIC AGENTS; DIURETICS; DRUGS	Lindenbaum, J. Long, R. Wenger, T. Mallis, G. Cato, A. 1981 Clinical Pharmacology and Therapeutics 30(3):317-320

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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)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7172 Urine	Injection	RIA	a) 5 b) 1 c) 1	a) 5.0-21.4% b) Not applicable c) Not applicable	a) 11.1 +or- 6.7% b) 3.1% c) 3.9%	a) 24 hr after 0.02 mg/kg b) 8 hr after 0.02 mg/kg c) 12 hr after 0.02 mg/kg % of dose Mean renal digoxin clearance 10.4 ml/min/1.73 sq m Premature neonates, gestational ages 26-36 wk (mean 29.9 wk), postnatal age 1-9 days (mean 4.1 days), wt 820-2710 g (mean 1460 g) Therapy for left ventricular volume overload secondary to patent ductus arteriosus NEWBORN; BLOOD SERUM; URINE; ANTIARRHYTHMIC AGENTS; DIURETICS; DRUG THERAPY; DRUGS	Ng, P.K. Cote, J. Schiff, D. Collins-Nakai, R.L. 1981 Research Communications in Chemical Pathology and Pharmacology 34(2):207-216

Emetine (8 CI)
Emetan, 6',7',10,11-tetramethoxy- (9 CI)
483-18-1
C29-H40-N2-O4
MW 480.63, MP 74 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7173 Bile	Ingestion	TLC	1	Not applicable	1.9 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over next 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928
7174 Blood	Ingestion	TLC	1	Not applicable	2.4 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over next 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928

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Emetine (8 CI)
Emetan, 6',7',10,11-tetramethoxy- (9 CI)
483-18-1
C29-H40-N2-O4
MW 480.63, MP 74 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7175 Cerebrospinal fluid	Ingestion	TLC	1	Not applicable	0.1 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over subsequent 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928
7176 Kidney	Ingestion	TLC	1	Not applicable	7.4 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight. At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over next 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928
7177 Liver	Ingestion	UV	1	Not applicable	14.0 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over next 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928

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Emetine (8 CI)
Emetan, 6',7',10,11-tetramethoxy- (9 CI)
483-18-1
C29-H40-N2-O4
MW 480.63, MP 74 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7178 Pericardial fluid	Ingestion	TLC	1	Not applicable	0.7 ug/g	After 90-120 ml ipecac syrup/day (63-84 mg emetine) over 3 mo. Total consumption 5.67 to 7.56 g emetine Autopsy samples. 26 yr old, slightly overweight At admission, marked shortness of breath, heart palpitations, chest tightness, exertional dyspnea, extreme fatigue, blood pressure 75/60 mm Hg, pulse rate 150. Increased hypotension over next 24 hr until terminal vertricular tachycardia and fibrillation developed. PERICARDIAL FLUID; PENNSYLVANIA; ADULTS; AUTOPSIES; BILE; BLOOD; CEREBROSPINAL FLUID; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; BLOOD PRESSURE	Adler, A.G. Walinsky, P. Krall, R.A. Cho, S.Y. 1980 Journal of the American Medical Association 243(19):1927-1928

Estrogens, Conjugated (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7179 Blood, plasma	Ingestion Vaginal	RIA	a) 6 b) 6 c) 4 d) 5 e) 11 f) 14	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 47.7 +or- 5.0 pg/ml b) -0.7 +or- 9.0 pg/ml c) 103.0 +or- 16.4 pg/ml d) 35.8 +or- 7.0 pg/ml e) 125.3 +or- 20.1 pg/ml f) 93.7 +or- 11.7 pg/ml Changes from basal level S.E.	a) 0.3 mg/day oral b) 0.3 mg/day vaginal c) 0.625 mg/day oral d) 0.625 mg/day vaginal e) 1.25 mg/day oral f) 1.25 mg/day vaginal After 1 wk therapy with conjugated estrogen preparation Basal level 25-62 pg/ml Vaginal application therapeutically effective, even at 0.3 mg/day, without significant increase in blood level Postmenopausal women ADULTS; BLOOD PLASMA; DRUG THERAPY; DRUGS; HORMONES;	Deutsch, S. Ossowski, R. Benjamin, I. 1981 American Journal of Obstetrics and Gynecology 139(8):967-968

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
7180 Blood		GC TLC UV GC/MS Enzymatic	a) 1 b) 1	a) 1100-1240 mg/l b) 0-560 mg/l	a) Not given b) Not given	a) Dose probably less than toxic amount b) Patient denied taking drug Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases. Laboratories agreed on 6 of 23 drugs reported present in the serum of 20 pateints Levels variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7181 Blood	Ingestion	Enzymatic	8	13.5-34.0 mmole/l	23.1 +or- 1.3 mmole/l	0.73 g/kg loading dose (30 min after 15 mg antipyrine) and 0.73 g/kg maintenance dose for 12 hr. Range of means at 3, 6, 9, and 12 hr Healthy 22-60 yr olds, wt 48-95 kg Ethanol caused no change in the half-life, distribution volume, or clearance of antipyrine ADULTS; BLOOD; DRUG INTERACTION; DRUGS; ALCOHOLS	Dossing, M. Andreasen, P.B. 1981 Clinical Pharmacology and Therapeutics 30(1):101-104
7182 Blood	Ingestion		12	a) 130-10 mg/100 ml b) 120-10 mg/100 ml	a) Not given b) Not given	a) 100 and 720 min after 1.43 g/kg b) 100 and 720 min after 1.43 g/kg. Chlormethiazole given at 230 and 650 min Healthy 24-46 yr old moderate drinkers BLOOD; DRUG THERAPY; DRUGS; ALCOHOLS; ALCOHOLIC BEVERAGES	Myrsten, A.L. Rydberg, U. Idestrom, C.M. Lamble, R. 1980 Psychopharmacology 69:117-125
7183 Blood	Ingestion		4	0.08-0.18% (weight/weight)	Not given	Intracranial blood clots from victims surviving up to 13 hr after severe head injuries while intoxicated. Peripheral blood 0-0.02% (weight/volume). AUTOPSIES; BLOOD; BRAIN; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Freireich, A.W. Bidanset, J.H. Lukash, L. 1975 Journal of Forensic Sciences 20(1):83-85
7184 Blood		GC	46	0.01-0.38 mg/100 ml	Not given	Drug induced fatalities. Other drugs also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7185 Blood		GC	501	a) 300-349 mg/100 ml b) 350-399 mg/100 ml c) >or=400 mg/100 ml	a) Not given b) Not given c) Not given	a) 43 of 204 unnatural deaths b) 38 of 113 unnatural deaths c) 132 of 184 unnatural deaths Deaths attributed solely to acute ethanol poisoning Autopsy data, 24 mo period Data also by race, sex, age, cause and place of death, day of death, occupation, population density, and from other areas of the U.S. Whites, Blacks, and American Indians, age 16->80 yr, with blood ethanol >300 mg/100 ml, NC NORTH CAROLINA; AGE; RACIAL STUDIES; SEX; BLOOD; DRUG ABUSE; DRUGS; COMPARATIVE EVALUATIONS; ALCOHOLS	Taylor, H.L. Hudson, R.P. 1977 Journal of Forensic Sciences 22(3):639-653
7186 Blood		GC	39	a) Not detected b) 30-99 mg% c) 100-199 mg% d) 200-400 mg%	a) Not given b) Not given c) Not given d) Not given	a) 13 drivers b) 5 drivers c) 10 drivers d) 11 drivers Drivers fatally injured in single car crashes. Mean level 180 mg%. In two cases phenobarbital or propoxyphene also detected. North Carolina NORTH CAROLINA; BLOOD; DRUG ABUSE; DRUGS; ALCOHOLS	Turk, R.F. McBay, A.J. Hudson, P. 1974 Journal of Forensic Sciences 19(1):90-97
7187 Blood				a) >0.05 g/100 ml b) >0.10 g/100 ml c) >0.15 g/100 ml	a) Not given b) Not given c) Not given	a) 21.3%, 17.8%, 27.1%, 8.7% b) 16.3%, 12.2%, 21.0%, 6.0% c) 10.6%, 7.3%, 13.7%, 3.7% Mean percentages, 1974-1977, of road accident casualties, for 35,591 drivers, 7,283 nondrivers, 21,863 male drivers, and 9,187 female drivers, respectively Victoria, Australia AUSTRALIA; BLOOD; DRUG ABUSE; ALCOHOLS; ALCOHOLIC BEVERAGES	McDermott, F. Strang, P. 1976 Medical Journal of Australia 2(14):612-615
7188 Blood		GC	a) 69 b) 112	a) 20-420 mg/dl b) 10-500 mg/dl	a) Not given b) Not given	a) Deaths involving morphine and ethanol b) Deaths involving morphine, quinine and ethanol Wayne County, MI MICHIGAN; AUTOPSIES; DRUG ABUSE; DRUGS; NARCOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Monforte, J.R. 1977 Journal of Forensic Sciences 22(4):718-724
7189 Blood, plasma	Ingestion	GC	4	a) Not given b) Not given c) Not given	a) 97.7 +or- 19.7 mg/dl b) 73.4 +or- 10.4 mg/dl c) 108.7 +or- 20.8 mg/dl	a) Before delta-9-tetrahydrocannabinol (THC) b) During THC c) After THC Dose 1 ml 95% ethanol/kg. THC 10 mg/4 hr for 14 days. Three other patients showed no decrease during THC Healthy 20-29 yr olds BLOOD PLASMA; DRUG INTERACTION; DRUGS; SEDATIVES; METABOLISM	Benowitz, N.L. Jones, R.T. 1977 Clinical Pharmacology and Therapeutics 22(3):259-268

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7190 Blood, serum	Ingestion	GC	1	Not applicable	0.90 g/l	Unknown dose of ethanol-isopropanol 45 yr old Coma, respiratory distress BLOOD SERUM; DRUG ABUSE; DRUGS; ALCOHOLS	Vasiliades, J. Pollock, J. Robinson, C.A. 1978 Clinical Chemistry 24(2):383-385
7191 Blood, serum	Injection		8	a) 159-13 mg/100 ml b) 178-8 mg /100 ml c) 153-5 mg/100 ml	a) Not given b) Not given c) Not given	a) 1 g/kg IV, plus 2 g/kg glucose, oral b) 1 g/kg IV, plus 2 g/kg fructose, oral c) 1g/kg IV, plus 4 g/kg sucrose, oral 1 hr and 5-6 hr (mean) after dose. Alcohol removal rate significantly lower with b) and c) than with a) Range of means, estimated from graph 25-53 yr old chronic alcoholics, normal liver function, abstained from alcohol at least 1 wk BLOOD SERUM; DRUG INTERACTION; DRUGS; SEDATIVES; METABOLISM	Soterakis, J. Iber, F.L. 1975 American Journal of Clinical Nutrition 28:254-257
7192 Brain	Ingestion		4	0.05-0.13% (weight/weight)	Not given	Victims surviving up to 13 hr after severe head injury while intoxicated. Peripheral blood levels 0-0.02% (weight/volume) AUTOPSIES; BLOOD; BRAIN; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Freireich, A.W. Bidanset, J.H. Lukash, L. 1975 Journal of Forensic Sciences 20(1):83-85

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
7193 Blood			1	Not applicable	0.80 mg/100 ml	Drug induced fatality. Ethanol, 0.29 g/100 ml, also found. Autopsy, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

Ferritins
9007-73-2
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7194 Blood, serum	Injection	RIA	2	230-240 ug/l	Not given	Peaks, 7-9 days after 1-2 g elemental Fe Estimated from graph 68 and 76 yr old anemics BLOOD SERUM; DRUG THERAPY; DRUGS; IRON; METALS; ANEMIA	Blunden, R.W. Lloyd, J.V. Rudzki, Z. Kimber, R.J. 1981 Annals of Clinical Biochemistry 18:215-217

Fluoride
16984-48-8
F
AtW 18.9984

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7195 Blood, serum	Inhalation	ISE	18	a) Not given b) 10.7-4.8 uM	a) 3.4 uM b) Not given	a) Preexposure level b) 3 and 24 hr after 0.6-2% with nitrous oxide, 60% in oxygen Inogranic fluoride Range of means Patients undergoing ear surgery and receiving enflurane anesthesia ADULTS; BLOOD SERUM; ANESTHETICS; DRUG THERAPY; DRUGS; FLUORIDE	Duvaldestin, P. Mauge, F. Desmonts, J.-M. 1981 Clinical Pharmacology and Therapeutics 29(1):61-64
7196 Blood, serum	Ingestion		20	a) 0.01-0.023 ppm b) 0.02-0.05 ppm c) 0.035-0.045 ppm	a) 0.016 ppm b) 0.029 ppm c) 0.040 ppm	a) Basal diet (0.43 mg F/day) for 5-9 wk, 5 subjects b) Basal diet plus 5 mg F/day supplement for 4 wk, (mean F intake 5.40 mg/day), 8 subjects c) Basal diet plus 10 mg F/day supplement for 5 wk, (mean F intake 10.38 mg/day), 4 subjects Supplement given as 2.2 mg sodium fluoride tablets in divided doses with meals Biweekly samples Range estimated from graph Healthy volunteers, 20-45 yr old (mean, 32 yr), wt 60-88 kg (mean 70 kg), 158-188 cm (mean 174 cm), CA CALIFORNIA; ADULTS; BLOOD SERUM; URINE; FLUORIDE; BIOACCUMULATION; DIETS	Maheshwari, U.R. McDonald, J.T. Schneider, V.S. Brunetti, A.J. Leybin, L. Newburn, E. Hodge, H.C. 1981 American Journal of Clinical Nutrition 34:2679-2684

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7197 Urine	Ingestion		20	a) 0.53-0.98 mg/day b) 3.14-4.12 mg/day c) 5.78-7.47 mg/day	a) 0.7 mg/day b) 3.5 mg/day c) 6.76 mg/day	a) Basal diet (0.43 mg F/day) for 5-9 wk, 9 subjects. Mean F balance, -0.40 mg/day b) Basal diet plus 5 mg/day F supplement for 4 wk (mean F intake 5.40 mg/day), 8 subjects. Mean F balance +1.38 mg/day c) Basal diet plus 10 mg/day supplement for 5 wk (mean F intake 10.38 mg/day), 4 subjects. Mean F balance +2.88 mg/day Supplement given as 2.2 mg sodium fluoride tablets in divided doses with meals Healthy volunteers, 20-45 yr old (mean, 32 yr), wt 60-88 kg (mean 70 kg), 158-188 cm (mean 174 cm), CA CALIFORNIA; ADULTS; BLOOD SERUM; URINE; FLUORIDE; BIOACCUMULATION; DIETS	Maheshwari, U.R. McDonald, J.T. Schneider, V.S. Brunetti, A.J. Leybin, L. Newburn, E. Hodge, H.C. 1981 American Journal of Clinical Nutrition 34:2679-2684
7198 Urine	Ingestion		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	a) 2.9 +or- 0.13 mg/day b) 3.2 +or- 0.31 mg/day c) 2.9 +or- 0.40 mg/day d) 2.9 +or- 0.31 mg/day e) 7.8 +or- 0.66 mg/day f) 7.8 +or- 0.70 mg/day g) 7.4 +or- 0.95 mg/day h) 7.4 +or- 0.87 mg/day	a) 4.0 mg/day b) 4.1 mg/day c) 3.9 mg/day d) 4.4 mg/day e) 13.1 mg/day f) 13.2 mg/day g) 13.8 mg/day h) 13.6 mg/day Intake in a)-d) from diet and fluoridated drinking water, in e)-h) from diet, fluoridated drinking water, and supplement of Na fluoride. Ca and P given simultaneously had no significant effect. Metabolic research ward patients ILLINOIS; URINE; CALCIUM; FLUORIDE; PHOSPHORUS; METABOLISM	Spencer, H. Osis, D. Kramer, L. Wiatrowski, E. Norris, C. 1975 Journal of Nutrition 105:733-740

Flupentixol (No postings in CHEMLINE).
2709-56-0
C23-H25-F3-N2-O-S
MW 434.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7199 Blood, plasma	Injection Ingestion	RIA	2	a) 31-22 ug/l b) 1-6.5 ug/l c) 5-19 ug/l d) 7-13 ug/l	a) Not given b) Not given c) Not given d) Not given	a) 2 and 24 hr after 12 mg, oral. Fluctuation 2-7 hr, then gradual decline for 7 days, 1 subject b) 0-7 days after 20 mg sustained-release preparation, IM, 1 subject c) 0-7 days after 40 mg sustained-release preparation, IM, subject in b) d) 0-7 days after 2nd 40 mg sustained-release preparation, IM, subject in b) b), c), d) levels increased to peak at 7 days and returned to original level at 14 days Estimated from graph Parkinsonian side-effects beginning 7 hr after administration and recurring over next 48 hr with oral dose. BLOOD PLASMA; DRUG INTERACTION; DRUG THERAPY; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Robinson, D. Risby, D. 1977 Clinical Chemistry 23(11):2085-2088

Glutarimide, 2-ethyl-2-phenyl- (8 CI)
2,6-Piperidinedione, 3-ethyl-3-phenyl- (9 CI)
77-21-4
C13-H15-N-O2
MW 217.26, MP dl form 84 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7200 Blood		GC	1	Not applicable	0.59 mg/100 ml	Drug induced fatality. Phenytoin, 0.1 mg/100 ml, also found. Autopsy, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7201 Blood, plasma	Ingestion	GC	1	a) 12.1-3.8 ug/ml b) 16.8-22.7 ug/ml	a) Not given b) Not given	a) 7.5 and 21 hr after 6 g b) 7.5 and 14 hr after 6 g. Final measurement 20.8 ug/ml at 21 hr. Metabolite (4-hydroxy-2-ethyl-2-phenylglutarimide) Range of means In coma for 30 hr AUTOPSIES; BLOOD PLASMA; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES; METABOLITES	Hansen, A.R. Fischer, L.J. 1974 Clinical Chemistry 20(2):236-242

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Glutarimide, 2-ethyl-2-phenyl- (8 CI)
2,6-Piperidinedione, 3-ethyl-3-phenyl- (9 CI)
77-21-4
C13-H15-N-O2
MW 217.26, MP dl form 84 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7202 Blood, plasma		GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 34 mg/l b) 31 mg/l c) 8 mg/l	a) 24 hr after admission, b) 36 hr later, at beginning of charcoal hemoperfusion c) After 11.5 hr hemoperfusion Dose unknown 73 yr old Unconscious, hypotensive, hypothermic, areflexic, hypoxic UNITED KINGDOM; ADOLESCENTS; ADULTS; CASE HISTORIES; BLOOD PLASMA; DRUG ABUSE; DRUGS; HYPNOTICS; MUSCLE RELAXANTS; THEOPHYLLINES	Raper, S. Crome, P. Vale, A. Helliwell, M. Widdop, B. 1982 Archives of Toxicology 49:303-310
7203 Blood, serum		GC	8	a) 4-18 mg/l b) 7-72 mg/l	a) Not given b) Not given	a) At time of arousal from coma (0-82.5 hr) following overdose b) Same as a). Three associated compounds (eluting near glutethimide on GC column) Doses not reported BLOOD SERUM; CEREBROSPINAL FLUID; DRUG ABUSE; DRUGS; SEDATIVES; METABOLISM	Gold, M. Tassoni, E. Etzl, M. Mathew, G. 1974 Clinical Chemistry 20(2):195-199
7204 Brain		GC	a) 1 b) 1	a) 71-72 ug/g b) 3-6 ug/g c) 5-7 ug/g d) 43-46 ug/g	a) 72 ug/g b) 5 ug/g c) 6 ug/g d) 44 ug/g	a) 2 autopsy samples b) Same as a), metabolite (4-hydroxy-2-ethyl-2-phenylglutarimid e)(4-HG) c)2 autopsy samples d) Same as c), metabolite (4-HG) Dose unknown AUTOPSIES BLOOD PLASMA BRAIN KIDNEYS LIVER DRUG ABUSE DRUGS HYPNOTICS SEDATIVES METABOLITES	Hansen, A.R. Fischer, L.J. 1974 Clinical Chemistry 20(2):236-242
7205 Cerebrospinal fluid		GC	6	a) 2-6 mg/l b) 1-19 mg/l	a) Not given b) Not given	a) At time of arousal from coma following drug overdose b) Same as a), Associated compound eluting near glutethimide on GC column Doses not reported Duration of coma 0-82.5 hr BLOOD SERUM; CEREBROSPINAL FLUID; DRUG ABUSE; DRUGS; SEDATIVES; METABOLISM	Gold, M. Tassoni, E. Etzl, M. Mathew, G. 1974 Clinical Chemistry 20(2):195-199
7206 Kidney		GC	1	a) 9-11 ug/g b) 34-39 ug/g	a) 10 ug/g b) 37 ug/g	a) 2 autopsy samples b) Same as a), metabolite (4-hydroxy-2-ethyl-2-phenylglutarimid e) Dose unknown AUTOPSIES; BLOOD PLASMA; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES; METABOLITES	Hansen, A.R. Fischer, L.J. 1974 Clinical Chemistry 20(2):236-242

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Glutarimide, 2-ethyl-2-phenyl- (8 CI)
2,6-Piperidinedione, 3-ethyl-3-phenyl- (9 CI)
77-21-4
C13-H15-N-O2
MW 217.26, MP dl form 84 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7207 Liver		GC	1	a) 166-214 ug/g b) 8-9 ug/g	a) 190 ug/g b) 8 ug/g	a) 2 autopsy samples b) Same as a), metabolite (4-hydroxy-2-ethyl-2-phenylglutarimide) Dose unknown AUTOPSIES; BLOOD PLASMA; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; HYPNOTICS; SEDATIVES; METABOLITES	Hansen, A.R. Fischer, L.J. 1974 Clinical Chemistry 20(2):236-242
7208 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 2.1 mg/100g b) 6.4 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

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
7209 Blood, plasma	Ingestion	HPLC	8	0.80-1.75 ug/ml	Not given	Range of mean steady state levels after 300 mg 4X/day for 7 days. AUC 40C-850 ug/mlXmin Healthy 21-42 yr olds. Cimetidine reduced liver blood flow and metabolism of propranolol. Pulse rates at rest also reduced. ADULTS; BLOOD PLASMA; DRUG INTERACTION; DRUG THERAPY; DRUGS	Feely, J. Wilkinson, G.R. Wood, A.J.J. 1981 New England Journal of Medicine 304(12):692-695

Heparin
9005-49-6
EXACT COMPOSITION UNKNOWN OR UNDETERMINED
MW 6000-20,000

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7210 Blood, plasma	Injection	Photometry	a) 8 b) 8 c) 7 d) 10	a) Not given b) Not given c) Not given d) Not given	a) 2.00 +or- 0.33 U/ml b) 1.56 +or- 0.68 U/ml c) 1.52 +or- 0.57 U/ml d) 1.47 +or- 0.58 U/ml	a) Healthy adults, 75 U/kg, IV b) Infants, 33-36 wk gestation, 100 U/kg, IV c) Infants, 29-32 wk gestation, 100 U/kg, IV d) Infants, 25-28 wk gestation, 100 U/kg, IV Initial level after bolus infusion as Na salt b),c),d) dose given within 4 hr after birth. Clearance rate significantly greater in infants than in adults. Healthy adults and newborns, wt 3210-680 g, 3 small for gestational age, 2 twins, 7 with transient tachypnea, 17 with hyaline membrane disease, 1 with pneumonia, 2 infants of diabetic mothers. ADULTS; NEWBORN; BLOOD PLASMA; ANTICOAGULANTS; DRUGS; MEASUREMENT METHODS	McDonald, M.M. Jacobson, L.J. Hay, W.W., Jr. Hathaway, W.E. 1981 Pediatric Research 15:1015-1018

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
7211 Blood		GC TLC UV GC/MS Enzymatic	2	0-26.0 mg/l	Not given	Dose probably less than toxic amount Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7212 Blood, plasma	Ingestion	GC	1	97-25 mg/l	Not given	4 and 11 days after estimated 100 100-mg Dilantin capsules plus 50 250 mg Mysoline tablets. Initial measurement, 56.5 mg/l about 90 min after overdose. Lethargic, atoxic and dysarthric in Stage II coma. Borderline intraventricular conduction delay and a sinus tachycardia (110 beat per min). SUICIDE; BLOOD PLASMA; ANTICONVULSANTS; DRUG ABUSE; DRUGS	Matzke, G.R. Cloyd, J.C. Sawchuk, R.J. 1981 Journal of Clinical Pharmacology 21:92-99

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7213 Blood, plasma	Injection Ingestion	Colorimetry Enzymatic	11	a) 3.3-21.9 mg/l b) 3.8-22.7 mg/l c) 2.95-25.4 mg/l d) 3.4-29.9 mg/l	a) 9.6 mg/l b) 11.9 mg/l c) 8.8 mg/l d) 10.2 mg/l	a) Days 4-6 of 20 day study period, ethanol ingestion phase (500-800 mg/l blood alcohol level) b) Days 7-9, ethanol withdrawal phase c) Days 10-12, ethanol withdrawal phase d) Days 18-20, ethanol withdrawal phase Fasting levels Phenytoin dose, 300 mg IV and 300 mg oral (loading dose) followed by 150 mg oral or IV every 12 hr, 20 days. Alcoholic men with history of withdrawal seizures. Mean alcohol consumption of 470 +or- 184 g/day, 6-30 yr. Steady drinking 1 wk before admission. ADULTS; ANTICONVULSANTS; DRUG THERAPY; DRUGS; ALCOHOLS	Sandor, P. Sellers, E.M. Dumbrell, M. Khouw, V. 1981 Clinical Pharmacology and Therapeutics 30(3):390-397
7214 Blood, plasma	Ingestion	GC	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) Not applicable b) Not applicable c) Not applicable d) 7-1.5 ug/ml e) 4.6-3 ug/ml f) 4.3-3 ug/ml	a) 6.6 ug/ml b) 4.3 ug/ml c) 6.5 ug/ml d) Not given e) Not given f) Not given	a) Mother, at delivery, dose 200 mg b) Mother, at delivery, dose 200 mg c) Mother, at delivery, dose 200 mg d) Infant of a), 12 hr-5 day after parturition, cord blood level 6.2 ug/ml e) Infant of b), 18-36 hr after parturition, cord blood level 3.9 ug/ml f) Infant of c), 21-48 hr after parturition, cord blood level 6.8 ug/ml Daily dose during pregnancy with last dose 4.9-12.5 hr before delivery Temporary increase 1st day postpartum in 2 of 3 newborns d)-f) estimated from graph Epileptic mothers and their full-term male infants, Tokyo Jaundice in two newborns JAPAN; ADULTS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANTICONVULSANTS; DRUGS; HYPNOTICS; SEDATIVES; PREGNANCY	Ishizaki, T. Yokochi, K. Chiba, K. Tabuchi, T. Wagatsuma, T. 1981 Pediatric Pharmacology 1:291-303
7215 Blood, plasma	Ingestion	GC/MS	a-c) 1 d-f) 1	a) 4.3498-0.0178 ug/ml b) 0.0602-0.0121 ug/ml c) 1.6248-0.0114 ug/ml d) 5.2586-0.0232 ug/ml e) 0.1200-0.0145 ug/ml f) 2.1725-0.0359 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Parent compound (1 subject). 4 and 96 hr after dose. 3.9216 ug/ml at 1 hr b) Metabolite, 5-(4-hydroxyphenyl)-5-phenylhydantoin (II). 10 and 48 hr after dose. 0.0318 ug/ml at 1 hr c) Metabolite, glucuronide of II. 8 and 96 hr after dose. 0.7236 ug/ml at 1 hr d) Same as a), second study (1 subject). 6 and 96 hr after dose. 2.1200 ug/ml at 1 hr e) Same as b), 10 and 72 hr after dose. 0.0484 ug/ml at 1 hr f) Same as c), 10 and 96 hr after dose. 0.5095 ug/ml at 1 hr Dose 250 mg Healthy 25 and 36 yr old BLOOD PLASMA; SALIVA; ANTIARRHYTHMIC AGENTS; ANTICONVULSANTS; DRUGS; METABOLITES	Baba, S. Goromaru, T. Yamazali, K. Kasuya, Y. 1980 Journal of Pharmaceutical Sciences 69(11):1300-1307

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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
7216 Blood, serum	Injection Ingestion	RIA	1	60-0 ug/ml	Not applicable	11 and 22 days after birth Initial measurement on day 7, 49.1 ug/ml 10 mg/kg, IV leading dose given on day 3, followed by 5 mg every 12 hr IV and then oral, day 5-7. Phenobarbital also administered Infant, wt 1,895 g, suffering seizures 2nd day after birth and treated with phenytoin and phenobarbital Lethargy, hypotonicity, cyanosis, neurologic abnormalities, sinus bradycardia, cardiac arrhythmia, absence of reflexes NEWBORN; BLOOD SERUM; ANTICONVULSANTS; DRUG THERAPY; DRUGS	Wiriyathian, S. Kaojarern, S. Rosenfeld, C.R. 1982 Journal of Pediatrics 100(1):146-149
7217 Saliva	Ingestion	GC/MS	2	a) 0.9-0.005 ug/ml b) 1.5-0.003 ug/ml	a) Not given b) Not given	a) Initial measurement and 96 hr after 250 mg (subject 1) b) Initial measurement and 96 hr after 250 mg (subject 2) Estimated from graph Health 25 and 36 yr old BLOOD PLASMA; SALIVA; ANTIARRHYTHMIC AGENTS; ANTICONVULSANTS; DRUGS; METABOLITES	Baba, S. Goromaru, T. Yamazali, K. Kasuya, Y. 1980 Journal of Pharmaceutical Sciences 69(11):1300-1307

Hydratropic acid, m-benzoyl- (8 CI)
Benzeneacetic acid, 3-benzoyl-alpha-methyl- (9 CI)
22071-15-4
C16-H14-O3
MW 254.29, MP 94 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7218 Blood, plasma	Ingestion	HPLC	12	a) 1.9-8.4 ug/ml b) 2.7-6.7 ug/ml c) 5.9-11.0 ug/ml	a) 4.8 +or- 1.8 ug/ml b) 5.0 +or- 1.0 ug/ml c) 7.6 +or- 1.8 ug/ml	a) 30-178 min (mean 71.7) after 50 mg as commercial capsule c) 30-178 min (mean 61.4) after 50 mg simple capsule with no filler d) 13.5-30 min (mean 21.0) after 50 mg in solution Peaks No significant differences in AUC 24-32 yr olds, wt 64-96 kg BLOOD PLASMA; ANALGESICS; ANTI-INFLAMMATORY AGENTS; ANTIPYRETICS; DRUG THERAPY; DRUGS; MEASUREMENT METHODS	Upton, R.A. Williams, R.L. Guentert, T.W. Buskin, J.N. Riegelman, S. 1981 European Journal of Clinical Pharmacology 20:127-133

Hydroquinidine (8 CI)
Cinchonan-9-ol, 10,11-dihydro-6'-methoxy-, (9S)- (9 CI)
1435-55-8
C20-H26-N2-O2
MW 326.40, MP 169 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7219 Blood, plasma	Ingestion		1	1.8-0 ug/ml	Not given	Hydroquinidine, 6-19.4 hr after 1 g Amoquine (590 mg dihydroquinidine, 410 mg amobarbital) Estimated from graph 16 yr old Headache, vertigo, sleepiness, photophobia, sinus tachycardia (125 bpm) at admission 6 hr after dose. BELGIUM; ADOLESCENTS; CASE HISTORIES; BLOOD PLASMA; URINE; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; LAVAGE	Lesne, M. Devos, D.M. Reynaert, M. 1981 Clinical Toxicology 18(6):659-662
7220 Urine	Ingestion		1	Not given	230 mg	Total hydroquinidine recovered 26 hr after 1 g Amoquine (590 mg dihydroquinidine, 410 mg amobarbital) 154 mg recovered at 6 hr Furosemide given, IV, to increase urine output 16 yr old Headache, vertigo, sleepiness, photophobia, sinus tachycardia (125 bpm) at admission 6 hr after dose. BELGIUM; ADOLESCENTS; CASE HISTORIES; BLOOD PLASMA; URINE; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; LAVAGE	Lesne, M. Devos, D.M. Reynaert, M. 1981 Clinical Toxicology 18(6):659-662

Imidazo(2,1-b)thiazole, 2,3,5,6-tetrahydro-6-phenyl, (S)-
14769-73-4
C11-H12-N2-S
MW 204.31, MP 87-89 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7221 Blood, plasma	Ingestion	GC	1	0.45-0.02 ug/ml		4 and 24 hr after 150 mg, orally. ANTHELMINTIC; BLOOD PLASMA; DRUG THERAPY; DRUGS; MEASUREMENT METHODS; BELGIUM	Woestenborghs, R. Michielsen, L. Heykants, J. 1981 Journal of Chromatography 224:25-32

Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (8 CI)
1H-Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (9 CI)
13551-87-6
C7-H11-N3-O4
MW 201.11

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7222 Blood, plasma	Ingestion	HPLC	a) 10 b) 1	a) 36-8 ug/ml b) 1-45 ug/ml	a) Not given b) Not applicable	a) Measurements at 2 hr and 24 hr after 1 gm/sq m. Initial measurement 25 ug/ml at 30 min b) 30 min and 3 hr after 1 g/sq m. Final measurement 43 ug/ml at 4.2 hr Normalized doses. Estimated from graph Patients with carcinoma or melanoma. ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Minchinton, A.I. 1981 British Journal of Cancer 43:344-349
7223 Mammary gland	Ingestion	HPLC	1	3-42 ug/g	Not applicable	1 and 4.3 hr after normalized dose of 1 g/sq m Estimated from graph. Biopsies of tumor Patient with breast carcinoma ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Minchinton, A.I. 1981 British Journal of Cancer 43:344-349

Imidazole-1-ethanol, 2-methyl-5-nitro- (8 CI)
1H-Imidazole-1-ethanol, 2-methyl-5-nitro- (9 CI)
443-48-1
C6-H9-N3-O3
MW 171.16, MP 158-160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7224 Urine	Ingestion	HPLC	5	a) 4-91 mg b) 1.7-10.8 mg c) 0.8-4.7 mg	a) Not given b) Not given c) Not given	a) Metronidazole b) N-(2-hydroxyethyl)oxamic acid (metabolite) c) Acetamide (metabolite) 24 hr excretion during a 750 mg/24 hr metronidazole dose regimen 20-61 yr old patients. MASSACHUSETTS; ADULTS; INFECTIONS; URINE; ANTIBIOTICS; DRUG THERAPY; IN VIVO ANALYSIS; METABOLITES; DRUGS	Koch, R.L. Beaulieu, B.B. Chrystal, E.J.T. Goldman, P. 1981 Science 211:398-400

Indole, 3-(2-(dimethylamino)ethyl)- (8 CI)
1H-Indole-3-ethanamine, N,N-dimethyl- (9 CI)
61-50-7
C12-H16-N2
MW 188.26, MP 44.6-46.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7225 Blood	Injection	GC/MS	11	98-1 ng/ml	Not given	10 and 120 min after 0.7 mg/kg. Level at 5 min. 44 ng/ml. Range of means, estimated from graph 21-28 yr old hallucinogen users BLOOD; URINE; DRUGS; PSYCHOTROPIC DRUGS	Kaplan, J. Mandel, L.R. Stillman, R. Walker, R.W. Vanden Heuvel, W.J.A. Gillin, J.C. Wyatt, R.J. 1974 Psychopharmacologia 38:239-245
7226 Urine	Injection	GC/MS	7	a) 3.35-82.6 ug b) 0.17-10.3 ug	a) Not given b) Not given	a) 0-2 hr after 0.7 mg/kg b) 2-6 hr after 0.7 mg/kg 21-28 yr old hallucinogen users BLOOD; URINE; DRUGS; PSYCHOTROPIC DRUGS	Kaplan, J. Mandel, L.R. Stillman, R. Walker, R.W. Vanden Heuvel, W.J.A. Gillin, J.C. Wyatt, R.J. 1974 Psychopharmacologia 38:239-245

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
7227 Blood, serum	Ingestion	Chem Radiometry	a) 3 b) 3 c) 3 d) 1	a) 100-15.7 ug/100 ml b) 112-14.1 ug/100 ml c) 92.1-19.9 ug/100 ml d) 65.2-133 ug/100 ml	a) Not given b) Not given c) Not given d) Not given	a) 2 and 24 hr after 5 ml iodinated glycerol elixir, 30 mg organically bound I. Initial level 5.95 ug/100 ml b) 1 and 24 hr after 2 iodinated glycerol tablets, 30 mg organically bound I. Initial level 2.4 ug/100 ml c) 4 and 24 hr after 20 drops of iodinated glycerol in aqueous solution, 25 mg organically bound I. Initial level 3.3 ug/100 ml d) 4 and 56 hr following repeated therapeutic doses of iodinated glycerol solution, 25 mg organically bound I, 4 X/day. Initial level 4.9 ug/100 ml, reached again 36 hr after treatment discontinued on 7th day Range of means, serum I2 Thyroxine I varied within normal range Healthy subjects THYROXINE; BLOOD SERUM; DRUG THERAPY; DRUGS; IODINE; HALOGENS	Nemoitin, B.O. Lazo-Wasem, E.A. 1974 Journal of Pharmaceutical Sciences 63(8):1323-1325

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
7228 Blood	Ingestion	Radiometry	32	a) 5.8-18.3% of dose b) 1.2-3.4% of dose c) 18.2-40.9% of dose d) 2.4-4.3% of dose Geometric	a) Not given b) Not given c) Not given d) Not given	a) Standard meal, 4.1 mg Fe b) Semisynthetic meal, 4.1 mg Fe c) Reference dose, 3 mg Fe as ferrous sulfate d) Semisynthetic meal with 25-100 g, beef Range of means Healthy 18-30 yr olds BLOOD; IRON; METALS; DIETS; FOODS	Cook, J.D. Monsen, E.R. 1975 American Journal of Clinical Nutrition 28(11):1289-1295
7229 Blood	Ingestion	Radiometry	27	a) 1.2-31.3% of dose b) 3.1-28.5% of dose c) 1.7-24.4% of dose d) 1.5-20.9% of dose e) 0.8-4.7% of dose f) 0.2-3.3% of dose g) 0.3-25.0% of dose h) 0.6-17.2% of dose	a) 3.8% of dose b) 9.6% of dose c) 5.5% of dose d) 5.7% of dose e) 2.3% of dose f) 1.4% of dose g) 4.1% of dose h) 2.0% of dose Geometric	a) Semisynthetic meal (4.1 mg Fe) (13 subjects) b) As in a) but no protein (13 subjects) c) As in a) but no carbohydrate (13 subjects) d) As in a) but no fat (13 subjects) e) Semisynthetic meal (4.1 mg Fe) (14 subjects) f) As in e) but double protein (14 subjects) g) As in e) but double carbohydrate (14 subjects) h) As in e) but double fat (14 subjects) Healthy 18-36 yr olds BLOOD; IRON; METALS; DIETS; FOODS	Monsen, E.R. Cook, J.D. 1979 American Journal of Clinical Nutrition 32:804-808
7230 Blood	Ingestion	Radiometry	37	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) 0.33 +or- 0.05% of dose b) 0.51 +or- 0.11% of dose c) 1.01 +or- 0.35% of dose d) 1.36 +or- 0.50% of dose e) 1.37 +or- 0.32% of dose f) 1.91 +or- 0.63% of dose g) 1.86 +or- 0.37% of dose h) 1.86 +or- 0.43% of dose	a) Basal food (10.3 mg Fe, including 1.9 mg ferrous sulfate added as radioactive tracer) (7 subjects) b) Basal food (11.8 mg Fe, including 3.4 mg ferrous sulfate added) (7 subjects) c) Same as a), plus fruit (7 subjects) d) Same as b), plus fruit (7 subjects) e) Same as a), plus meat (7 subjects) f) Same as b), plus meat (7 subjects) g) Same as a), plus fruit and meat (8 subjects) h) Same as b), plus fruit and meat (8 subjects) Basal diet, rice, cabbage, collards, string beans, chili paste, fish sauce and coconut cream Healthy 18-30 yr olds, Thailand THAILAND; ADULTS; BLOOD; BODY; IRON; METALS; DIETS; FOODS	Hallberg, L. Garby, L. Suwanik, P. Bjorn-Rasmussen, E. 1974 American Journal of Clinical Nutrition 27(8):826-836
7231 Blood, plasma	Ingestion	AAS	a) 25 b) 25 c) 25	a) Not given b) Not given c) Not given	a) 104 ug/100 ml b) 101 ug/100 ml c) 92 ug/100 ml	a) 8 mo after 20 mg Zn and 20 mg Fe per day b) 8 mo after 20 mg Fe/day c) Placebo 6-12 yr olds, Iran Zn and Fe supplementation did not stimulate growth or bone development, but Fe alone did. IRAN; CHILDREN; BLOOD PLASMA; IRON; METALS; ZINC; DIETS; RURAL AREAS	Mahloudji, M. Reinhold, J.G. Haghshenass, M. Ronaghy, H.A. Fox, M.R.S. Halsted, J.A. 1975 American Journal of Clinical Nutrition 28(7):721-725

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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
7232 Blood, serum	Ingestion	Colorimetry	a) 11 b) 40 c) 51	a) Not given b) Not given c) Not given	a) 135 +or- 62 ug/dl b) 107 +or- 31 ug/dl c) 118 +or- 47 ug/dl	a) With supplements b) Without supplements c) Combined a) and b) Seventh-Day Adventist Canadian Women, mean age 52.9 +or- 15.3 yr, vegetarians 19 +or- 17 yr. ADULTS; BLOOD SERUM; HAIR; HEMOGLOBINS; IRON; ZINC; DIETS	Anderson, B.M. Gibson, R.S. Sabry, J.H. 1981 American Journal of Clinical Nutrition 34:1042-1048
7233 Blood, serum	Ingestion		a) 10 b) 20 c) 20	a) 74-105 ug/100 ml b) 73-109 ug/100 ml c) 83-113 ug/100 ml	a) 90 ug/100 ml b) 92 ug/100 ml c) 96 ug/100 ml	a) Controls, non-nutrient supplement plus lactose containing placebo capsule b) High protein-vitamin liquid supplement plus mineral capsule (100 mg Fe as ferrous fumarate) 6 days/wk c) Supplement and mineral capsule as in b) plus 40 mg Zn as carbonate 6 days/wk) Range of means over 20 months No supplement during 4 mo summer vacation Significantly increased ht, wt, and bone ages in boys receiving Zn during final 12 mo of supplementation, despite subnormal Zn levels in plasma throughout study Serum Fe rose gradually during study, but rise in b) and c) (iron supplemented) did not exceed that of a) 13 yr old, prepubertal, village schoolboys, southern Iran IRAN; ADOLESCENTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; CALCIUM; IRON; PHOSPHORUS; ZINC; DIETS	Konaghy, H.A. Reinhold, J.G. Mahloudji, M. Ghavami, P. Spivey Fox, M.R. Halsted, J.A. 1974 American Journal of Clinical Nutrition 27(2):112-121
7234 Blood, serum	Ingestion		247	a) 130-50 ug/100 ml b) 110-60 ug/100 ml	a) Not given b) Not given	a) Infant formula fortified with 1.2 mg/l b) Infant formula fortified with 9.4 mg/l Range of means, from age 1-2 mo to age 6 mo, estimated from graph (expressed as ug%) Healthy infants, birth wt >2.5 kg, New South Wales AUSTRALIA; INFANTS; BLOOD SERUM; IRON; METALS; DIETS	Lammi, A.T. Lovric, V.A. Hemphill, W.S. 1975 Medical Journal of Australia 1(19):941-943
7235 Blood, serum			2	4750-8000 umol/l	Not given	Peaks, immediately after 1 or 2 g 68 and 76 yr old anemics BLOOD SERUM; DRUG THERAPY; DRUGS; IRON; METALS; ANEMIA	Blunden, R.W. Lloyd, J.V. Rudzki, Z. Kimber, R.J. 1981 Annals of Clinical Biochemistry 18:215-217
7236 Body	Ingestion	Radiometry	37	20.0-28.8% of dose	Not given	3.7 mg Fe as ferrous sulfate with 30 mg ascorbic acid, daily for 4 days Healthy 18-30 yr olds, Thailand THAILAND; ADULTS; BLOOD; BODY; IRON; METALS; DIETS; FOODS	Hallberg, L. Garby, L. Suwanik, R. Bjorn-Rasmussen, E. 1974 American Journal of Clinical Nutrition 27(8):826-836

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
7237 Amniotic fluid	Injection	GC	a) 3 b) 2 c) 2 d) 5 e) 2 f) 3 g) 7 h) 1 i) 3 j) 1 k) 2 l) 2	a) 0.01-0.02 ug/ml b) Not applicable c) 0.05-0.07 ug/ml d) 0.01-0.13 ug/ml e) 0.03-0.05 ug/ml f) 0.02-0.06 ug/ml g) 0.01-0.09 ug/ml h) Not applicable i) 0.02-0.09 ug/ml j) Not applicable k) 0.05-0.07 ug/ml l) 0.03-0.07 ug/ml	a) Not given b) 0.02 ug/ml c) Not given d) Not given e) Not given f) Not given g) Not given h) 0.02 ug/ml i) Not given j) 0.04 ug/ml k) Not given l) Not given	a) 30 min b) 35 min c) 40 min d) 45 min e) 50 min f) 55 min g) 60 min h) 70 min i) 75 min j) 100 min k) 120 min l) 155 min Times after 100 mg IM. Not detected at 15-25 min. Levels in blood plasma also measured. Women undergoing abortions at 16-20 wk of pregnancy, NY NEW YORK; AMNIOTIC FLUID; BLOOD PLASMA; ANALGESICS; DRUGS; PREGNANCY	Szeto, H.H. Zervoudakis, I.A. Cedergvist, L.L. Inturrisi, C.E. 1978 Obstetrics and Gynecology 52(1):59-62
7238 Blood	Injection		a) 9 b) 9 c) 9	a) 0.20-0.54 ug/ml b) 0.22-0.59 ug/ml c) 0.27-0.70 ug/ml	a) 0.41 +or- 0.17 ug/ml b) 0.42 +or- 0.17 ug/ml c) 0.46 +or- 0.18 ug/ml	a) Severe pain present b) Moderate pain present c) Effective analgesic levels Dose 75 or 100 mg at maximum of once every 1.5 hr Range of means Postoperative patients, ages 25-63 yr, wt 65-93 kg, Australia ADULTS; BLOOD; ANALGESICS; DRUGS; AUSTRALIA	Austin, K.L. Stapleton, J.V. Mather, L.E. 1980 Anesthesiology 53(6):460-466
7239 Blood		GC	1	Not applicable	0.30 mg/100 ml	Drug induced fatality. Ethanol, 0.10 g/100 ml, also found. Autopsy, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7240 Blood, plasma	Injection	GC	a) 5 b) 1 c) 1 d) 3 e) 2 f) 2 g) 5 h) 2 i) 3 j) 7 k) 1 l) 3 m) 1 n) 2 o) 2	a) 0.14-0.37 ug/ml b) Not applicable c) Not applicable d) 0.14-0.32 ug/ml e) 0.11-0.13 ug/ml f) 0.43-0.69 ug/ml g) 0.11-0.49 ug/ml h) 0.14-0.38 ug/ml i) 0.13-0.23 ug/ml j) 0.06-0.37 ug/ml k) Not applicable l) 0.12-0.22 ug/ml m) Not applicable n) Not applicable o) 0.07-0.13 ug/ml	a) Not given b) 0.28 ug/ml c) 0.27 ug/ml d) Not given e) Not given f) Not given g) Not given h) Not given i) Not given j) Not given k) 0.16 ug/ml l) Not given m) 0.11 ug/ml n) 0.12 ug/ml o) Not given	a) 15 min b) 20 min c) 25 min d) 30 min e) 35 min f) 40 min g) 45 min h) 50 min i) 55 min j) 60 min k) 70 min l) 75 min m) 100 min n) 120 min o) 155 min Times after 100 mg IM. Levels in amniotic fluid also measured. Plasma and amniotic fluid equilibrium reached at 120-155 min Women undergoing abortions at 16-20 wk of pregnancy, NY NEW YORK; AMNIOTIC FLUID; BLOOD PLASMA; ANALGESICS; DRUGS; SEDATIVES; PREGNANCY	Szeto, H.H. Zervoudakis, I.A. Cedergvist, L.L. Inturrisi, C.E. 1978 Obstetrics and Gynecology 52(1):59-62

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7241 Blood, serum	Injection		a) 5 b) 5	a) 0.14-0.02 ug/ml b) 0.16-0.01 ug/ml	a) Not given b) Not given	a) 60 and 480 min after 26 mg/cu m. Initial measurement 0.03 ug/ml at 15 min b) 60 and 480 min after 26 mg/cu m plus 30 mg/cu m chlorpromazine. Initial measurement 0.03 ug/ml at 15 min Range of means Estimated from graph Healthy 21-30 yr olds. Marked lethargy and greater depression of mean systolic and diastolic pressures when drugs given together. ADULTS; BLOOD SERUM; URINE; ANALGESICS; DRUG INTERACTION; DRUGS; BLOOD PRESSURE	Stambaugh, J.E. Wainer, I.W. 1981 Journal of Clinical Pharmacology 21:140-146
7242 Blood, serum	Injection	GC	a) 12 b) 12	a) 0.131-0.03 ug/ml b) 0.127-0.03 ug/ml	a) Not given b) Not given	a) 1 and 8 hr after 50 mg IM (test product) as hydrochloride. Initial measurement 0.110 ug/ml at 0.5 hr b) 1 and 8 hr after 50 mg IM (reference product). Initial measurement 0.105 ug/ml at 0.5 hr No significant differences between a) and b) Range of means, estimated from graph Healthy 21-30 yr olds, wt 110-185 lb Dizziness, dry mouth, light headedness BLOOD SERUM; ANALGESICS; DRUGS	Stambaugh, J.E. Wainer, I.W. 1974 Journal of Clinical Pharmacology 14(10):552-559
7243 Urine	Injection		10	a) Not given Not given	a) 34.7% b) 43.5%	a) 24 hr cumulative output, including metabolites after 26 mg/cu m dose b) 24 hr cumulative output, including metabolites, after 26 mg/cu m dose plus 30 mg/cu m chlorpromazine Healthy 21-30 yr olds Marked lethargy and greater depression of mean systolic and diastolic pressures when drugs given together. ADULTS; BLOOD SERUM; URINE; ANALGESICS; DRUG INTERACTION; DRUGS; BLOOD PRESSURE	Stambaugh, J.E. Wainer, I.W. 1981 Journal of Clinical Pharmacology 21:140-146

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
7244 Blood, serum	Ingestion	GC	1	Not applicable	1.65 g/l	Unknown dose of ethanol-isopropanol 45 yr old Coma, respiratory distress BLOOD SERUM; DRUG ABUSE; DRUGS; ALCOHOLS	Vasiliades, J. Pollock, J. Robinson, C.A. 1978 Clinical Chemistry 24(2):383-385

L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)-
62571-86-2
C9-H15-N-O3-S
MW 217.31

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7245 Blood	Ingestion	HPLC	12	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 364 +or- 64 ng/ml b) 342 +or- 76 ng/ml c) 80 ng/ml d) 210 ng/ml e) 0 ng/ml f) 40 ng/ml	a) 1 hr, 5 normal subjects b) 1 hr, 7 patients with chronic renal failure (CRF) c) 2 hr, group a) d) 2 hr, group b) e) 4 hr, group a) f) 4 hr, group b) Times after 50 mg, oral c)-f) estimated from graph Significantly prolonged retention in CRF patients related to decrease in urinary excretion. Normal subjects, mean age 37.3 yr, wt 66.7 kg. Patients with chronic renal failure caused by glomerulonephritis, mean age 47.4 yr, wt 55.6 kg ADULTS; KIDNEY DISEASES; BLOOD; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; METABOLISM; METABOLITES	Onoyama, K. Hirakata, H. Iseki, K. Fujimi, S. Omae, T. Kobayashi, M. Kawahara, Y. 1981 Hypertension 3(4):456-459
7246 Blood, whole	Ingestion	GC/MS	12	a) 400-450 ng/ml b) Not given c) 500-6 ng/ml	a) Not given b) 7 ng/ml c) Not given	a) 1 hr after doses 1, 4 and 7 b) About 8 hr after dose 6 c) 0.5 and 8 hr after dose 7 Range of means, estimated from graph 100 mg 3x/day (7 doses) Mean peak level 713.1 ng/ml at mean time of 1.1 hr. Mean AUC 1067.2 ng hr/ml (0-8 hr) Significantly lower levels in milk Healthy 21-35 yr olds, wt 50-86 kg ADULTS; BLOOD; MILK; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; DRUGS; LACTATION	Devlin, R.G. Fleiss, P.M. 1981 Journal of Clinical Pharmacology 21:110-113

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L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)-
62571-86-2
C9-H15-N-O3-S
MW 217.31

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7247 Milk	Ingestion	GC/MS	11	a) 1.8-3.0 ng/ml b) Not given c) 2.2-5.5 ng/ml	a) Not given b) 2.0 ng/ml c) Not given	a) 1 hr after doses 1, 4, 7 b) About 8 hr after dose 6 c) 0.5 and 4 hr after dose 7. Final measurement 3.0 ng/ml at 8 hr Range of means, estimated from graph 100 mg 3x/day (7 doses). Mean peak level 4.7 ng/ml at mean time of 3.8 hr. Mean AUC 22.9 ng hr/ml Levels significantly lower than those in blood Healthy 21-35 yr olds, wt 50-86 kg ADULTS; BLOOD; MILK; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; DRUGS; LACTATION	Devlin, R.G. Fleiss, P.M. 1981 Journal of Clinical Pharmacology 21:110-113
7248 Urine	Ingestion	HPLC	a) 5 b) 7	a) Not given b) Not given	a) 29 mg b) 8 mg	a) Normal subjects b) Patients with chronic renal failure (CRF) Cumulative excretion 6 hr after 50 mg, oral Estimated from graph Significant decrease in excretion by CRF patient important factor in retention of drug. Normal subjects, mean age 37.3 yr, wt 66.7 kg. Patients with chronic renal failure caused by glomerulonephritis, mean age 47.4 yr, wt 55.6 kg ADULTS; KIDNEY DISEASES; BLOOD; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS; METABOLISM; METABOLITES	Onoyama, K. Hirakata, H. Iseki, K. Fujimi, S. Omae, T. Kobayashi, M. Kawahara, Y. 1981 Hypertension 3(4):456-459

Leurocristine (8 CI)
Vincaleukoblastine, 22-oxo- (9 CI)
57-22-7
C46-H56-N4-O10
MW 824.94, MP 218-220 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7249 Blood, serum	Injection	RIA	a) 1 b) 1	a) 8.9X10(E-7)-2X10(E-9) M b) 1.9X10(E-7)-1.5X10(E-9) M	a) Not applicable b) Not applicable	a) 8 min and 24 hr after 2 mg b) 5 min and 24 hr after 2 mg Four other patients' spot samples at 2.0-4.0 hr ranged from 5.0X10(E-9) M to 2.8X10(E-8) M Patients with lymphoma or leukemia CARCINOMAS; LEUKEMIA; BLOOD SERUM; CEREBROSPINAL FLUID; DRUG THERAPY; DRUGS; CHEMOTHERAPY	Jackson, D.V., Jr. Sethi, V.S. Spurr, C.L. McWhorter, J.M. 1981 Cancer Research 41:1466-68
7250 Cerebrospinal fluid	Injection	RIA	a) 1 b) 1 c) 1	a) 7X10(E-10)-1.2X10(E-9) M b) 9.5X10(E-10) M c) 2.6X10(E-9) M	a) Not given b) Not given c) Not given	a) 30 min and 6 hr after 2 mg b) 30 min after 2 mg c) 3 hr after 2 mg At other time periods measurements fell below detectible limits Patients with lymphoma or leukemia CARCINOMAS; LEUKEMIA; BLOOD SERUM; CEREBROSPINAL FLUID; DRUG THERAPY; DRUGS; CHEMOTHERAPY	Jackson, D.V., Jr. Sethi, V.S. Spurr, C.L. McWhorter, J.M. 1981 Cancer Research 41:1466-68

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
7251 Blood, serum	Ingestion	AAS	16	a) 0.65-0.48 meq/l b) 0.78-0.50 meq/l	a) Not given b) Not given	a) Mean daily range (12 PM and 8 PM) for seven day study. 450 mg slow release tablet given at 8 AM, and 8 PM. 0.55 meq/l average at 8 AM before first dose b) Mean daily range for 300 mg standard capsule given at 8 AM, 2 PM and 8 PM during 7 day study. Peak level occurred at 10 AM, minimum before 8 AM. Secondary peaks (0.7 and 0.65 meq/l) at 4 PM and 10 PM, about 2 hr after 2nd and 3rd doses Estimated from graph Healthy 19-30 yr olds BLOOD SERUM; DRUGS; COMPARATIVE EVALUATIONS; LITHIUM	Caldwell, H.C. Westlake, W.J. Schriver, R.C. Bumbier, E.E. 1981 Journal of Clinical Pharmacology 21:106-109
7252 Blood, serum			60	a) < 0.6 mmol/l b) 0.6-0.8 mmol/l c) >0.8 mmol/l	a) Not given b) Not given c) Not given	a) 33.3% of patients b) 33.3% of patients c) 32% of patients Range of serum levels for patients receiving prophylactic Li therapy Australia AUSTRALIA; NERVOUS SYSTEM DISEASES; BLOOD SERUM; ANTIDEPRESSIVE AGENTS; DRUG THERAPY; DRUGS	Cox, J. Evans, L. Siskind, V. 1979 Medical Journal of Australia 1(13):622

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
7253 Blood, plasma	Ingestion	HPLC	5	0.18-2.65 ug/ml	Not given	0.25 and 3 hr after 320 mg. Final measurement, 0.27 ug/ml at 30 hr Range of means Healthy 21-30 yr olds, mean wt 63 kg BLOOD PLASMA; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS	Fourtillan, J.B. Lefebvre, M.A. Courtois, P. Saux, M.C. 1981 Therapie 36:457-463
7254 Blood, plasma	Ingestion		a) 6 b) 6	a) 970-160 ng/ml b) 1210-160 ng/ml	a) Not given b) Not given	a) 2 and 10 hr after 160 mg dose. Initial measurement 700 ng/ml at 1 hr b) 2 and 10 hr after 160 mg dose. Initial measurement 690 ng/ml at 1 hr. Blood alcohol level of 0.0-150 mg/100 ml (mean 67.8 +or- 55.2 mg/100 ml) Range of means Healthy students, mean age 22.9 yr, mean wt 63.9 kg. ADULTS; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUG INTERACTION; DRUGS; ALCOHOLS	Sotaniemi, E.A. Anttila, M. Rautio, A. Stengard, J. Saukko, P. Jarvensivu, P. 1981 Clinical Pharmacology and Therapeutics 29(6):705-710

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7255 Blood, plasma	Ingestion	Fluorometry	a) 5 b) 5 c) 5 d) 5	a) 0.7-0.1 ug/ml b) 0.8-0.06 ug/ml c) 1.5-0.2 ug/ml d) 4-0.4 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 2 and 48 hr after 50 mg. Initial measurement 0.15 ug/ml at 1 hr b) 2 and 48 hr after 100 mg. Initial measurement 0.5 ug/ml at 1 hr c) 4 and 48 hr after 200 mg. Initial measurement 0.8 ug/ml at 1 hr d) 2 and 48 hr after 400 mg. Initial measurement 2 ug/ml at 1 hr Range of means, estimated from graph Healthy 18-33 yr olds Duration of cardiac beta blocking activity determined by elimination half life and dose. ADULTS; BLOOD PLASMA; DRUGS; COMPARATIVE EVALUATIONS	Harron, D.W.G Balnave, K. Kinney, C.D. Wilson, R. Russell, C.J. Shanks, R.G. 1981 Clinical Pharmacology and Therapeutics 29(3):295-302
7256 Urine	Ingestion	HPLC	5	3.8-58.9% of dose	Not given	2 and 48 hr after 320 mg Cumulative output. Range of means Healthy 21-30 yr olds, mean wt 63 kg BLOOD PLASMA; URINE; ANTIHYPERTENSIVE AGENTS; DRUGS	Fourtillan, J.B. Lefebvre, M.A. Courtois, P. Saux, M.C. 1981 Therapie 36:457-463

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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7257 Bile		RIA	19	52-5254 ug/ml	621 ug/ml	19 of 66 cases submitted for toxicological analysis, autopsy material. New Jersey NEW JERSEY; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; METABOLITES	Coumbis, R.G. Kaul, B. 1974 Journal of Forensic Sciences 19(2):307-312
7258 Bile	Injection Inhalation	RIA GC/MS	6	3.40-72.42 mg/dl	Not given	Suspected or known cocaine overdose fatalities, autopsy data 18-26 yr olds, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7259 Blood	Injection	GC	1	Not given	0.2 mg/100 ml	38 hr after overdose 26 yr old Asystolic state, without spontaneous respirations, comatose and hypotensive. Hemorrhagic bronchopneumonia. Centrolobular hepatic necrosis and renal tubular necrosis. AUTOPSIES; CASE HISTORIES; BLOOD; LIVER; DRUG ABUSE; NARCOTICS; FORENSIC MEDICINE	Wisely, D.V. Nakamura, G.R. 1980 Journal of Forensic Sciences 25(2):366-368
7260 Blood		RIA	20	Negligible-200 ug/ml	84 ug/ml	20 of 66 cases submitted for toxicological analysis, autopsy material. New Jersey NEW JERSEY; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; METABOLITES	Coumbis, R.G. Kaul, B. 1974 Journal of Forensic Sciences 19(2):307-312
7261 Blood		RIA GC/MS	2	a) Not applicable b) Not applicable	a) 0.13 mg/kg b) 0.33 mg/kg	a) 2100 g fetus. Mother dependent > 4 yr. Codeine not detected b) 2054 g male fetus, dead at least 3-4 days pre-delivery. Codeine level 0.04 mg/kg Stillborn infants of 20 and 21 yr old heroin-dependent mothers Death from intrauterine anoxia and acute intoxication. Mothers had ingested or injected morphine derivative and/or propoxyphene. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7262 Blood	Injection Inhalation	RIA GC/MS	4	0.02-0.40 mg/dl	Not given	Suspected or known cocaine overdose fatalities, autopsy data 22-26 yr olds, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7263 Blood		Fluorometry	a) 23 b) 27 c) 268 d) 61 e) 69 f) 74 g) 112 h) 12	a) Not detected-299 ug/dl b) Not detected-29 ug/dl c) Not detected-199 ug/dl d) 1-100+ ug/dl e) 1-99 ug/dl f) 1-99 ug/dl g) 1-99 ug/dl h) 2-31 ug/dl	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) Narcotic addiction deaths, 1974, 23 cases, 6 above 29 ug/dl b) Homicide deaths, 1974, 27 cases c) Narcotic addiction deaths, 1975, 268 cases. 33 above 29 ug/dl d) Deaths involving morphine, 61 cases of c), 13 above 29 ug/dl e) Deaths involving morphine and ethanol, 69 cases of c), 11 above 29 ug/dl f) Deaths involving morphine and quinine, 74 cases of c), 12 above 29 ug/dl g) Deaths involving morphine, ethanol and quinine, 112 cases of c), 17 above 29 ug/dl h) Deaths involving morphine and diazepan, 12 cases of c), none above 29 ug/dl Wayne County, MI MICHIGAN; AUTOPSIES; DRUG ABUSE; DRUGS; NARCOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Monforte, J.R. 1977 Journal of Forensic Sciences 22(4):718-724
7264 Blood, plasma	Injection		12	a) 49-5 mug/ml b) 160-50 mug/ml c) 51-4.5 mug/ml d) 180-50 mug/ml	a) Not given b) Not given c) Not given d) Not given	a) Free morphine. 0.25 and 6 hr after 5.75 mg/sq m (6 subjects) b) Conjugated morphine. 0.5 and 6 hr after dose as in a). Initial measurement 148 mug/ml at 0.25 hr c) Free morphine (second study). 0.25 and 6 hr after 5.75 mg/sq m (6 subjects) d) Conjugated morphine. 0.25 and 6 hr after dose as in c) Range of means, estimated from graph Guanethidine (5 or 10 mg/6 hr) had little effect on plasma levels Healthy 20-28 yr olds BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; NARCOTICS; METABOLITES	Brunk, S.F. Delle, M. Wilson, W.R. 1974c Journal of Clinical Pharmacology 14(11/12):581-587
7265 Blood, plasma	Injection	Radiometry	12	a) 55-5 mug/ml b) 46-4 mug/ml c) 45-5 mug/ml d) 43-3 mug/ml e) 170-50 mug/ml f) 170-60 mug/ml g) 170-50 mug/ml h) 190-70 mug/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) Free morphine (6 subjects) b) Free morphine. Dose plus 0.6 g aspirin/6 hr (same subjects as a)) c) Free morphine (6 subjects) d) Free morphine. Dose plus 1.2 g aspirin/6 hr (same subjects as c)) e) Conjugated morphine (metabolite) (6 subjects) f) Conjugated morphine. Morphine dose plus 0.6 g aspirin/6 hr (same subjects as e)) g) Conjugated morphine (6 subjects) h) Conjugated morphine. Morphine dose plus 1.2 g aspirin/6 hr (same subjects as g)) Means (estimated from graph) at 0.25 and 6 hr after 5.75 mg morphine/sq m. Levels at 0.5 hr for e), f) and g) slightly higher than 170 mug/ml Significant differences between a) and b), c) and d), g) and h) Healthy 21-28 yr olds BLOOD PLASMA; URINE; ANALGESICS; DRUG INTERACTION; DRUGS; NARCOTICS	Brunk, S.F. Delle, M. Wilson, W.R. 1974b Clinical Pharmacology and Therapeutics 15(3):283-290

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7266 Blood, plasma	Injection		12	a) 53-5 mug/ml b) 48-5 mug/ml c) 160-50 mug/ml d) 170-50 mug/ml	a) Not given b) Not given c) Not given d) Not given	a) Free morphine. 0.25 and 6 hr after 5.75 mg/sq m (6 subjects) b) Same as a), second study (6 subjects) c) Conjugated morphine (same study as a)). 0.5 and 6 hr after dose. 150 mug/ml at 0.25 hr d) Conjugated morphine (same study as b). 0.5 and 6 hr after dose. 150 mug/ml at 0.25 hr Range of means estimated from graph Propranolol (20 or 40 mg/6 hr) had little effect on levels. Healthy 21-28 yr olds BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; NARCOTICS; METABOLITES	Brunk, S.F. Delle, M. Wilson, W.R. 1974a Clinical Pharmacology and Therapeutics 16(6):1039-1044
7267 Blood, serum	Injection	RIA	3-11	a) 0.4-0.02 ug/ml b) 0.07-0.02 ug/ml c) 0.025-0.075 ug/ml	a) Not given b) Not given c) Not given	a) Total morphine. Initial measurement and 4 hr after 10 mg/70 kg, IV b) Free morphine. Initial measurement and 4 hr after 10 mg/70 kg, IM c) Conjugated morphine, same study as b). 0.4 and 2 hr Range of means, estimated from graph Patients >50 yr old had significantly higher levels during first 5 min 23-75 yr old surgical patients AGE; BLOOD SERUM; DRUG THERAPY; DRUGS; NARCOTICS	Berkowitz, B.A. Ngai, S.H. Yang, J.C. Hempstead, B.S. Spector, S. 1975 Clinical Pharmacology and Therapeutics 17(6):629-635
7268 Brain		RIA	43	Negligible-200 ug/100g	35 ug/100g	43 of 66 cases submitted for toxicological analysis, autopsy material. New Jersey NEW JERSEY; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; METABOLITES	Coumbis, R.G. Kaul, B. 1974 Journal of Forensic Sciences 19(2):307-312
7269 Brain		RIA GC/MS	2	a) Not applicable b) Not applicable	a) 0.08 mg/kg b) 0.08 mg/kg	a) 2100 fetus. Mother dependent > 4 yr. Codeine not detected b) 2054 g male dead at least 3-4 days pre-delivery. Codeine not detected Stillborn infants of 20 and 21 yr old heroin-dependent mothers Death from intrauterine anoxia and acute intoxication. Mothers had ingested or injected morphine derivative and/or propoxyphene. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7270 Kidney		RIA	29	5-225 ug/100g	93 ug/100g	29 of 66 cases submitted for toxicological analysis, autopsy material. New Jersey NEW JERSEY; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; METABOLITES	Coumbis, R.G. Kaul, B. 1974 Journal of Forensic Sciences 19(2):307-312
7271 Kidney		RIA GC/MS	1	Not applicable	0.21 mg/kg	2100 g fetus. Mother dependent > 4 yr, codeine level 0.02 mg/kg. Stillborn infant of 20 yr old heroin-dependent mother Death from intrauterine anoxia and acute intoxication. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7272 Liver	Injection	GC	1	Not given	0.05 mg/100 g	38 hr after overdose 26 yr old Asystolic state, without spontaneous respirations, comatose and hypotensive. Hemorrhagic bronchopneumonia. Centrolobular hepatic necrosis and renal tubular necrosis. AUTOPSIES; CASE HISTORIES; BLOOD; LIVER; DRUG ABUSE; NARCOTICS; FORENSIC MEDICINE	Wisely, D.V. Nakamura, G.R. 1980 Journal of Forensic Sciences 25(2):366-368
7273 Liver		RIA	44	6-200 ug/100g	72 ug/100g	44 of 66 cases submitted for toxicological analysis, autopsy material. New Jersey AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; METABOLITES	Coumbis, R.G. Kaul, B. 1974 Journal of Forensic Sciences 19(2):307-312
7274 Liver		RIA GC/MS	2	a) Not applicable b) Not applicable	a) 0.18 mg/kg b) 0.12 mg/kg	2100 g fetus. Mother dependent > 4 yr. Codeine not detected b) 364 g fetus dead 4-5 days pre-delivery. Stillborn infants of 20 and 21 yr old heroin-dependent mothers Death from intrauterine anoxia and acute intoxication. Mothers had ingested or injected morphine derivative and/or propoxyphene. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7275 Lung		RIA GC/MS	1	Not applicable	0.20 mg/kg	2100 g fetus. Mother dependent > 4 yr. Codeine level 0.02 mg/kg. Stillborn infant of 20 yr old heroin-dependent mother Death from intrauterine anoxia and acute intoxication. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7276 Urine	Injection	RIA	1	a) 7979-80 ug/l b) 2000-21 ug/l	a) Not given b) Not given	a) 0-72 hr after 10 mg/70 kg, subject 1 b) 0-72 hr after 10 mg/70 kg, subject 2 Representative data from 12 subjects expressed as morphine equivalents. Volunteers URINE; DRUGS; HYPNOTICS; NARCOTICS; MEASUREMENT METHODS	Usategui-Gomez, M. Heveran, J.E. Cleeland, R. McGhee, B. Telischak, Z. Awdziej, T. Grunberg, E. 1975 Clinical Chemistry 21(10):1378-1382
7277 Urine	Injection	RIA	a) 1 b) 1 c) 1 d) 1 e) 1	a) 5.334-7.423 mg b) 12.407-14.241 mg c) 8.775-14.383 mg d) 26.100-32.792 mg e) 35.100-37.298 mg	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 53.3-74.2% of 10 mg dose b) 62.0-71.2% of 20 mg dose c) 29.3-47.9% of 30 mg dose d) 65.3-82.0% of 40 mg dose e) 70.2-74.6% of 50 mg dose Total cumulative output (morphine and glucuronide metabolite) 24 and 168 hr after IV dose. Hospital patients, Japan URINE; DRUGS; NARCOTICS; MEASUREMENT METHODS; JAPAN	Takahashi, M. Koida, M. Koneto, H. Goto, Y. Haseba, S. 1975 Japanese Journal of Pharmacology 25:348-349
7278 Urine	Injection	TLC GC	4	a) 6.60-9.90% of dose b) 62.97-82.80% of dose	a) 8.27 +or- 0.60% of dose b) 76.49 +or- 2.40% of dose SE	a) Free morphine b) Total, including metabolites Mean daily output for 7 day period after stabilization on 60 mg, as sulfate, 4 x/day for 4 wk. Data also given for individual metabolites 27-41 yr old morphine addicts DRUG ABUSE; DRUGS; NARCOTICS; URINE; METABOLITES	Yeh, S.Y. 1975 Journal of Pharmacology and Experimental Therapeutics 192(1):201-210
7279 Urine	Injection		12	a) 4-11% of dose b) 5-11% of dose c) 5-48% of dose d) 7-50% of dose SE	a) Not given b) Not given c) Not given d) Not given	a) Free morphine. 0.25 and 24 hr cumulative output after 5.75 mg/sq m (6 subjects) b) Same as a) second study (6 subjects) c) Same as a), conjugated morphine d) Same as b) conjugated morphine Range of means, estimated from graph Guanethidine (5 or 10 mg/6 hr) had little effect on cumulative output Healthy 20-28 yr olds BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; NARCOTICS; METABOLITES	Brunk, S.F. Delle, M. Wilson, W.R. 1974c Journal of Clinical Pharmacology 14(11/12):581-587

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7280 Urine	Injection	Radiometry	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	a) 11.5% of dose b) 12% of dose c) 11% of dose d) 10.4% of dose e) 57% of dose f) 50% of dose g) 51.4% of dose h) 47.2% of dose	a) Free morphine (6 subjects) b) Free morphine. Dose plus 0.6 g aspirin/6 hr (same subjects as a)) c) Free morphine (6 subjects) d) Free morphine. Dose plus 1.2 g aspirin/6 hr (same subjects as c)) e) Conjugated morphine (metabolite) (6 subjects) f) Conjugated morphine. Morphine dose plus 0.6 g aspirin/6 hr (same subjects as e)) g) Conjugated morphine (6 subjects) h) Conjugated morphine. Morphine dose plus 1.2 g aspirin/6 hr (same subjects as g)) 48 hr cumulative excretion after 5.75 mg morphine/sq m. Estimated from graph Significant differences between a) and b), c) and d) Healthy 21-28 yr olds BLOOD PLASMA; URINE; ANALGESICS; DRUG INTERACTION; DRUGS; NARCOTICS	Brunk, S.F. Delle, M. Wilson, W.R. 1974b Clinical Pharmacology and Therapeutics 15(3):283-290
7281 Urine	Injection	Radiometry	2	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) Not applicable h) Not applicable	a) 50.9% of dose b) 47.4% of dose c) 85.5% of dose d) 78.6% of dose e) 47.8% of dose f) 43.6% of dose g) 87.2% of dose h) 78.6% of dose	a) Addict, 6 hr, % radioactivity as H-3 b) Addict, 6 hr, % radioactivity as C-14 c) Addict, 72 hr, % radioactivity as H-3 d) Addict, 72 hr, % radioactivity as C-14 e) Non-user, 6 hr, % radioactivity as H-3 f) Non-user, 6 hr, % radioactivity as C-14 g) Non-user, 72 hr, % radioactivity as H-3 h) Non-user 72 hr, % radioactivity as C-14 Dose a mixture of morphine 6-[H-3] and morphine-N-[C-14]H3 27 yr old opiate addict, no morphine or heroin for 6 mo, maintained on methadone. Normal 26 yr old, no medication. URINE; DRUGS; NARCOTICS; MEASUREMENT METHODS; METABOLISM	Hahn, E.F. Roffwarg, H. Fishman, J. 1977 Research Communications in Chemical Pathology and Pharmacology 18(3):401-414
7282 Urine	Injection		12	a) Not given b) Not given c) Not given	a) 10.9% of dose b) 12.5% of dose c) 9.7% of dose	a) Free morphine. 24 hr cumulative excretion after 5.75 mg/sq m b) Same as a), with 20 mg propranolol/6 hr c) Same as a), with 40 mg propranolol/6 hr Cumulative 24 hr excretion of conjugated morphine was 48-49% of dose in a)-c). Healthy 21-28 yr olds BLOOD PLASMA; URINE; DRUG INTERACTION; DRUGS; NARCOTICS; METABOLITES	Brunk, S.F. Delle, M. Wilson, W.R. 1974a Clinical Pharmacology and Therapeutics 16(6):1039-1044

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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-O3
MW 285.33, MP 197 C (metastable phase), 254 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7283 Urine	Injection	RIA GC/MS	1	Not applicable	5.00 mg/dl	Suspected cocaine overdose fatality, autopsy data 37 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905
7284 Urine		GC Fluorometry UV	a) 32 b) 2 c) 4	a) 0.1-4.0 mg/100 ml b) 0.1-0.2 mg/100 ml c) 0.5-4.0 mg/100 ml	a) Not given b) Not given c) Not given	a) U.S. Army separation center A, 894 tests, 1971 b) U.S. Army separation center B, 393 tests, 1971 c) U.S. Army separation center C, 345 tests, 1971 URINE; DRUG ABUSE; DRUGS; NARCOTICS	Winter, P.E. Stahl, C.J. Goldbaum, L.R. Dominguez, A.M. 1974 Journal of Forensic Sciences 19(2):317-324
7285 Urine		Spin immunoassay	10	a) 20000-2 ng Eq/ml b) 15.2-136.1 mg Eq	a) Not given b) 50 mg Eq	a) Day 0 and 13 after start of heroin withdrawal b) Total output for first 72 hr following withdrawal Last dose 100-750 mg. Mean daily intake exceeded 1000 mg Range of medians estimated from graph Military personnel, mean age 20.3 yr, leaving Viet Nam VIETNAM; ADULTS; URINE; ANALGESICS; DRUG ABUSE; DRUGS; SEDATIVES	Robinson, M.G. Howe, R.C. Ream, N.W. Siegel, H.W. Hegge, F.W. 1974 Clinical Pharmacology and Therapeutics 16(2):303-309

Morphinan-3,6alpha-diol, 7,8-didehydro-4,5alpha-epoxy-17-methyl-, diacetate (ester) (8 CI)
Morphinan-3,6-diol, 7,8-didehydro-4,5-epoxy-17-methyl-(5alpha,6alpha)-, diacetate (ester) (9 CI)
561-27-3
C21-H23-N-O5
MW 369.40, MP 173 C, BP 273 C at 12 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7286 Blood, plasma	Injection	RIA	a) 16 b) 3	a) 0-160 ng/ml b) 0.5-15 ng/ml	a) Not given b) Not given	a) Men b) Women Dose >150 mg/day Heroin addicts, 19-25 yr old Significant reduction of testosterone and dihydrotestosterone levels no changes in those of androstenedione, luteinizing hormone, and follicle stimulating hormone BLOOD PLASMA; DRUG ABUSE; DRUGS; NARCOTICS	Bolelli, G. Lafisca, S. Flamigni, C. Lodi, S. Franceschetti, F. Filicori, M. Mosca, R. 1979 Toxicology 15:19-29

Morphinan-6-one, 17-(cyclopropylmethyl)-4,5alpha-epoxy-3,14-dihydroxy- (8 CI)
Morphinan-6-one, 17-(cyclopropylmethyl)-4,5-epoxy-3,14-dihydroxy-, (5alpha)- (9 CI)
16590-41-3
C20-H23-N-O4
MW 341.44

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7287 Blood, plasma	Injection Ingestion	TLC Radiometry GC/MS	a)-d) 6 e)-h) 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) 7.9 +or- 1.9 ng Eq/ml b) 32 +or- 4 ng Eq/ml c) 3.2 +or- 1.2 ng Eq/ml d) 1.3 +or- 0.4 ng Eq/ml e) 4.3 +or- 1.2 ng Eq/ml f) 0.8 +or- 0.1 ng Eq/ml g) 0.6 +or- 0.2 ng Eq/ml h) 0.5 +or- 0.2 ng Eq/ml S.E.	a) Naltrexone, 135 min. Conjugated form, 67 +or- 14 ng Eq/ml at 150 min b) 6beta-naltrexol, 135 and 270 min. Conjugated form, 48 +or- 16 ng Eq/ml at 360 min c) 2-hydroxy-3-O-methyl-6beta-naltrexol, 270 min. Conjugated form, 9.8 +or- 4.6 ng Eq/ml at 105 min d) 3-O-methyl-6beta-naltrexol, 105 and 165 min. Conjugated form, 24 +or- 11 ng Eq/ml at 150 min e) Same as a), 3 min. Conjugated form, 0.9 ng Eq/ml at 30-90 min f) Same as b), 10-180 min. Conjugated form, 0.8 ng Eq/ml at 300 min g) Same as c), 3 min. Conjugated form, 0.2 ng Eq/ml at 30-180 min h) Same as d), 3 min. Conjugated form 0.2 ng Eq/ml at 15-60 min Mean peaks after 50 mg oral (a)-d)) and 1 mg IV (e)-h)) Healthy 18-30 yr olds BLOOD PLASMA; URINE; DRUGS; METABOLITES	Wall, M.E. Brine, D.R. Perez-Reyes, M. 1981 Drug Metabolism and Disposition 9(4):369-375
7288 Urine	Injection Ingestion	TLC Radiometry GC/MS	a) 6 b) 5	a) Not given b) Not given	a) 60 +or- 3% of dose b) 56 +or- 5% of dose S.E.	a) 48 hr cumulative excretion after 50 mg oral, as hydrochloride b) 72 hr cumulative excretion after 1 mg IV Healthy 18-30 yr olds BLOOD PLASMA; URINE; DRUGS; METABOLITES	Wall, M.E. Brine, D.R. Perez-Reyes, M. 1981 Drug Metabolism and Disposition 9(4):369-375

Morphinan-6-one, 4,5alpha-epoxy-3-hydroxy-17-methyl- (8 CI)
Morphinan-6-one, 4,5-epoxy-3-hydroxy-17-methyl-, (5alpha)- (9 CI)
466-99-9
C17-H19-N-O3
MW 285.33, MP 266-267 C (crystals from ethanol)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7289 Blood, plasma	Injection, Ingestion	RIA	6	a) 1.5-0.01 ng/ml b) 1.3-0.2 ng/ml	a) Not given b) Not given	a) 15 min and 12 hr after 2 mg IV (mean AUC 83.05 ng/ml x hr) b) 75 min and 12 hr after 4 mg oral. Initial measurement 0.6 ng/ml at 15 min (mean AUC 87.16 ng/ml x hr) Range of means, estimated from graph 25-29 yr old nonsmokers ADULTS; BLOOD PLASMA; DRUGS; NARCOTICS	Vallner, J.J. Stewart, J.T. Kotzan, J.A. Kirsten, E.B. Honigberg, I.L. 1981 Journal of Clinical Pharmacology 21:152-156

Morphinan-6-one, 4,5alpha-epoxy-3-methoxy-17-methyl- (8 CI)
Morphinan-6-one, 4,5-epoxy-3-methoxy-17-methyl-, (5alpha)- (9 CI)
125-29-1
C18-H21-N-O3
MW 299.36, MP 198 C (prisms from alcohol)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7290 Blood	Ingestion	RIA	a) 1 b) 1	a) Not applicable b) Not applicable	a) 1.5 mg/l b) 1.2 mg/l	a) Dose unknown. 960 mg/l ethanol also present b) Dose reported to be 6 oz Hycodan (5 mg/5 ml hydrocodone bitartrate). 0.9 mg/l diazepam and 0.6 mg/l nordiazepam also present. 27 yr old drug abuser and 35 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Cimbura, G. Koves, E. 1981 Journal of Analytical Toxicology 5: 296-299

Morphinan-6alpha-ol, 7,8-didehydro-4,5alpha-epoxy-3-methoxy-17-methyl- (8 CI)
Morphinan-6-ol, 7,8-didehydro-4,5-epoxy-3-methoxy-17-methyl-, (5alpha,6alpha)- (9 CI)
76-57-3
C18-H21-N-O3
MW 299.36, MP 154-156 C (after drying at 80 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7291 Bile	Injection	RIA GC/MS	1	Not applicable	0.60 mg/dl	Suspected cocaine overdose fatality 22 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905
7292 Blood		RIA GC/MS	1	Not applicable	0.04 mg/kg	2054 g male fetus dead at least 3-4 days pre-delivery. Morphine level 0.33 mg/kg Stillborn infant of heroin-dependent mother Death from intrauterine anoxia and acute intoxication. Mother used heroin and propoxyphene during pregnancy. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7293 Blood	Inhalation	RIA GC/MS	1	Not applicable	0.25 mg/dl	Suspected cocaine overdose fatality 22 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905
7294 Blood, plasma	Ingestion	GC/MS	a) 1 b) 1	a) 117-25 ng/ml b) 97-15 ng/ml	a) Not given b) Not given	a) 1 and 8 hr after 60 mg as sulfate. Initial measurement 110 ng/ml at 0.5 hr b) 1 and 8 hr after 60 mg as sulfate. Initial measurement 44 ng/ml at 0.5 hr Healthy subjects BLOOD PLASMA; DRUGS; NARCOTICS; MEASUREMENT METHODS; METABOLITES	Brunson, M.K. Nash, J.F. 1975 Clinical Chemistry 21(13):1956-1960

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Morphinan-6alpha-ol, 7,8-didehydro-4,5alpha-epoxy-3-methoxy-17-methyl- (8 CI)
Morphinan-6-ol, 7,8-didehydro-4,5-epoxy-3-methoxy-17-methyl-, (5alpha,6alpha)- (9 CI)
76-57-3
C18-H21-N-O3
MW 299.36, MP 154-156 C (after drying at 80 C)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7295 Blood, plasma	Ingestion	RIA	2	a) 200-15 ng/ml b) 18-4 ng/ml c) 200-4 ng/ml d) 7-1.5 ng/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 1 and 12 hr, subject 1 b) 1 and 12 hr. Metabolite (morphine), subject 1 c) 1 and 12 hr, subject 2 d) 1 and 12 hr. Metabolite (morphine), subject 2 Dose 60 mg as phosphate, plus 454 mg aspirin, 324 mg phenacetin and 64 mg caffeine Estimated from graph 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633
7296 Blood, plasma	Injection Ingestion	RIA	6	a) 195-340 ng/ml b) 102-140 ng/ml	a) 264 ng/ml b) 117 ng/ml	a) 65 mg, IM, as phosphate b) 65 mg, oral, as phosphate Peak levels, at 0.25-1 hr (a) and 0.75-1 hr (b). Healthy 18-21 yr olds BLOOD PLASMA; DRUGS; NARCOTICS; MEASUREMENT METHODS	Findlay, J.W.A. Butz, R.F. Welch, R.M. 1977 Clinical Pharmacology and Therapeutics 22(4):439-446
7297 Kidney			1	Not applicable	0.02 mg/kg	2100 g fetus. Mother dependent > 4 yr. Stillborn infant of heroin-dependent mother Death from intrauterine anoxia and acute intoxication. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7298 Lung		RIA GC/MS	1	Not applicable	0.02 mg/kg	2100 g fetus. Mother dependent > 4 yr. Morphine level 0.20 mg/kg Stillborn infant of heroin-dependent mother Death from intrauterine anoxia and acute intoxication. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914

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Morphinan-6alpha-ol, 7,8-didehydro-4,5alpha-epoxy-3-methoxy-17-methyl- (8 CI)
Morphinan-6-ol, 7,8-didehydro-4,5-epoxy-3-methoxy-17-methyl-, (5alpha,6alpha)- (9 CI)
76-57-3
C18-H21-N-O3
MW 299.36, MP 154-156 C (after drying at 80 C)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7299 Milk	Ingestion	RIA	2	a) 500-20 ng/ml b) 2-20 ng/ml c) 500-5 ng/ml d) 8-3 ng/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 1 and 12 hr. Initial measurement 105 ng/ml at 0.5 hr, subject 1 b) 0.5 and 12 hr. Metabolite (morphine), subject 1 c) 1.5 and 14 hr. Initial measurement 300 ng/ml at 1.0 hr, subject 2 d) 1.5 and 36 hr. Metabolite (morphine), subject 2 Dose 60 mg as phosphate, plus 454 mg aspirin, 324 mg phenacetin and 64 mg caffeine Estimated from graph 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633
7300 Urine	Injection	RIA GC/MS	1	Not applicable	0.14 mg/dl	Suspected cocaine overdose fatality 37 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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
7301 Blood, plasma	Inhalation Oral absorption		163	a) 6.2-91.2 nmol/l b) 4.9-165.8 nmol/l c) 57.3-448.8 nmol/l d) 78.9-797.2 nmol/l e) 37.0-474.7 nmol/l f) 66.6-431.6 nmol/l g) 430-295 nmol/l h) 800-450 nmol/l	a) 37.9 nmol/l b) 72.8 nmol/l c) 222.3 nmol/l d) 464.9 nmol/l e) 226.3 nmol/l f) 296.5 nmol/l g) Not given h) Not given	a) 4 subjects, never used snuff, range 3.7-102.3 nmol/l before snuffing, mean decrease after snuffing 3.1 nmol/l b) 10 occasional snuffers, range 0-180.0 nmol/l before snuffing, mean increase after snuffing, 12.3 +or- 20.3 nmol/l c) 8 daily snuffers, range 22.2-238.6 nmol/l before snuffing, mean increase after snuffing, 77.7 +or- 70.3 nmol/l d) 5 multiple dose snuffers, range 0-241.7 nmol/l before snuffing, mean increase after snuffing, 332.9 +or- 199.1 nmol/l e) 136 heavy cigarette smokers 2 min after finishing cigarette, mean increase after 1 cigarette 62.3 nmol/l +or- 48.1 nmol/l f) 15 rapid smokers (1 puff every 6 s), mean tolerence level 43 puffs (1.7 cigarettes) g) 1 subject, range over 15 min after 4 g snuff in 60 s h) 1 subject, range over 40 min after 50 small spoons snuff in 85 s a)-d) Level 6-17 min after a pinch of snuff g)-h) Estimated from graph Levels probably control rate and amount of self usage in smokers and snuffers. Substitution of snuff for cigarette smoking reduced risk of lung cancer, bronchitis, emphysema, with some increased risk of cancer of nasopharynx or mouth. 27 snuff users at meeting in Wellington, Somerset, United Kingdom 136 heavy cigarette smokers at smokers' clinic, Maudsley Hospital UNITED KINGDOM; ADULTS; BLOOD PLASMA; NICOTINE; METABOLISM; METABOLITES; SMOKING; TOBACCOS	Russell, M.A.H. Jarvis, M.J. Devitt, G. Feyerabend, C. 1981 British Medical Journal 283(6295):814-817
7302 Blood, plasma	Injection	GC	6	a) 3-28 ng/ml b) 4-27 ng/ml	a) Not given b) Not given	a) 0 and 10 min after start of 2 ug/kg/min IV for 10 min. 7 ng/ml at 70 min. Acid urine b) 0 and 10 min after start of 2 ug/kg/min IV for 10 min. 9 ng/ml at 70 min. Alkaline urine Range of means, estimated from graph Healthy 21-35 yr old smokers (1-2 packs/day) BLOOD PLASMA; DRUGS; NICOTINE	Rosenberg, J. Benowitz, N.L. Jacob, P. Wilson, K.M. 1980 Clinical Pharmacology and Therapeutics 28(4):517-522

Nitroglycerin (8 CI)
1,2,3-Propanetriol, trinitrate (9 CI)
55-63-0
C3-H5-N3-O9
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
7303 Blood	Dermal	GC	4	a) 0.15-0.18 ng/ml b) 0.36-0.47 ng/ml c) 0.37-0.24 ng/ml d) 0.20-0.88 ng/ml	a) 0.17 ng/ml b) 0.41 ng/ml c) Not given d) Not given	a) Peaks, 30 min after 16 mg to 25 sq cm. <0.05 ng/ml at 90 min (3 subjects) b) Peaks, 45 min after 16 mg to 100 sq cm. 0.16-0.32 (mean 0.25) ng/ml at 90 min, (3 subjects) c) 60 and 90 min after 16 mg to 100 sq cm. 0.31 ng/ml at 30 min (1 subject) d) 30 and 60 min after 32 mg to 100 sq cm. 0.83 ng/ml at 90 min (1 subject) 2% ointment applied to chest Healthy adults ADULTS; DRUGS; VASODILATORS; BLOOD	Sved, S. McLean, W.M. McGilveray, I.J. 1981 Journal of Pharmaceutical Sciences 70(12):1368-1369

Oxalic acid (8 CI)
Ethanedioic acid (9 CI)
144-62-7
C2-H2-O4
MW 90.04, MP 101-102 C, BP 150 C (sublimes)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7304 Urine	Ingestion	Radiometry	a) 15 b) 21 c) 4 d) 7	a) Not given b) Not given c) Not given d) Not given	a) 0.49 +or- 0.07 mmol b) 0.64 +or- 0.14 mmol c) 0.70 +or- 0.39 mmol d) 1.20 +or- 0.75 mmol	a) Controls b) Ca oxalate stone formers c) Ileocecal resection patients d) End to side jejunoileal bypass patients 36 hr excretion after 8 mg (60 umol). Na oxalate and 2.5 uCi of [C-14] oxalate after overnight fast d) significantly different from a) and b). Patients and normal controls on no other drugs before or during study. URINE; MINERAL DEPOSITS; MINERAL METABOLISM; SWEDEN	Tiselius, H.-G. Ahlstrand, C. Lundstrom, B. Nilsson, M.-A. 1981 Clinical Chemistry 27(10):1682-1685

p-Acetophenetidide (8 CI)
Acetamide, N-(4-ethoxyphenyl)- (9 CI)
62-44-2
C10-H13-N-O2
MW 179.21, MP 134-135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7305 Blood, plasma	Ingestion	RIA	2	a) 900-3 ng/ml b) 2000-300 ng/ml c) 3000-2 ng/ml d) 1500-150 ng/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 0.5 and 12 hr, subject 1 b) 1.5 and 12 hr. Initial measurement 1500 ng/ml at 0.5 hr. Phenacetin metabolite (acetaminophen), subject 1 c) 1 and 12 hr, subject 2 d) 1 and 12 hr. Phenacetin metabolite (acetaminophen), subject 2 Dose 324 ng plus 454 mg aspirin, 64 mg caffeine and 60 mg codeine phosphate Estimated from graph 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633
7306 Milk	Ingestion	RIA	2	a) 500-3 ng/ml b) 1500-500 ng/ml c) 2000-15 ng/ml d) 1500-50 ng/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 0.5 and 12 hr, subject 1 b) 3 and 12 hr. Initial measurement 700 ng/ml at 0.5 hr. Phenacetin metabolite (acetaminophen, subject 1) c) 1 and 7 hr, subject 2 d) 2 and 24 hr. Initial measurement 800 ng/ml at 0.5 hr. Phenacetin metabolite (acetaminophen, subject 2) Dose 324 mg plus 454 mg aspirin, 64 mg caffeine and 60 mg codeine phosphate Estimated from graph 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

Phenethylamine, alpha-methyl-, (+)- (8 CI)
Benzeneethanamine, alpha-methyl-, (S)- (9 CI)
51-64-9
C9-H13-N
MW 135.20, BP 200-203 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7307 Urine	Ingestion	GC	12	a) Not given b) Not given c) Not given	a) 28% of dose b) 29% of dose c) 28% of dose	a) After 5 mg/70 kg b) After 10 mg/70 kg c) After 15 mg/70 kg 12 hr cumulative excretion Healthy 21-30 yr olds Severity of symptoms increased with dose (evaluated by modified Cornel Medical Index) URINE; AUTONOMIC DRUGS; DRUGS; PSYCHOTROPIC DRUGS	Evans, M.A. Wimbish, G. Griffis, L. Hartz, R. Brown, D.J. Rodda, B.E. Lomberger, L. Forney, R.B. 1977 Journal of Forensic Sciences 22(1):197-201

Phenethylamine, alpha-methyl-, (+-)- (8 CI)
Benzeneethanamine, alpha-methyl-, (+-)- (9 CI)
300-62-9
C9-H13-N
MW 135.20, BP 200-203 C at 760 mm Hg, 82-85 C at 13 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7308 Blood	Injection	TLC Fluorometry	1	Not applicable	0.7 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312
7309 Blood, plasma	Ingestion	Enzymatic	2	a) 81-15 ng/ml b) 10-71 ng/ml c) 124-20 ng/ml d) 96-10 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 5 and 27 hr after 0.23 mg/kg (free base), as d-amphetamine sulfate. Initial measurement 51 ng/ml at 2 hr b) 1 and 3 hr after 0.23 mg/kg (free base), as l-amphetamine sulfate. Final measurement 13 ng/ml at 24 hr c) 3 and 25 hr after 0.5 mg/kg (free base), d-amphetamine sulfate. Initial measurement 95 ng/ml at 1 hr d) 1 and 30 hr after 0.5 mg/kg (free base), as l-amphetamine sulfate Estimated from graph BLOOD PLASMA; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Kreuz, D.S. Axelrod, J. 1974 Science 183(4123):420-421
7310 Brain	Injection	TLC Fluorometry	1	Not applicable	0.3 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312
7311 Kidney	Injection	TLC Fluorometry	1	Not applicable	1.9 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312
7312 Liver	Injection	TLC Fluorometry	1	Not applicable	1.2 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312
7313 Lung	Injection	TLC Fluorometry	1	Not applicable	1.7 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312
7314 Muscle	Injection	TLC Fluorometry	1	Not applicable	0.4 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312

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Phenethylamine, alpha-methyl-, (+-)- (8 CI)
Benzeneethanamine, alpha-methyl-, (+-)- (9 CI)
300-62-9
C9-H13-N
MW 135.20, BP 200-203 C at 760 mm Hg, 82-85 C at 13 mm Hg

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7315 Urine	Injection	TLC Fluorometry	1	Not applicable	24.2 mg/100 mg	Lethal overdose 22 yr old, Netherlands AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; MUSCLES; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FORENSIC MEDICINE; NETHERLANDS	van Hoof, F. Heyndrickx, A. Timperman, J. 1974 Archives of Toxicology 32:307-312

Phenol, p-(dimethylamino)-, hydrochloride (8 CI)
Phenol, 4-(dimethylamino)-, hydrochloride (9 CI)
5882-48-4
C8-H11-N-O.Cl-H
MW 173.66

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7316 Urine	Injection	TLC Colorimetry	6	a) 33.2-50.7% b) 8.7-14.9% c) 12.1-17.5% d) 59.9-74.4% e) 6.9-15.4% f) 0.3-0.7%	a) 40.7 +or- 4.3% b) 11.6 +or- 1.6% c) 15.3 +or- 1.8% d) 67.6 +or- 4.2% e) 9.4 +or- 2.3% f) 0.5 +or- 0.1% S.E.	a) 4-dimethylaminophenol (DMAP)-glucuronide b) DMAP-SO4 c) DMAP-thioethers d) a)+b)+c) e) Tris-(cys)-DMAP f) Tris-(N-acys)-DMAP Metabolites in 24 hr urine after 3.2 mg DMAP-HCL/kg IV % of dose Healthy volunteers, wt 70-90 kg ADULTS; URINE; DRUGS; METABOLISM; METABOLITES	Jancso, P. Szinicz, L. Eyer, P. 1981 Archives of Toxicology 47:39-45

Phenol, 3-(3-ethylhexahydro-1-methyl-1H-azepin-3-yl-
54340-58-8
C15-H23-N-O
MW 233.39

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7317 Blood, plasma	Injection	HPLC	26	a) 22-343 ng/ml b) 16-124 ng/ml c) 13-47 ng/ml d) 3-7 ng/ml e) <3-4 ng/ml f) <3-3 ng/ml g) <3 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) Maternal levels (12 subjects) b) Initial neonatal levels (13 subjects) c) Neonatal levels at 4 hr after birth (7 subjects) d) Neonatal levels 8 hr after birth (2 subjects) e) Neonatal levels 12 hr after birth (6 subjects) f) Neonatal levels 18 hr after birth (5 subjects) g) Neonatal levels 24 hr after birth (6 subjects) Maternal dose 100-150 mg IM about 3 hr before delivery, preceeded in 3 cases by 1 or 2 doses at 3 hr intervals. Pregnant women 55-91 kg (mean 72 kg) ADULTS; NEWBORN; BLOOD; ANALGESICS; DRUGS; PREGNANCY	Franklin, R.A. Frost, T. Robson, P.J. Jackson, M.B.A. 1981 British Journal of Clinical Pharmacology 12:88-90

Phenol, 4-(2-hydroxy-3-((1-methylethyl)amino)propoxy)-, (S)-
57526-81-5
C12-H19-N-O3
MW 225.3

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7318 Blood, plasma	Injection Ingestion	GC/MS	6	a) 180-1 nmol/l b) 17-1 umol/l c) 22-2 umol/l d) 60-3 nmol/l	a) Not given b) Not given c) Not given d) Not given	a) Initial and 8 hr measurement after 2.5 mg IV b) 0.5 and 4 hr after 2.5 mg, oral. Initial measurement 15 nmol/l at 15 min c) 0.5 and 8 hr after 5.0 mg oral. Initial measurement 18 nmol/l at 15 min d) 0.5 and 8 hr after 10 mg, oral. Initial measurement 58 nmol/l at 15 min Mean maximum level of metabolites was 273 nmol/l at 1-1.5 hr for 2.5 mg oral dose and 58 nmol/l at 3 hr for a 2.5 ug IV dose Range of means Healthy 22-25 yr olds Moderate increase in heart rate and systolic pressure. No effect on diastolic pressure. IV and maximum oral dose resulted in a feeling of tension and palpitations BLOOD PLASMA; AUTONOMIC DRUGS; DRUGS	Graffner, C. Hoffmann, K.-J. Johnsson, G. Lundborg, P. Ronn, O. 1981 European Journal of Clinical Pharmacology 20:91-97

Phenothiazine, 10-(2-(dimethylamino)propyl)- (8 CI)
10H-Phenothiazine-10-ethanamine, N,N,alpha-trimethyl- (9 CI)
60-87-7
C17-H20-N2-S
MW 284.4 MP 60 C, BP 190-192 C at 3 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7319 Blood, plasma	Ingestion Rectal	HPLC	6	a) Not given b) Not given c) Not given d) Not given	a) 39.2 +or- 8.2 ng/ml b) 11.2 +or- 2.6 ng/ml c) 10.2 +or- 2.4 ng/ml d) 7.5 +or- 2.7 ng/ml	a) 2.5 +or- 0.6 hr after 50 mg in solution, oral b) 2.7 +or- 0.6 hr after 25 mg in solution oral c) 3.4 +or- 0.7 hr after 25 mg in solution, rectal d) 5.2 +or- 0.9 hr after 25 mg in suppository, rectal Peak levels As hydrochloride Health volunteers, 21-27 yr old, 58-84 kg Severe local irritation with rectal dose of 50 mg ADULTS; BLOOD SERUM; ANESTHETICS; DRUGS; SEDATIVES; ANTIHISTAMINE; COMPARATIVE EVALUATION	Moolenaar, F. Ensing, J.G. Bolhuis, B.G. Visser, J. 1981 International Journal of Pharmaceutics 9:353-357

Phenothiazine, 10-(3-(4-methyl-1-piperazinyl)propyl)-2-(trifluoromethyl)- (8 CI)
10H-Phenothiazine, 10-(3-(4-methyl-1-piperazinyl)propyl)-2-(trifluoromethyl)-(9 CI)
117-89-5
C21-H24-F3-N3-S
MW 407.49, BP 202-210 C at 0.6 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7320 Blood, plasma		Radioreceptor assay	a) 1 b) 1 c) 1 d) 1	a) < 1.0 ng/ml b) 2.0-6.5 ng/ml c) 2.6-14.6 ng/ml d) 9.3-12.5 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 4 mg/day b) 15 mg/day c) 15 mg/day d) 30 mg/day Range of weekly means. Treated 3 wk. Absence of coffee and tea during wk 2 did not increase bioavailability. Mentally retarded patients with psychotic disturbances. NEW ZEALAND; ADULTS; BEHAVIOR DISORDERS; MENTAL RETARDATION; BLOOD PLASMA; PSYCHOTROPIC DRUGS; COMPARATIVE EVALUATIONS; DIETS; DRUGS; CAFFEINE	Bowen, S. Taylor, K.M. Gibb, I.A. McL. 1981 Lancet 1(8231):1217-1218
7321 Blood, plasma	Ingestion	GC	4	0.93-3.97 ng/ml	Not given	Range of peak values 3-6 hr after 20 mg as hydrochloride Psychiatric patients CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; DRUG THERAPY; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Gillespie, T.J. Sipes, I.G. 1981 Journal of Chromatography 223:95-102
7322 Blood, plasma		GC	a) 2 b) 7 c) 4 d) 3 e) 3 f) 2	a) 0.3-0.5 ng/ml b) 0.5-2.0 ng/ml c) 0.5-4.5 ng/ml d) 2.0-3.0 ng/ml e) 7.5-10.0 ng/ml f) 9.9-10 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 7 mg/day b) 10 mg/day c) 20 mg/day d) 25 mg/day e) 40 mg/day f) 60 mg/day Steady state levels, estimated from graph Schizophrenic patients undergoing therapy BLOOD PLASMA; DRUG THERAPY; DRUGS; TRANQUILIZERS; MEASUREMENT METHODS	Javaid, J.I. Dekirmenjian, H. Davis, J.M. 1982 Journal of Pharmaceutical Sciences 71(1):63-66

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
7323 Blood			1	a) Not applicable b) 0.0-0.1 mg%	a) 0.5 mg% b) Not given	a) XAD-2 resin extraction b) Solvent extraction, 2 methods Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162
7324 Blood		GC UV	1	a) Not applicable b) Not applicable	a) 0.8 mg/100g b) 1.9 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7325 Blood, plasma		Radioreceptor assay	a) 1 b) 1 c) 1 d) 1	a) 5.8-29.3 ng/ml b) 49.5-67.5 ng/ml c) 26.5-81.8 ng/ml d) 90.3-141.9 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 100 mg/day b) 200 mg/day c) 300 mg/day d) 600 mg/day Range of weekly means. Treated 3 wk. Absence of coffee and tea during wk 2 did not increase bioavailability. Mentally retarded patients with psychotic disturbances. NEW ZEALAND; ADULTS; BEHAVIOR DISORDERS; MENTAL RETARDATION; BLOOD PLASMA; PSYCHOTROPIC DRUGS; COMPARATIVE EVALUATIONS; DIETS; DRUGS; CAFFEINE	Bowen, S. Taylor, K.M. Gibb, I.A. McL. 1981 Lancet 1(8231):1217-1218
7326 Blood, plasma		HPLC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 27.6 +or- 6.4 ng/ml b) 51.3 +or- 21.2 ng/ml c) 19.0 +or- 4.4 ng/ml d) 64.7 +or- 19.9 ng/ml e) 15.3 +or- 4.9 ng/ml f) 85.2 +or- 18.0 ug/ml	a) Week 5, without propranolol, 7 cases b) Week 5, with propranolol, 7 cases c) Week 6, without propranolol, 6 cases d) Week 6, with propranolol, 6 cases e) Week 7, without propranolol, 6 cases f) Week 7, with propranolol, 6 cases Dose 2.5-13.8 mg/kg (mean 6.7 mg/kg)/day for 7 wk with or without 4.6-10.0 mg/kg/day propranolol. 31-56 yr old schizophrenics BLOOD PLASMA; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DRUG INTERACTION; DRUGS; TRANQUILIZERS; METABOLITES; BEHAVIOR DISORDERS	Peet, M. Middlemiss, D.N. Yates, R.A. 1980 Lancet 2(8201):978
7327 Blood, serum		RIA		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 87.9 +or- 26.8 ng Eq/ml b) 119.9 +or- 13.6 ng Eq/ml c) 91.0 +or- 15.5 ng Eq/ml d) 126.5 +or- 24.1 ng Eq/ml e) 77.0 +or- 18.0 ng Eq/ml f) 147.5 +or- 11.3 ng Eq/ml	a) Week 5, without propranolol, 7 cases b) Week 5, with propranolol, 7 cases c) Week 6, without propranolol, 6 cases d) Week 6, with propranolol, 6 cases e) Week 7, without propranolol, 6 cases f) Week 7, with propranolol, 6 cases Dose 2.5-13.8 mg/kg (mean 6.7 mg/kg)/day for 7 wk with or without 4.6-10.0 mg/kg/day propranolol. 31-56 yr old schizophrenics BLOOD PLASMA; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DRUG INTERACTION; DRUGS; TRANQUILIZERS; METABOLITES; BEHAVIOR DISORDERS	Peet, M. Middlemiss, D.N. Yates, R.A. 1980 Lancet 2(8201):978
7328 Brain			2	a) 0.7-1.5 mg% b) 0.1-1.9 mg%	a) Not given b) Not given	a) XAD-2 resin extraction b) Solvent extraction, 2 methods Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7329 Brain		GC UV	1	a) Not applicable b) Not applicable	a) 2.3 mg/100g b) 5.7 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7330 Kidney			2	a) 0.5-5.3 mg% b) 0.2-3.7 mg%	a) Not given b) Not given	a) XAD-2 resin extraction b) Solvent extraction, 2 methods Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162
7331 Liver			2	a) 1.1-11.8 mg% b) 0.8-11.3 mg%	a) Not given b) Not given	a) XAD-2 resin extraction b) Solvent extraction, 2 methods Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162
7332 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 11.6 mg/100g b) 23.1 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

Phosphonic acid, (1,2-epoxypropyl)-, (1R,2S)-(-)- (8 CI)
Phosphonic acid, (3-methyloxiranyl)-, (2R-cis)- (9 CI)
23155-02-4
C3-H7-O4-P
MW 138.1, MP approx 94 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7333 Blood, serum	Injection Ingestion	Microbiological	7	a) 132-4.5 ug/ml b) 259-6.8 ug/ml c) 0.2-7.1 ug/ml d) 0.3-9.4 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) Initial level and 8 hr after 20 mg/kg IV b) Initial level and 8 hr after 40 mg/kg IV c) 0.25 and 2 hr after 20 mg/kg oral. Final measurement 0.7 ug/ml at 24 hr d) 0.25 and 4 hr after 40 mg/kg oral. Final measurement 1.3 ug/ml at 24 hr Range of means, estimated from graph Healthy 25-56 yr olds BLOOD SERUM; URINE; ANTIBIOTICS; DRUGS	Goto, M. Sugiyama, M. Nakajima, S. Yamashina, H. 1981 Antimicrobial Agents and Chemotherapy 20(3):393-397

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Phosphonic acid, (1,2-epoxypropyl)-, (1R,2S)-(-)- (8 CI)
Phosphonic acid, (3-methyloxiranyl)-, (2R-cis)- (9 CI)
23155-02-4
C3-H7-O4-P
MW 138.1, MP approx 94 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7334 Urine	Injection Ingestion	Microbiological	7	a) 78-83% of dose b) 18-21% of dose	a) Not given b) Not given	a) 24 hr output after 20 or 40 mg/kg IV dose b) 24 hr output after 20 or 40 mg/kg oral dose Range of means, estimated from graph Healthy 25-56 yr olds BLOOD SERUM; URINE; ANTIBIOTICS; DRUGS	Goto, M. Sugiyama, M. Nakajima, S. Yamashina, H. 1981 Antimicrobial Agents and Chemotherapy 20(3):393-397

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
7335 Blood, serum		Chem	100	a) Not given b) Not given c) Not given d) Not given	a) 3.76 +or- 0.65 mg/100 ml b) 3.73 +or- 0.80 mg/100 ml c) 3.85 +or- 0.72 mg/100 ml d) 3.59 +or- 0.85 mg/100 ml	a) 75 women lactating 2 mo or more b) 25 women from a) c) Women in b), 1 mo. after supplementation with 500 mg Ca and 1,600 IU (40 ug) vitamin D daily d) 25 nonlactating controls, no supplement 22-34 yr olds, North India Serum chemistry suggested osteomalacia, but radiographs of pelvis and dorsolumbar spine showed no abnormalities. OSTEOMALACIA; DIETS; LACTATION; PREGNANCY; CALCIUM; PHOSPHORUS; INDIA; BONE DISEASES; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS; BLOOD SERUM	Marya, R.K. Rathee, S. Arora, S.R. 1981 Annals of Nutritional Metabolism 25:56-64
7336 Blood, serum	Injection		1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 6.2 mg/100 ml b) 21.4 mg/100 ml c) 8.1 mg/100 ml d) 5.6 mg/100 ml e) 3.9 mg/100 ml f) 4.5 mg/100 ml	a) 13 mo before admission b) At admission, 12 hr after Fleet enema (238 mEq phosphate) c) Day 2, after 180 mg Ca gluconate, 81 mg Ca chloride, 40 mEq NaHCO3, all IV d) Day 3, additional 90 mg Ca and 40 mEq NaHCO3 e) Day 4 f) Day 7 4.5 yr old with chronic renal failure Carpopedal spasm, hyperventilation, diarrhea, tachycardia CHILDREN; KIDNEY DISEASES; BLOOD SERUM; CALCIUM; PHOSPHORUS	Oxnard, S.C. O'Bell, J. Grupe, W.E. 1974 Pediatrics 53(1):105-106

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7337 Blood, serum			a) 10 b) 20 c) 20	a) 4.2-5.7 mg/100 ml b) 4.2-5.1 mg/100 ml c) 4.3-5.0 mg/100 ml	a) 4.7 mg/100 ml b) 4.6 mg/100 ml c) 4.7 mg/100 ml	a) Controls, non-nutrient supplement plus lactose-containing placebo b) High protein-vitamin liquid supplement plus mineral capsule 6 days/wk c) Supplement and mineral capsule as in b) plus 40 mg Zn as carbonate, 6 days/wk Range of means over 20 months No supplements during 4 mo summer vacation Significantly increased ht, wt, and bone ages in boys receiving Zn during final 12 mo of supplementation, despite subnormal Zn levels in plasma throughout study P levels in low normal range during study 13 yr old prepubertal village schoolboys, southern Iran IRAN; ADOLESCENTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; CALCIUM; IRON; PHOSPHORUS; ZINC; DIETS	Konaghy, H.A. Reinhold, J.G. Mahloudji, M. Ghavami, P. Spivey Fox, M.R. Halsted, J.A. 1974 American Journal of Clinical Nutrition 27(2):112-121
7338 Urine	Ingestion	Colorimetry	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	a) 535 +or- 30 mg/day b) 931 +or- 61 mg/day c) 414 +or- 20 mg/day d) 757 +or- 48 mg/day e) 545 +or- 27 mg/day f) 896 +or- 62 mg/day g) 435 +or- 58 mg/day h) 795 +or- 79 mg/day	a) 889 mg/day b) 1343 mg/day c) 928 mg/day d) 1557 mg/day e) 895 mg/day f) 1345 mg/day g) 920 mg/day h) 1473 mg/day Metabolic research ward patients ILLINOIS; URINE; CALCIUM; FLUORIDE; PHOSPHORUS; METABOLISM	Spencer, H. Osis, D. Kramer, L. Wiatrowski, E. Norris, C. 1975 Journal of Nutrition 105:733-740

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
7339 Blood, plasma	Injection Ingestion	HPLC	8	a) 23-48 ng/ml b) 3.3-13.0 ng/ml c) 1.3-6.8 ng/ml d) 4.9-11.4 ng/ml e) 7.9-18.6 ng/ml f) 11.3-33.0 ng/ml g) 13.3-21.3 ng/ml h) Not applicable	a) Not given b) 6.7 +or- 2.9 ng/ml c) 3.3 +or- 1.8 ng/ml d) 7.6 +or- 2.3 ng/ml e) 12.8 +or- 4.0 ng/ml f) 20.5 +or- 8.1 ng/ml g) 16.5 +or- 4.2 ng/ml h) 30.0 ng/ml	a) Peaks, after 0.5 mg, IV, 4 patients. b) Peaks, 3-120 min after 0.5 mg, oral, 8 patients c) Steady-state level after 0.5 mg, oral, 3x/d for 2 wk, 8 patients d) Steady-state level after 1 mg, oral, 3x/d for 2 wk, 8 patients e) Steady-state level after 2 mg, oral, 3x/d for 2 wk, 7 patients f) Steady-state level after 3 mg, oral, 3x/d for 2 wk, 5 patients g) Steady-state level after 4 mg, oral, 3x/d for 2 wk, 3 patients h) Steady-state level after 5 mg, oral, 3x/d for 2 wk, 1 patient a) Estimated from graph Untreated hypertensives, wt 70-110 kg (mean 82.8 kg) ADULTS; HYPERTENSION; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; DRUGS	Grahnen, A. Seideman, P. Lindstrom, B. Haglund, K. von Bahr, C. 1981 Clinical Pharmacology and Therapeutics 30(4):439-446
7340 Blood, plasma		CC Fluorometry	8	a) Not given b) Not given c) Not given d) Not given	a) 6.2 +or- 0.9 ng/ml b) 9.4 +or- 2.5 ng/ml c) 20.3 +or- 3.1 ng/ml d) 37.1 +or- 6.9 ng/ml S.E.	a) Dose 0.5 mg. AUC, 38 +or- 8 ng/ml/hr, 8 subjects b) Dose 1 mg. AUC, 64 +or- 16 ng/ml/hr, 8 subjects c) Dose 2 mg. AUC, 169 +or- 30 ng/ml/hr, 5 subjects d) Dose 4 mg. AUC, 254 +or- 48 ng/ml/hr, 5 subjects Mean peak levels 2 hr after dose Reduced clearance in patients with heart failure 44-67 yr old chronic heart failure patients Postural hypotension at doses of >1 mg, 3 patients ADULTS; HEART DISEASES; BLOOD PLASMA; DRUG THERAPY; DRUGS	Silke, B. Lakhani, Z.M. Taylor, S.H. 1981 Journal of Cardiovascular Pharmacology 3:329-335

Piperidine, 1-(1-phenylcyclohexyl)-
77-10-1
C17-H25-N
MW 243.38, MP 46 C, BP 135-137 C at 1 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7341 Blood	Inhalation	RIA	200	a) 0.2-82 ng/ml b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 9.0 ng/ml b) 82 ng/ml c) 16 ng/ml d) 7.6 ng/ml e) 5 ng/ml f) 0 ng/ml	a) 200 patients (mostly teenagers) with mild to severe psychotic symptoms with or without acute schizophrenia b) 36 yr old male, comatose, salivating, bizarre movements. Level 43 hr later, 66 ng/ml and 5 d later, 5.8 ng/ml c) 15 yr old male, highly aggressive, used phencyclidine for 2 yr d) 16 yr old male, violent, unconscious, slept 2 days e) 16 yr old male, unmanageable, dangerous to family f) 15 yr old male, disorderly and silly behavior, level in urine, 18 ng/ml Symptoms of intoxication include violent, agressive behavior with delusions, hallucinations, agitation. ADOLESCENTS; BLOOD; URINE; DRUG ABUSE; DRUGS	Kaul, B. Davidow, B. 1980 Journal of Clinical Pharmacology 20(89):500-505
7342 Blood		GC	14	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) 27.98 ng/ml b) 3.91 ng/ml c) 70.31 ng/ml d) 0.084 ng/ml e) None detected	a) 38 yr old white male who handled PCP daily b) 2 wk after sample a), continued to handle PCP c) 36 yr old white male, no contact with PCP for 6 mo d) 2 wk after sample c) e) 12 controls Law enforcement personnel and upper middle class patients at private hospital (controls), CA, 1980 CALIFORNIA; ADULTS; BLOOD; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FUMES; OCCUPATIONAL HAZARDS	Pitts, F.N. Allen, R.E. Aniline, O. Yago, L.S. 1981 Clinical Toxicology 18(9):1015-1020
7343 Blood, plasma	Ingestion	GC/MS	1	91-40 ng/ml	Not given	8 and 9 days after 500 mg overdose. 58 ng/ml on day 7 and 75 ng/ml on day 10. 18 yr old Coma for one week BLOOD PLASMA; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS	Domino, E.F. Wilson, A.E. 1977 Clinical Pharmacology and Therapeutics 22(4):421-424
7344 Hair	Inhalation	RIA	8	0.3-2.8 ng/mg	Not given	Correlation between extent of drug abuse and levels in hair Drug abusers HAIR; DRUG ABUSE; DRUGS; MEASUREMENT METHODS; PSYCHOTROPIC DRUGS	Baumgartner, A.M. Jones, P.F. Black, C.T. 1981 Journal of Forensic Sciences 26(3):576-581

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Piperidine, 1-(1-phenylcyclohexyl)-
77-10-1
C17-H25-N
MW 243.38, MP 46 C, BP 135-137 C at 1 mm Hg

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7345 Urine	Ingestion	GC/MS	1	1680-90 ng/ml	Not applicable	Range for varying urinary pH values (4.8-7.4). Levels decreased with increasing pH. Data for 3.5 day period starting 6 days after 500 mg overdose. Total amount excreted 11.04 mg (metabolites not measured). 18 yr old Coma for one week BLOOD PLASMA; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS	Domino, E.F. Wilson, A.E. 1977 Clinical Pharmacology and Therapeutics 22(4):421-424
7346 Urine	Inhalation	RIA	200	a) 0.1-100 ng/ml b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable	a) 13.5 ng/ml b) 100 ng/ml c) 100 ng/ml d) 76 ng/ml e) 18 ng/ml f) 16 ng/ml	a) 200 pateints (mostly teenagers) with mild to severe psychotic symptoms with or without acute schizophrenia b) 36 yr old male, comatose, salivating, bizarre movements. Level 43 hr later, 70 ng/ml c) 16 yr old male, unmanageable, dangerous to family. Level on day 10, 35 ng/ml and day 13, 25 ng/ml d) 15 yr old male, acute psychosis, delusionary, used LSD, phencyclidine, and marijuana e) 15 yr old male, disorderly and silly behavior, serum negative for phencyclidine f) 15 yr old female, strange behavior, hyperactive, talkative, pressured speech, serum negative for phencyclidine Symptoms of intoxication include violent, agressive behavior with delusions, hallucinations, agitation. ADOLESCENTS; BLOOD; URINE; DRUG ABUSE; DRUGS	Kaul, B. Davidow, B. 1980 Journal of Clinical Pharmacology 20(89):500-505
7347 Urine	Ingestion Inhalation	GC		0.1-34 ug/ml	0.5 ug/ml	24 of 26 samples positive. Exposure to unknown amount by accidental ingestion or inhalation of smoke in ambient air No correlation between level and severity or duration of symptoms. Children, age 4-52 mo (mean 16 mo) with diagnosis of phencyclidine intoxication, CA Dull, trance-like stare, agitation alternating with lethargy, horizontal or vertical nystagmus or truncal ataxia. Additionally, some miosis, hypersalivation, choreoathetoid movements, diminished response to pain, seizures, signs of respiratory depression. Symptoms lasted 1-100 hr (mild cases) and 16-200 hr (severe cases). CALIFORNIA; CHILDREN; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; INHALATION	Karp, H.N. Kaufman, N.D. Anand, S.K. 1980 Journal of Pediatrics 97(6):1006-1009

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Piperidine, 1-(1-phenylcyclohexyl)-
77-10-1
C17-H25-N
MW 243.38, MP 46 C, BP 135-137 C at 1 mm Hg

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7348 Urine		GC	a) 1 b) 1	a) Not applicable b) Not applicable	a) 15.95 ng/ml b) None detected	a) Handled PCP regularly, sample pH 5.8 b) No contact with PCP for 6 mo, sample pH 6.3 38 and 36 yr old law enforcement officers, CA CALIFORNIA; ADULTS; BLOOD; URINE; DRUG ABUSE; DRUGS; PSYCHOTROPIC DRUGS; FUMES; OCCUPATIONAL HAZARDS	Pitts, F.N. Allen, R.E. Aniline, O. Yago, L.S. 1981 Clinical Toxicology 18(9):1015-1020

Piperidinium, 1,1'-(3alpha,17beta-dihydroxy-5alpha-androstan-2beta,16beta-ylene)bis(1-methyl-, dibromide, diacetate (8 CI)
Piperidinium, 1,1'-((2beta,3alpha,5alpha,16beta,17beta)-3,17-bis(acetyloxy)androstane-2,16-diyl)bis(1-methyl-, dibromide (9 CI)
15500-66-0
C35-H60-N2-O4.2Br
MW 732.70, MP 215 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7349 Blood	Injection	Fluorometry	1	Not applicable	1.6 mg/l	Estimated dose 10 mg, or 0.14 mg/kg. Validity of levels questionable to instability of pancuronium during storage Autopsy, 30 yr old, wt 73 kg. ADULTS; SUICIDE; DRUGS; MUSCLE RELAXANTS; FORENSIC MEDICINE	Poklis, A. Melanson, E.G. 1980 Journal of Analytical Toxicology 4:275-280

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
7350 Blood, serum	Ingestion		1	Not applicable	14 mEq/l	Accidental ingestion of 8 Slow-K tablets Postmortem, 15 mo old Vomiting, unconsciousness, cyanosis, shallow respiration, quiet heart sounds, peripheral circulatory failure. Electrocardiogram showed atrial activity stopped, irregular ventricular rhythm with grossly elongated complexes. AUTOPSIES; CHILDREN; BLOOD SERUM; DRUGS; POTASSIUM	Bacon, C. 1979 British Medical Journal 1(5904):389-390

Pregna-1,4-diene-3,11,20-trione, 17,21-dihydroxy-
53-03-2
C21-H26-O5
MW 358.44, MP 235 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7351 Blood, serum	Ingestion	RIA	16	a) 125.4-321.4 ng/ml x hr b) 115.4-271.7 ng/ml x hr c) 154.0-297.9 ng/ml x hr d) 137.1-285.9 ng/ml x hr	a) 196.9 ng/ml x hr b) 194.1 ng/ml x hr c) 217.2 ng/ml x hr d) 213.3 ng/ml x hr	a) 5 mg prednisone (Deltasone, Upjohn) b) 5 mg prednisolone c) 5 mg prednisolone d) 5 mg prednisolone b),c), & d) from different lots of tablets (Delta-Cortef, Upjohn) AUC data 0-12 hr after treatment Healthy 18-55 yr olds, wt 52.2-83.9 kg BLOOD SERUM; ANTI-INFLAMMATORY AGENTS; DRUG INTERACTION; DRUGS; COMPARATIVE EVALUATIONS; METABOLITES	Wagner, J.G. DiSanto, A.R. Gillespie, W.R. Albert, K.S. 1981 Research Communications in Chemical Pathology and Pharmacology 32(3):387-405

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
7352 Blood, serum	Ingestion	RIA	16	a) 389.3-1491 ug/ml x hr b) 413.5-1265 ug/ml x hr c) 364.5-1530 ug/ml x hr	a) 785.1 ug/ml x hr b) 738.8 ug/ml x hr c) 775.8 ug/ml x hr	a) 5 mg prednisolone b) 5 mg prednisolone c) 5 mg prednisolone a),b), and c) from different lots of tablets (Delta-cortef, Upjohn) AUC data, 0-12 hr after treatment Healthy 18-55 yr olds, wt 52.2-83.9 kg BLOOD SERUM; ANTI-INFLAMMATORY AGENTS; DRUG INTERACTION; DRUGS; COMPARATIVE EVALUATIONS; METABOLITES	Wagner, J.G. DiSanto, A.R. Gillespie, W.R. Albert, K.S. 1981 Research Communications in Chemical Pathology and Pharmacology 32(3):387-405

Pregna-1,4-diene-3,20-dione, 9-fluoro-11beta,17,21-trihydroxy-16beta-methyl- (8CI)
Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17,21-trihydroxy-16-methyl-, (11beta,16beta)- (9 CI)
378-44-9
C22-H29-F-O5
MW 392.45, MP 231-234 (dec)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7353 Blood, fetal	Injection	RIA	a) 14 b) 9 c) 18 d) 17	a) Not given b) Not given c) Not given d) Not given	a) 8.6 +or- 0.9 ug cortisol Eq/dl b) 9.8 +or- 2.6 ug cortisol Eq/dl c) 6.8 +or- 1.0 ug cortisol Eq/dl d) 6.1 +or- 0.9 ug cortisol Eq/dl	a) Males. Mother received one or more 12 mg doses (as acetate and phosphate)/ 12-24 hr. Delivery <24 hr after 1st dose b) Females. Same as in a) c) Males. Mother received 4 doses of 6 mg/12 hr. Delivery <60 hr after first dose d) Females. Same as in c) No significant differences Premature infants, 751-1750 gm, CA Incidence of respiratory distress syndrome higher in males. No sex difference in suppression of serum cortisol, dehydroepiandrosterone sulfate, and growth hormone CALIFORNIA; FETUS; NEWBORN; BLOOD; DRUG THERAPY; DRUGS	Ballard, P.L. Ballard, R.A. Granberg, J.P. Sniderman, S. Gluckman, P.D. Kaplan, S.L. Grumbach, M.M. 1980 Journal of Pediatrics 97(3):451-454

Prizidilol (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7354 Blood, plasma	Ingestion	HPLC	6	a) 0.09-0.21 ug/ml b) 0.33-1.33 ug/ml	a) Not applicable b) Not applicable	a) 1 and 4 hr after 6 mg/kg. Rapid acetylator phenotype (3 subjects) b) 1 and 3 hr after 6 mg/kg. 1.09 ug/ml at 4 hr. Slow acetylator phenotype (3 subjects) Significantly higher in b) Range of means 24-66 yr old hypertensive patients Systolic blood pressure decreased after 3.0-6.0 mg/kg, diastolic decreased after 4.5-6.0 mg/kg ADULTS; HYPERTENSION; BLOOD PLASMA; ANTIHYPERTENSIVE AGENTS; DRUG THERAPY; DRUGS; BLOOD PRESSURE	Larsson, R. Karlberg, B.E. Norlander, B. Wirsen, A. 1981 Clinical Pharmacology and Therapeutics 29(5):588-593

Propanamide, N-(1-(2-(4-ethyl-4,5-dihydro-5-oxo-1H-tetrazol-1-yl)ethyl)-4-(methoxymethyl)-4-p iperidinyl)-N-phenyl-
71195-58-9
C21-H32-N6-O3
MW 416.59

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7355 Blood, plasma	Injection	GC	1	2230-7.6 ng/ml	Not given	0-6 hr after 0.125 mg/kg body wt, IV Estimated from graph BLOOD PLASMA; ANALGESICS; DRUGS; NARCOTICS; MEASUREMENT METHODS; BELGIUM	Woestenborghs, R. Michielsen, L. Heykants, J. 1981b Journal of Chromatography 224:122-127

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
7356 Blood, plasma	Injection	Radiometry	7	a) 16-2.5 ng/ml b) 13-0.35 ng/ml c) 3-1.3 ng/ml	a) Not given b) Not given c) Not given	a) Total radioactivity b) Radioactive fentanyl c) Radioactive metabolites Initial measurements and 8 hr after 6.4 ug/kg Range of means, estimated from graph Healthy 22-29 yr olds BLOOD PLASMA; URINE; ANALGESICS; DRUGS; NARCOTICS	McClain, D.A. Hug, C.C. 1980 Clinical Pharmacology and Therapeutics 28(1):106-114
7357 Urine	Injection	Radiometry	5	a) Not given b) Not given	a) 76% of dose b) 8% of dose	a) Total radioactivity b) Radioactive fentanyl Cumulative 72 hr output after 6.4 ug/kg Healthy 22-29 yr olds BLOOD PLASMA; URINE; ANALGESICS; DRUGS; NARCOTICS	McClain, D.A. Hug, C.C. 1980 Clinical Pharmacology and Therapeutics 28(1):106-114

Pyridine, 2-(p-chloro-alpha-(2-(dimethylamino)ethyl)benzyl)- (8 CI)
2-Pyridinepropanamine, gamma-(4-chlorophenyl)-N,N-dimethyl- (9 CI)
132-22-9
C16-H19-Cl-N2
MW 274.80, MP 130-135 C (Allergisan), BP 142 C at 1.0 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7358 Bile		GC	1	Not applicable	1.5 mg/l	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943
7359 Blood		GC	1	Not applicable	1.1 mg/l	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943

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Pyridine, 2-(p-chloro-alpha-(2-(dimethylamino)ethyl)benzyl)- (8 CI)
2-Pyridinepropanamine, gamma-(4-chlorophenyl)-N,N-dimethyl- (9 CI)
132-22-9
C16-H19-Cl-N2
MW 274.80, MP 130-135 C (Allergisan), BP 142 C at 1.0 mm Hg

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7360 Blood, serum	Injection	GC/MS	1	48-4.2 ng/ml	Not given	0.25 and 24 hr after 0.10 mg/kg Pharmacokinetic data for 6 other children also given Estimated from graph 14 yr old, wt 57 kg, with chronic rhinitis CHILDREN; BLOOD SERUM; AUTONOMIC DRUGS; DRUGS; ANTIHISTAMINE	Thompson, J.A. Bloedow, D.C. Leffert, F.H. 1981 Journal of Pharmaceutical Sciences 70(11):1284-1286
7361 Brain		GC	1	Not applicable	2.5 mg/kg	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943
7362 Kidney		GC	1	Not applicable	1.4 mg/kg	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943
7363 Liver		GC	1	Not applicable	6.6 mg/kg	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943
7364 Lung		GC	1	Not applicable	5.2 mg/kg	Fatal ethanol and chlorpheniramine overdose Autopsy of Caucasian found on roadside, age early 20's, wt 150 lb, CA Pulmonary edema, congestion of liver, spleen, kidneys CALIFORNIA; AUTOPSIES; BILE; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Reed, D. 1981 Clinical Toxicology 18(8):941-943

Pyridoxal, 5-(dihydrogen phosphate (8 CI)
4-Pyridinecarboxaldehyde, 3-hydroxy-2-methyl-5-((phosphonooxy)methyl) (9 CI)
54-47-7
C8-H10-N-O6-P
MW 247.15, MP 140-143 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7365 Blood, plasma			a) 4 b) 9 c) 10 d) 9 e) 10 f) 1	a) Not given b) 2.8-9.2 ng/ml c) 1.6-9.8 ng/ml d) 23.0->58.6 ng/ml e) 3.2->40.4 ng/ml f) Not given g) Not given	a) 16.9 ng/ml b) 4.3 ng/ml c) 3.3 ng/ml d) 28.4 +or- 9.8 ng/ml e) 12.2 +or- 4.5 mg/ml f) 10.6 ng/ml g) > 60 ng/ml	a) Nonpregnant women, 20-34 yr old b) Normal pregnant women, prior to delivery c) Pre-eclamptic women, prior to delivery d) Infants from normal pregnancy, cord blood e) Infants from pre-eclamptic mothers, cord blood f) Normal pregnant woman supplemented with pyridoxine, 5 mg/day, 63 days latter half of pregnancy g) Cord, woman in f) Obstetrical patients, Texas TEXAS; ADULTS; NEWBORN; HYPERTENSION; MENTAL RETARDATION; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; VITAMINS; BLOOD PRESSURE; PREGNANCY	Brophy, M.H. Siiteri, P. 1975 American Journal of Obstetrics and Gynecology 121(8):1075-1079

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
7366 Blood, serum	Ingestion	HPLC	1	0.85-0.35 mg/l	Not given	3 and 8 hr after 200 mg as sulfate, 0.38 mg/l at 1 hr Estimated from graph HEART DISEASES; BLOOD SERUM; ANTIARRHYTHMIC AGENTS; DRUG THERAPY; DRUGS; MEASUREMENT METHODS	Crouthamel, W.G. Kowarski, B. Narang, P.K. 1977 Clinical Chemistry 23(11):2030-2033

Quinine (8 CI)
Cinchonan-9-ol, 6'-methoxy-, (8alpha,9R)- (9 CI)
130-95-0
C20-H24-N2-O2
MW 324.46

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7367 Blood		UV	a) 74 b) 112	a) 0.4-9.9 ug/dl b) 0.5-11 ug/dl	a) Not given b) Not given	a) Deaths involving morphine and quinine b) Deaths involving morphine, ethanol, and quinine Wayne County, MI MICHIGAN; AUTOPSIES; DRUG ABUSE; DRUGS; NARCOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Monforte, J.R. 1977 Journal of Forensic Sciences 22(4):718-724

Quinoline, 7-chloro-4-((4-(diethylamino)-1-methylbutyl)amino)- (8 CI)
1,4-Pentanediamine, N(4)-(7-chloro-4-quinolinyl)-N(1),N(1)-diethyl- (9 CI)
54-05-7
C18-H26-Cl-N3
MW 319.89, MP 87 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7368 Blood		GC	1	Not applicable	33 ug/ml	Suicide victim, dose unknown 15 yr old Laotian, resident of San Jose, CA Cerebral edema with anoxic cortical reaction, pulmonary congestion and edema, hemorrhagic gastritis CALIFORNIA; AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; LUNGS; URINE; ANTI-INFLAMMATORY AGENTS; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Weingarten, H.L. Cherry, E.J. 1981 Clinical Toxicology 18(8):959-963
7369 Kidney		GC	1	Not applicable	110 ug/g	Suicide victim, dose unknown 15 yr old Laotian, resident of San Jose, CA Cerebral edema with anoxic cortical reaction, pulmonary congestion and edema, emorrhagic gastritis CALIFORNIA; AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; LUNGS; URINE; ANTI-INFLAMMATORY AGENTS; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Weingarten, H.L. Cherry, E.J. 1981 Clinical Toxicology 18(8):959-963
7370 Liver		GC	1	Not applicable	169 ug/g	Suicide victim, dose unknown 15 yr old Laotian, resident of San Jose, CA Cerebral edema with anoxic cortical reaction, pulmonary congestion and edema, hemorrhagic gastritis CALIFORNIA; AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; LUNGS; URINE; ANTI-INFLAMMATORY AGENTS; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Weingarten, H.L. Cherry, E.J. 1981 Clinical Toxicology 18(8):959-963
7371 Lung		GC	1	Not applicable	73 ug/g	Suicide victim, dose unknown 15 yr old Laotian, resident of San Jose, CA Cerebral edema with anoxic cortical reaction, pulmonary congestion and edema, and hemorrhagic gastritis CALIFORNIA; AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; LUNGS; URINE; ANTI-INFLAMMATORY AGENTS; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Weingarten, H.L. Cherry, E.J. 1981 Clinical Toxicology 18(8):959-963

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Quinoline, 7-chloro-4-((4-(diethylamino)-1-methylbutyl)amino)- (8 CI)
1,4-Pentanediamine, N(4)-(7-chloro-4-quinolinyl)-N(1),N(1)-diethyl- (9 CI)
54-05-7
C18-H26-Cl-N3
MW 319.89, MP 87 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7372 Urine		GC	1	Not applicable	367 ug/ml	Suicide victim, dose unknown 15 yr old Laotian, resident of San Jose, CA Cerebral edema with anoxic cortical reaction, pulmonary congestion and edema, and hemorrhagic gastritis CALIFORNIA; AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; LUNGS; URINE; ANTI-INFLAMMATORY AGENTS; ANTIARRHYTHMIC AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Weingarten, H.L. Cherry, E.J. 1981 Clinical Toxicology 18(8):959-963

Resorcinol (8 CI)
1,3-Benzenediol (9 CI)
108-46-3
C6-H6-O2
MW 110.11, MP 109-111 C, BP 280 C (also reported as 276.5 C), VP 1 mm Hg at 108.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7373 Urine	Dermal	HPLC	a) 3 b) 1	a) 3.75-22.98 mg b) 0 mg	a) 13.13 mg b) 0 mg	a) 24 hr sample after 2 weeks of 800 mg/day, topical application b) Untreated control SKIN DISEASES; BLOOD PLASMA; URINE; DRUGS; MEASUREMENT METHODS	Yeung, D. Nacht, S. Gans, E.H. 1981 Journal of Chromatography 224:513-518

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
7374 Blood, plasma	Ingestion		a) 1 b) 1	a) 35-2.5 ug/ml b) 45-1.0 ug/ml	a) Not applicable b) Not applicable	a) 1 and 12 hr. Initial measurement 29 ug/ml at 0.5 hr b) 1 and 12 hr Estimated from graph Dose 454 mg, plus 324 mg phenacetin, 64 mg caffeine, and 60 mg codeine phosphate 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

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Salicylic acid (8 CI)
Benzoic acid, 2-hydroxy- (9 CI)
69-72-7
C7-H6-03
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
7375 Blood, serum	Dermal	HPLC	1	670-84 mg/l	Not applicable	Day 1 and 3 after 150 g/day for 4 days as a 10% ointment. Detoxification began on day 2. 7 yr old with congenital ichthyosis, The Netherlands Hyperventilation, hyperpyrexia and coma. Brain edema, coagulopathy and metabolic acidosis. During the weeks following treatment, patient was hypertonic, opisthotonic and exhibited extension spasms. EEG abnormalities and paroxysmal brain stem disorders. CASE HISTORIES; CHILDREN; BLOOD SERUM; ANALGESICS; ANTI-INFLAMMATORY AGENTS; DRUGS; NETHERLANDS	Uges, D.R.A. Bloemhof, H. Christensen, E.K.J. 1981 Pharmaceutisch Weekblad Scientific Edition 3:205-211
7376 Milk	Ingestion		a) 1 b) 1	a) 0.27-1.0 ug/ml b) 1.5-0.2 ug/ml	a) Not applicable b) Not applicable	a) 0.5 and 2 hr after 454 mg. Final measurement 0.8 ug/ml at 12 hr b) 1.5 and 24 hr after 454 mg. Initial measurement 0.9 ug/ml at 0.5 hr Estimated from graph Dose included 324 mg phenacetin, 64 mg caffeine and 60 mg codeine phosphate 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, M.F. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

Salicylic acid acetate (8 CI)
Benzoic acid, 2-(acetyloxy)- (9 CI)
50-78-2
C9-H8-04
MW 180.2, MP 135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7377 Blood, serum		HPLC	63	a) 20-308 mg/l b) 0.3-12.1 mg/l c) Not given d) Not given e) Not given f) Not given g) Not given	a) Not given b) 3.8 mg/l c) 5.8 mg/l d) 4.3 mg/l f) 5.3 mg/l g) 9.5 mg/l	a) Salicylic acid, 62 patients d) Salicyluric acid, 63 patients c) Salicyluric acid, 7 patients in b) <30 yr old d) Salicyluric acid, 5 patients in b) 30-39 yr old e) Salicyluric acid, 9 patients in b) 40-49 yr old f) Salicyluric acid, 12 patients in b) 50-59 yr old g) Salicyluric acid, 10 patients in b) >60 yr old Metabolites of salicylic acid acetate c)-g) patients with salicylic acid levels >100 mg/l, estimated from graph Patients on chronic acetylsalicylic acid therapy ADULTS; RHEUMATOID ARTHRITIS; BLOOD SERUM; ANALGESICS; ANTIPYRETICS; DRUG THERAPY; DRUGS; METABOLITES	Montgomery, P.R. Sitar, D.S. 1981 Gerontology 27:329-333

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
7378 Blood, serum	Ingestion		1	59-12 mg/dl	Not given	Initial measurement and 2 days after treatment. Accidental overdose. 52 yr old Mental agitation and confusion, labored respiration, bilateral rales with expiratory wheezes in lower parts of lungs. Deep tendon hyperrefleria, minimal acrocyanosis, tachycardia. Pulmonary edema. CASE HISTORIES; BLOOD SERUM; ANALGESICS; DRUG ABUSE; DRUGS	Liebman, R.M. Katz, H.M. 1981 Journal of the American Medical Association 246(19):2227-2228
7379 Blood, serum	Ingestion		20	a) Not given b) Not given c) Not given	a) 143.1 ug/ml b) 131.9 ug/ml c) 138.9 ug/ml	a) Plain aspirin b) Buffered aspirin c) Enteric-coated aspirin Dose 3.9 g/day for 7 days Healthy 21-45 yr olds Submucosal hemorrhages after plain or buffered aspirin BLOOD SERUM; ANALGESICS; DRUG THERAPY; DRUGS	Lanza, F.L. Royer, G.L., Jr. Nelson, R.S. 1980 New England Journal of Medicine 303(3):136-138
7380 Milk	Ingestion	HPLC	6	a) 0.42-0.78 mg% b) 1.20-2.11 mg% c) 1.80-4.81 mg%	a) 0.58 mg% b) 1.60 mg% c) 3.87 mg%	a) 2-4 hr after 500 mg b) 2-6 hr after 1000 mg c) 2-4 hr after 1500 mg Administered as 500 mg acetysalicylic acid tablets 1 hr after breakfast Peak levels Healthy nursing mothers, 24-32 yr old (mean 29 yr), 46-65 kg (mean 58 kg), 2-8 mo post-partum (mean 5 mo) ADULTS; MILK; ANALGESICS; ANTIPYRETICS; DRUGS; LACTATION; METABOLITES	Jamali, F. Keshavarz, E. 1981 International Journal of Pharmaceutics 8:285-290

Sulfuric acid disodium salt
7757-82-6
H2-O4-S.2Na
MW 142.06, MP approximately 800 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7381 Urine	Ingestion	Colorimetry	5	a) 13.0-25.0 mmoles/24 hr b) 17.3-55.2 mmoles c) 38.8-71.5 mmoles d) 27.9-59.8 mmoles e) 50.8-69.3 mmoles	a) Not given b) 36.4 +or- 15.4 mmoles c) 53.4 +or- 15.8 mmoles d) 43.5 +or- 12.0 mmoles e) 61.8 +or- 7.8 mmoles	a) Baseline b) 24 hr output after 18.1 g as decahydrate b) 72 hr cumulative output after 18.1 g as decahydrate d) Same as b), 4 equally divided hourly doses e) Same as c), 4 equally divided hourly doses Healthy volunteers Severe diarrhea after single dose. No diarrhea or only mild cases of short duration after multiple smaller doses. SULFATE; URINE; DRUGS	Cocchetto, D.M. Levy, G. 1981 Journal of Pharmaceutical Sciences 70(3):331-333

Tetrahydrocannabinol cross-reacting cannabinoids (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7382 Urine	Ingestion Inhalation	Homogeneous Enzyme Immunossay	7	a) 132-918 ug/l b) 561-363 ug/l c) 63-118 ug/l d) Not detectible e) 128-705 ug/l f) 100-800 ug/l	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 2 and 6 hr after 30 mg delta-9 tetrahydrocannabinol (THC). 341 ug/l at 24 hr. Predose level 216 ug/l (1 subject) b) 6 and 48 hr after 30 mg delta-9 THC (1 subject) c) 2 and 48 hr after 100 mg cannabidiol. Predose level 132 ug/l (1 subject) d) 100 mg cannabidiol (1 subject) e) 2 and 12 hr after 100 mg cannabinol (1 subject) f) Peak levels 1-5 hr after smoking 1 marijuana cigarette (4 subjects) levels expressed as THC-9 acid eqivalents. f) estimated from graph URINE; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Rodgers, R. Crowl, C.P. Eimstad, W.M. Hu, M.W. Kam, J.K. Ronald, R.C. Rowley, G.L. Ullman, E.F. 1978 Clinical Chemistry 24(1):95-100
7383 Urine	Inhalation		a) 1 b) 1	a) Not given b) Not given	a) 60 ng/ml b) >250 ng/ml	a) 28 hr after a standard marijuana cigarette (20 mg delta-9 tetrahydrocannabinol) (THC) b) 5 hr after a standard marijuana cigarette. Specific assay found 21 ng/ml of 11-nor-9 carboxy-delta-9 THC URINE; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Gross, S.J. Soares, J.R. 1978 Journal of Analytical Toxicology 2:98-100

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7384 Blood, plasma	Ingestion	HPLC	a) 9 b) 8	a) 3.5-6 mg/l b) 6-9.8 mg/l	a) 4.8 +or- 0.7 mg/l b) 8.1 +or- 1.1 mg/l	a) Smokers (4 men, 5 women) b) Nonsmokers (4 men, 4 women) Dose 125 mg every 8 hr for 3 days Samples collected over 8 hr period Range of means estimated from graph In cigarette smokers N-demethylation increased more than 8-hydroxylation Smokers, mean age 30.3 yr, mean wt 61.8 kg. Nonsmokers, mean age 29.7 yr, mean wt 60.3 kg ADULTS; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; MUSCLE RELAXANTS; THEOPHYLLINES; METABOLISM; METABOLITES; SMOKING	Grygiel, J.J. Birkett, D.J. 1981 Clinical Pharmacology and Therapeutics 30(4):491-496
7385 Blood, plasma	Injection	HPLC	a) 1 b) 1 c) 1	a) 24-13 ug/ml b) 14-6.5 ug/ml c) 7-3.8 ug/ml	a) Not given b) Not given c) Not given	a) 30 and 360 min after 3.2-5.3 mg/kg. Initial measurement 17 ug/ml at 15 min b) 30 and 360 min after 3.2-5.3 mg/kg. Initial measurement 7.3 ug/ml at 15 min c) 30 and 300 min after 3.2-5.3 mg/kg. Initial measurement 6.8 ug/ml at 20 min Estimated from graph 24-32 yr old asthmatics BLOOD PLASMA; MILK; DRUGS; AUTONOMIC DRUGS; DIURETICS	Stec, G.P. Greenberger, P. Ruo, T.I. Henthorn, T. Morito, Y. Atkinson, A.J., Jr. Patterson, R. 1980 Clinical Pharmacology and Therapeutics 28(3):404-408

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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
7386 Blood, plasma	Ingestion	GC	1	a) Not applicable b) Not applicable c) Not applicable	a) 146 mg/l b) 98 mg/l c) 31 mg/l	a) 16 hr after dose b) At start of charcoal hemoperfusion c) After 3 hr hemoperfusion Dose 1,575 g 15 yr old, UK Hypotension, tachycardia, cardio-respiratory arrest (resuscitated), acidosis, hypokalemia, hypocalcemia, cardiac arrhythmias, convulsions UNITED KINGDOM; ADOLESCENTS; ADULTS; CASE HISTORIES; BLOOD PLASMA; DRUG ABUSE; DRUGS; HYPNOTICS; MUSCLE RELAXANTS; THEOPHYLLINES	Raper, S. Crome, P. Vale, A. Helliwell, M. Widdop, B. 1982 Archives of Toxicology 49:303-310
7387 Milk	Injection	HPLC	a) 1 b) 1 c) 1	a) 12-6.5 ug/ml b) 10-4.5 ug/ml c) 5.7-2.7 ug/ml	a) Not given b) Not given c) Not given	a) 30 and 330 min after 3.2-5.3 mg/kg b) 30 and 330 min after 3.2-5.3 mg/kg c) 30 and 300 min after 3.2-5.3 mg/kg 24-32 yr old asthmatics BLOOD PLASMA; MILK; DRUGS; AUTONOMIC DRUGS; DIURETICS	Stec, G.P. Greenberger, P. Ruo, T.I. Henthorn, T. Morito, Y. Atkinson, A.J., Jr. Patterson, R. 1980 Clinical Pharmacology and Therapeutics 28(3):404-408
7388 Urine	Ingestion	HPLC	a) 9 b) 8	a) Not given b) Not given	a) 99.5 +or- 1.6% b) 103 +or- 5.3%	a) Smokers (4 men, 5 women) B) Nonsmokers (4 men, 4 women) Dose 125 mg/8 hr for 3 days % of dose excreted over 8 hr period In cigarette smokers N-demethylation increased more than 8-hydroxylation Smokers, mean age 30.3 yr, mean wt 61.4 kg. Nonsmokers, mean age 29.7 yr, mean wt 60.3 kg ADULTS; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; MUSCLE RELAXANTS; THEOPHYLLINES; METABOLISM; METABOLITES; SMOKING	Grygiel, J.J. Birkett, D.J. 1981 Clinical Pharmacology and Therapeutics 30(4):491-496

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)
317-34-0
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
7389 Blood, plasma	Ingestion	HPLC	14	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) 5.6 +or- 1.8 ug/ml b) 5.5 +or- 2.0 ug/ml c) 11.8 +or- 3.5 ug/ml d) 13.1 +or- 5.3 ug/ml e) 12.5 +or- 4.9 ug/ml f) 15.5 +or- 7.2 ug/ml g) 11.5 +or- 4.2 ug/ml h) 14.4 +or- 6.2 ug/ml i) 12.5 +or- 4.7 ug/ml j) 15.5 +or- 6.4 ug/ml	a) Day 1, 2 hr after microcrystalline form b) Day 1, 4.5 hr after sustained-release form c) Day 2, 2 hr after microcrystalline form d) Day 2, 4.5 hr after sustained-release form e) Day 3, 2 hr after microcrystalline form f) Day 3, 4.5 hr after sustained-release form g) Day 4, 2 hr after microcrystalline form h) Day 4, 4.5 hr after sustained-release form i) Day 5, 2 hr after microcrystalline form j) Day 5, 4.5 hr after sustained-release form Microcrystalline dose of 187.5 mg every 6 hr, sustained-release dose of 375 mg every 12 hr, over 5 days Healthy 20-35 yr olds, Northern Ireland Sleep difficulties, headache, nausea, tremors, vomiting, diuresis, malaise, agitation, loss of appetite. IRELAND; ADULTS; BLOOD PLASMA; DRUGS; MUSCLE RELAXANTS; COMPARATIVE EVALUATIONS; THEOPHYLLINES	Russell, C.J. Elwood, R.K. Kinney, C. McDevitt, D.G. 1980 European Journal of Clinical Pharmacology 18:351-354

Theophylline, 7-(2,3-dihydroxypropyl)- (8 CI)
1H-Purine-2,6-dione, 7-(2,3-dihydroxypropyl)-3,7-dihydro-1,3-dimethyl- (9 CI)
479-18-5
C10-H14-N4-O4
MW 254.25, MP 158 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7390 Blood, serum	Injection	HPLC	20	6.3-16.8 ug/ml	10.7 +or- 3.1 ug/ml	Initial level (extrapolation to time 0) after 5 mg/kg Peaks reached within 2 hr, Peaks in milk within 2-4 hr Milk to serum ratio, 2.08 +or- 0.52 Lactating 20-35 yr olds, Kentucky KENTUCKY; ADULTS; BLOOD SERUM; MILK; VASODILATORS; DRUGS; MUSCLE RELAXANTS; THEOPHYLLINES; LACTATION	Jarboe, C.H. Cook, L.W. Malesic, I. Fleischaker, J. 1981 Journal of Clinical Pharmacology 21:405-410

Thioxanthene-delta(9, gamma)-propylamine, 2-chloro-N,N-dimethyl-, (Z)- (8 CI)
1-Propanamine,3-(2-chloro-9H-thioxanthen-9-ylidene)-N,N-dimethyl-, (Z)- (9 CI)
113-59-7
C18-H18-Cl-N-S
MW 315.9, MP 94-95 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7391 Brain		GC UV	1	a) Not applicable b) Not applicable	a) 0.8 mg/100g b) 0.4 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7392 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 0.8 mg/100g b) 1.0 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

Tryptophan, 5-hydroxy-, L- (8 CI)
L-Tryptophan, 5-hydroxy- (9 CI)
4350-09-8
C11-H12-N2-O3
MW 220.23, MP 270 C (dec.)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7393 Blood, plasma	Ingestion	HPLC Fluorometry	15	a) 0.15-0.40 umol/l b) 1.6-3.6 umol/l c) 1.7-3.7 umol/l d) 1.6-2.8 umol/l e) 3.0-5.0 umol/l f) 2.2-9.3 umol/l g) 2.9-5.8 umol/l	a) Not given b) Not given c) Not given d) 2.4 umol/l e) 3.9 umol/l f) Not given g) Not given	a) 0.5 and 2 hr after 2 mg/kg. Final measurement 0.25 umol/l at 8 hr (3 patients) b) 0.5 and 2 hr after 2 mg/kg. Final measurement 1.8 umol/l at 8 hr. After 50 mg carbidopa daily for 14 days (3 patients) c) 0.5 and 2 hr after 2 mg/kg. Final measurement 1.7 umol/l at 8 hr. With 50 mg carbidopa (3 patients) d) Peaks 0.5-5 hr after 50 mg with 50 mg cardidopa (6 normal subjects) e) Peaks 0.5-4 hr after 100 mg with 50 mg cardidopa (6 normal subjects) f) Peaks 1-3 hr after 50 mg with and without 100 mg L-dopa and 25 mg benserazide (6 parkinsonian patients) g) Peaks 1-7 hr after 50 mg with and without 100-250 mg L-dopa and 10-25 mg carbidopa (6 parkinsonian patients) Data also for metabolites (a)-c)). Range of means for a)-c). Estimated from graph CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; DRUG INTERACTION; DRUG THERAPY; DRUGS; AMINO ACIDS; METABOLITES	Magnussen, I. Jensen, T.S. Rand, J.H. VanWoert, M.H. 1981

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
7394 Blood, plasma	Injection	HPLC	1	a) 30-2.5 umol/l b) 4.5-2.3 umol/l c) 3.3-2.0 umol/l d) 2.0-1.8 umol/l	a) Not given b) Not given c) Not given d) Not given	a) Initial measurement and 4 hr. Portal vein b) 15 min and 4 hr. Peripheral artery. Initial measurement 3 umol/l c) 15 min and 4 hr. Peripheral vein d) 30 min and 4 hr. Hepatic vein. Initial measurement 1.8 umol/l Dose 1040 mg (4 mM) IP in dialysate (4 hr dwell time). Data also given for 7th treatment at 14 weeks Estimated from graph Patients with adenocarcinoma of the colon CARCINOMAS; BLOOD PLASMA; DRUG THERAPY; DRUGS; CHEMOTHERAPY	Speyer, J.L. Sugarbaker, P.H. Collins, J.M. Dedrick, R.L. Klecker, R.W., Jr. Myers, C.E. 1981 Cancer Research 41:1916-1922

Urea, (2-bromo-2-ethylbutyryl)- (8 CI)
Butanamide, N-(aminocarbonyl)-2-bromo-2-ethyl- (9 CI)
77-65-6
C7-H13-Br-N2-O2
MW 237.11, MP 116-119 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7395 Blood	Ingestion	GC	4	a) 30-2 nmol/ml b) 15-5 nmol/ml c) 2-1 nmol/ml	a) Not given b) Not given c) Not given	a) 0.5 and 24 hr after 1 g (4.2 nmol) b) 2 and 24 hr after 1 g. Initial measurement 7 nmol/ml at 0.5 hr. Metabolite (bromoethylbutyramide) c) 0.5 and 24 after 1 g. Metabolite (ethylbutyrlurea) Range of means BLOOD; DRUGS; SEDATIVES; BROMINE ORGANIC COMPOUNDS	Vohland, H.-W. Hadisoemarto, S. Wanke, B. 1976 Archives of Toxicology 36:31-42

Valeric acid, 2-propyl- (8 CI)
Pentanoic acid, 2-propyl- (9 CI)
99-66-1
C8-H16-02
MW 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
7396 Blood, plasma	Ingestion	GC	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1 g) 1 h) 1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) 70-3.5 ug/ml f) 75-2 ug/ml g) 35.7-1.2 ug/ml h) 60-20 ug/ml	a) 46.5 ug/ml b) 52.6 ug/ml c) 14.8 ug/ml d) 56.0 ug/ml e) Not given f) Not given g) Not given h) Not given	a) Mother, at delivery, dose 600 mg b) Mother, at delivery, dose 800 mg c) Mother, at delivery, dose 800 mg d) Mother, at delivery, dose 1200 mg e) Infant of a), 1-8 day after parturition, cord blood level 69.0 ug/ml f) Infant of b), 12 hr-8 day after parturition, cord blood level 80.0 ug/ml g) Infant of c), 18 hr-5 1/2 day after parturition, cord blood level 35.7 ug/ml h) Infant of d), 12 hr-2 1/2 day after parturition, cord blood level 80.8 ug/ml Daily dose to mother during pregnancy with last dose 4.9-12.5 hr before delivery e)-h) estimated from graph Epileptic mothers and their full-term male infants, Tokyo Jaundice in two newborns JAPAN; ADULTS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANTICONVULSANTS; DRUGS; HYPNOTICS; SEDATIVES; PREGNANCY	Ishizaki, T. Yokochi, K. Chiba, K. Tabuchi, T. Wagatsuma, T. 1981 Pediatric Pharmacology 1:291-303

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Valeric acid, 2-propyl- (8 CI)
Pentanoic acid, 2-propyl- (9 CI)
99-66-1
C8-H16-O2
MW 144.21, BP 120-121 C at 14 mm Hg, 128-130 C at 20 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7397 Blood, serum	Ingestion	GC/MS	6	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 m) Not given n) Not given o) Not given p) Not given q) Not given	a) 43.2 ug/ml b) 70.5 ug/ml c) 0.6 ug/ml d) 83.3 ug/ml e) 62.7 ug/ml f) 88.0 ug/ml g) 31.6 ug/ml h) 41.6 ug/ml i) 43.5 ug/ml j) 27.1 ug/ml k) 80.0 ug/ml l) 0.5 ug/ml m) 33.3 ug/ml n) 18.8 ug/ml o) 34.0 ug/ml p) 25.1 ug/ml q) 31.0 ug/ml	a) Maternal level at delivery, 11.7 hr after daily dose of 31 mg/kg. Metabolites about 6 ug/ml b) Cord blood of a) at delivery. Metabolites about 10 ug/ml c) Newborn of a) at 260 hr after birth. Metabolites 0.7 ug/ml d) As in a), 12 days postnatal e) Maternal level 1.5 hr after delivery. 25 mg/kg 6.0 hr before delivery. Metabolites about 12 ug/ml f) Cord blood of e). Metabolites about 12 ug/ml g) Maternal level at delivery, 13 hr after 7.7 mg/kg. Metabolites about 3 ug/ml h) Venous cord blood of g). Metabolites about 4 ug/ml i) Arterial cord blood of g). Metabolites about 4 ug/ml j) Maternal level at delivery. 10.7 hr after 26.7 mg/kg, plus 7.4 mg/kg primidone. Metabolites about 4 ug/ml k) Cord blood of j) at delivery. Metabolites about 6 ug/ml l) Newborn of j) at 260 hr m) As in j), 12 days postnatal n) Maternal level at delivery, 6.0 hr after 15.5 mg/kg, plus 14.8 mg/kg primidone. Metabolites about 3 ug/ml o) Cord blood of m). Metabolites about 6 ug/ml p) Maternal blood at delivery 15.5 hr after 25.8 mg/kg plus 5.0 mg/kg phenytoin. Metabolites 3.5 ug/ml q) Cord blood of p) at delivery. Metabolites about 5 ug/ml c) and l) estimated from graph. Epileptic mothers and their newborn 6 of 8 neonates developed icterus neonatorum. Minor abnormalities were hernias, diastasis of musculus rectus abdominis and weak abdominal walls. 2 were microcephalic ADULTS; FETUS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; MILK; ANTICONVULSANTS; DRUG THERAPY; DRUGS; LACTATION; METABOLITES; PREGNANCY	Nau, H. Rating, D. Koch, S. Hauser, I. Helge, H. 1981 Journal of Pharmacology and Experimental Therapeutics 219(3):768-777

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Valeric acid, 2-propyl- (8 CI)
Pentanoic acid, 2-propyl- (9 CI)
99-66-1
C8-H16-02
MW 144.21, BP 120-121 C at 14 mm Hg, 128-130 C at 20 mm Hg

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7398 Milk	Ingestion	GC/MS	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) 2.2-5.4 ug/ml b) 0.034-4.7 ug/ml c) 0.45-0.72 ug/ml d) 0.12-1.05 ug/ml e) 1.2-1.5 ug/ml f) 0.18-1.6 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 4-20 days postnatal (pn). Dose 31.0 mg/kg/day. Serum levels 83.3-102.2 ug/ml b) 5-29 days pn. Dose 10.1 mg/kg/day. Serum, 4.74-96.3 ug/ml c) 3-25 days pn. Dose 9.6 mg/kg/day. Serum, 10.2-32.8 ug/ml d) 38-47 days pn. Dose 9.5 mg/kg/day. Serum 7.6-26.8 ug/ml e) 4-12 days pn. Dose 26.7 mg/kg/day, plus 7.4 primidone/kg/day. Serum 33.3-44.6 ug/ml f) 7-82 days pn. Dose 25.8 mg/kg/day plus 5.0 mg phenytoin/kg/day. Serum 15.2-73.8 ug/ml Data also given for metabolite. Epileptics 6 of 8 neonates developed icterus neonatorum. Minor abnormalities were hernias, diastasis of musculus rectus abdominis and weak abdominal walls. 2 were microcephalic ADULTS; FETUS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; MILK; ANTICONVULSANTS; DRUG THERAPY; DRUGS; LACTATION; METABOLITES; PREGNANCY	Nau, H. Rating, D. Koch, S. Hauser, I. Helge, H. 1981 Journal of Pharmacology and Experimental Therapeutics 219(3):768-777

Valeric acid, 2-propyl-, sodium salt (8 CI)
Pentanoic acid, 2-propyl-, sodium salt (9 CI)
1069-66-5
C8-H16-02.Na
MW 167.23

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7399 Blood, plasma	Ingestion	GC	24	27-118 ug/ml	57.0 +or- 29.6 ug/ml	Mean dose 22.0 mg/kg/day, plus phenobarbital 0.25-16.2 yr old epileptics AGE; CHILDREN; BLOOD PLASMA; ANTICONVULSANTS; DRUG INTERACTION; DRUG THERAPY; DRUGS	Suganuma, T. Ishizaki, T. Chiba, K. Hori, M. 1981 Journal of Pediatrics 99(2):314-317

Valeronitrile, S-((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
7400 Blood	Ingestion	GC	1	Not applicable	8.8 ug/ml	Postmortem sample, suicidal overdose 40 yr old AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; AUTONOMIC DRUGS; DRUG ABUSE; VASODILATORS; FORENSIC MEDICINE; MEASUREMENT METHODS; NEW ZEALAND	Thomson, B.M. Pannell, L.K. 1981 Journal of Analytical Toxicology 5:105-109

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Valeronitrile, S-((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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7401 Blood, plasma	Injection	HPLC	12	a) 100-500 ng/ml b) 1.5-20 ng/ml c) 1.5-9 ng/ml	a) Not given b) Not given c) Not given	a) Initial measurements b) at 300 min c) Final measurements at 300-900 min 15 mg dose Estimated from graph Patients with chronic atrial fibrillation CARDIOVASCULAR DISEASES; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUG THERAPY; DRUGS; METABOLITES	Kates, R.E. Keefe, D.L.D. Schwartz, J. Harapat, S. Kirsten, E.B. Harrison, D.C. 1981 Clinical Pharmacology and Therapeutics 30(1):44-51
7402 Blood, plasma	Ingestion	HPLC	12	a) 2-90 ng/ml b) 70-300 ng/ml c) 2-30 ng/ml d) 1.5-50 ng/ml e) 70-150 ng/ml f) 10-60 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given.	a) Initial measurements, <1 hr b) Peak values, 1-3 hr c) 12 hr d) Norverapamil. Initial measurements at <1 hr d) Norverapamil. Peak values at 1-4 hr f) Norverapamil. 12 hr 120 mg dose Estimated from graph Patients with chronic atrial fibrillation CARDIOVASCULAR DISEASES; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUG THERAPY; DRUGS; METABOLITES	Kates, R.E. Keefe, D.L.D. Schwartz, J. Harapat, S. Kirsten, E.B. Harrison, D.C. 1981 Clinical Pharmacology and Therapeutics 30(1):44-51
7403 Blood, plasma	Injection		4	a) 80-40 ng/ml b) 7-9 ng/ml c) 600-80 ng/ml d) 30-15 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 5 and 30 min after 10 mg IV in left brachial vein. Samples from ascending aorta b) 5 and 30 min after 10 mg IV in left brachial vein. Samples from hepatic vein c) 5 and 30 min after 10 mg IA in brachial artery. Samples from ascending aorta d) 5 and 20 min after 10 mg IA in brachial artery. Final measurement 17 ng/ml at 30 min. Samples from hepatic vein Patients with organic heart disease. CARDIOVASCULAR DISEASES; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUG THERAPY; METABOLISM	Woodcock, B.G. Schulz, W. Kober, G. Rietbrock, N. 1981 Clinical Pharmacology and Therapeutics 30(1):52-56
7404 Blood, plasma	Injection	GC	a) 5 b) 1 c) 1 d) 5 e) 5 f) 5	a) 50-3 ng/ml b) 40-4 ng/ml c) 30-7 ng/ml d) 40-1 ng/ml e) 40-1 ng/ml f) 15-1 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Liver patients, at 1 and 12 hr b) Intensive care patient, at 1 and 8 hr c) Intensive care patient, at 1 and 8 hr d) Intensive care patients, at 1 and 4 hr e) Healthy subjects, upper limits at 1 and 7 hr f) Healthy subjects, lower limits at 1 and 6 hr After 5 mg Range of means (a, d-f) Estimated from graph 33-57 yr old liver disease patients, 16-73 yr old intensive care patients, 29-64 yr old controls LIVER DISEASES; BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUGS	Woodcock, B.G. Rietbrock, I. Vohringer, H.F. Rietbrock, N. 1981 Clinical Pharmacology and Therapeutics 29(1):27-34

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Valeronitrile, S-((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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7405 Kidney	Ingestion	GC HPLC	1	17-35 ug/g	Not applicable	Range for different extraction and measurement methods. Chloroform extraction gave value of 1.5 ug/g. Postmortem samples, suicidal overdose. 40 yr old AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; AUTONOMIC DRUGS; DRUG ABUSE; VASODILATORS; FORENSIC MEDICINE; MEASUREMENT METHODS; NEW ZEALAND	Thomson, B.M. Pannell, L.K. 1981 Journal of Analytical Toxicology 5:105-109
7406 Liver	Ingestion	GC HPLC	1	152-200 ug	Not applicable	Range for different extraction and measurement methods. Chloroform extraction gave value of 2.4 ug. Postmortem sample, suicidal overdose. 40 yr old AUTOPSIES; SUICIDE; BLOOD; KIDNEYS; LIVER; AUTONOMIC DRUGS; DRUG ABUSE; VASODILATORS; FORENSIC MEDICINE; MEASUREMENT METHODS; NEW ZEALAND	Thomson, B.M. Pannell, L.K. 1981 Journal of Analytical Toxicology 5:105-109

Valine, 3-mercapto-, D- (8 CI)
D-Valine, 3-mercapto- (9 CI)
52-67-5
C5-H11-N-O2-S
MW 149.21, MP 198.5 C (D-form)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7407 Blood	Ingestion	HPLC	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable	a) 6.5 ug/ml b) 5.9 ug/ml c) 3.7 ug/ml d) 2.8 ug/ml e) 1.9 ug/ml	a) Plasma, 120 min after <750 mg, solution, fasting subject (50 mg/ml by nasogastric tube, some lost during administration) b) Plasma, 140 min after 750 mg, capsules, fasting subject c) Plasma, 180 min after 750 mg, capsules, preceeded by large breakfast d) Whole blood, 120 min after 750 mg, capsules, fasting subject e) Packed cell concentrations, 140 min after 750 mg, capsules, fasting subject Peaks Unusual double peaks with first lower, seen in fasting studies only Estimated from graph 30 yr old, wt 81.6 kg ADULTS; RHEUMATOID ARTHRITIS; BLOOD; BLOOD SERUM; URINE; DRUGS; PENICILLAMINE	Bergstrom, R.F. Kay, D.R. Harkcom, T.M. Wagner, J.G. 1981 Clinical Pharmacology and Therapeutics 30(3):404-413

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Valine, 3-mercapto-, D- (8 CI)
D-Valine, 3-mercapto- (9 CI)
52-67-5
C5-H11-N-02-S
MW 149.21, MP 198.5 C (D-form)

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7408 Blood, plasma	Injection	HPLC	2	a) 6.75-8 ug/ml b) 4.50-6.50 ug/ml c) 3.00-5.00 ug/ml d) 1.75-2.00 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 240 and 180 min after 1,000 mg b) 240 and 150 min after 750 mg c) 240 and 120 min after 500 mg d) 240 and 120 min after 250 mg Range of peaks Unusual double peaks with first usually lower Capsules in multiples of 125 mg, oral, after by overnight fast Estimated from graph Normal adults ADULTS; RHEUMATOID ARTHRITIS; BLOOD; BLOOD SERUM; URINE; DRUGS; PENICILLAMINE	Bergstrom, R.F. Kay, D.R. Harkcom, T.M. Wagner, J.G. 1981 Clinical Pharmacology and Therapeutics 30(3):404-413
7409 Urine	Ingestion	HPLC	5	a) 245-88.7 mg b) 178-74.7 mg c) 83.7-30.2 mg d) 32.7-7.5 mg e) 56.3-10.6 mg f) Not applicable	a) Not given b) Not given c) Not given d) Not given e) Not given f) 125 mg	a) Dose 1000 mg, capsules, 4 fasting subjects b) Dose 750 mg, capsules, 4 fasting subjects c) Dose 500 mg, capsules, 5 fasting subjects d) Dose 250 mg, capsules, 5 fasting subjects e) Dose 750 mg, capsules, after large breakfast, 2 subjects f) Dose <750 mg, solution nasogastric tube, 1 fasting subject Normal adults ADULTS; RHEUMATOID ARTHRITIS; BLOOD; BLOOD SERUM; URINE; DRUGS; PENICILLAMINE	Bergstrom, R.F. Kay, D.R. Harkcom, T.M. Wagner, J.G. 1981 Clinical Pharmacology and Therapeutics 30(3):404-413

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 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7410 Blood, cells	Ingestion	AAS	a) 10 b) 20 c) 20	a) 8.6-9.1 ug/100 ml b) 7.1-8.8 ug/100 ml c) 6.7-8.3 ug/100 ml	a) 9.0 ug/100 ml b) 8.2 ug/100 ml c) 7.6 ug/100 ml	a) Controls, non-nutrient supplement plus lactose-containing placebo b) High protein-vitamin liquid supplement plus mineral capsule, 6 days/wk c) Supplement and mineral capsule as in b) plus 40 mg Zn as carbonate, 6 days/wk Range of means over 20 months No supplements during 4 mo summer vacation Significantly increased ht, wt, and bone ages in boys receiving Zn during final 12 mo of supplementation, despite subnormal Zn levels in plasma throughout study 13 yr old, prepubertal, village schoolboys, southern Iran IRAN; ADOLESCENTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; CALCIUM; IRON; PHOSPHORUS; ZINC; DIETS	Ronaghy, H.A. Reinhold, J.G. Mahloudji, M. Ghavami, P. Spivey Fox, M.R. Halsted, J.A. 1974 American Journal of Clinical Nutrition 27(2):112-121

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7411 Blood, plasma	Ingestion	AAS		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 65.3 ug/100 ml b) 55.6 ug/100 ml c) 64.3 ug/100 ml d) 58.5 ug/100 ml e) 59.0 ug/100 ml f) 48.8 ug/100 ml	a) Pretreatment, 25 cases b) Group a) after 8 mo regimen of 20 mg Zn/day and 20 mg Fe/day c) Pretreatment, 25 cases d) Group c) after 8 mo regimen of 20 mg Fe/day e) Pretreatment, placebo, 25 cases f) Group e) after 8 mo Low Zn levels thought to be due to diet high in fiber and phytates 6-12 yr olds, Iran Zn and Fe supplementation did not stimulate growth or bone development, but Fe alone did. IRAN; CHILDREN; BLOOD PLASMA; IRON; METALS; ZINC; DIETS; RURAL AREAS	Mahloudji, M. Reinhold, J.G. Haghshenass, M. Ronaghy, H.A. Fox, M.R.S. Halsted, J.A. 1975 American Journal of Clinical Nutrition 28(7):721-725
7412 Blood, plasma	Ingestion		a) 11 b) 11 c) 6 d) 6	a) 4.3-11.5 umol/l b) 9.5-17.2 umol/l c) 9.9-13.9 umol/l d) 14.3-18.2 umol/l	a) 7.5 +or- 0.6 umol/l b) 13.9 +or- 0.8 umol/l c) 12.1 +or- 0.6 umol/l d) 16.0 +or- 0.6 umol/l	a) Before Zn supplement b) After Zn supplement c) Before Zn supplement d) After Zn supplement Malnourished children on soya-based diet (a) and receiving mean of 100 +or- 16 umol/kg/day (b) or on cow's milk-based diet (c) and receiving mean of 71 +or- 20 umol/kg/day (d). Jamaican 6-17 mo olds, suffering from marasmus, marasmic kwashiorkor or kwashiorkor. Zn supplement increased rate of weight gain, decreased energy cost of tissue deposition, and was associated with regrowth of thymus and activation of Na pump. JAMAICA; CHILDREN; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; METALS; ZINC; DIETS; MINERAL DEFICIENCIES	Golden, M.H.N. Golden, B.E. 1981 American Journal of Clinical Nutrition 34:900-908
7413 Blood, plasma	Ingestion	AAS	a) 10 b) 20 c) 20	a) 58-77 ug/100 ml b) 57-75 ug/100 ml c) 54-73 ug/100 ml	a) 68.6 ug/100 ml b) 66.6 ug/100 ml c) 64 ug/100 ml	a) Controls, non-nutrient supplement plus lactose-containing placebo b) High protein-vitamin liquid supplement plus mineral capsule, 6 days/wk c) Supplement and mineral capsule as in b) plus 40 mg Zn as carbonate, 6 days/wk Range of means over 20 months No supplements during 4 mo summer vacation Significantly increased ht, wt, and bone ages in boys receiving Zn during final 12 mo of supplementation, despite subnormal Zn levels in plasma throughout study 13 yr old, prepubertal, village schoolboys, southern Iran IRAN; ADOLESCENTS; NUTRITIONAL DEFICIENCIES; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; CALCIUM; IRON; PHOSPHORUS; ZINC; DIETS	Ronaghy, H.A. Reinhold, J.G. Mahloudji, M. Ghavami, P. Spivey Fox, M.R. Halsted, J.A. 1974 American Journal of Clinical Nutrition 27(2):112-121

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7414 Blood, plasma	Ingestion	AAS	a) 6 b) 5 c) 4 d) 5 e) 5 f) 5 g) 4 h) 5 i) 5 j) 5	a) Not applicable b) Not applicable c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) Not applicable h) Not applicable i) Not applicable j) Not applicable	a) +142 ug/dl b) +43.5 ug/dl c) -4 ug/dl d) +49 ug/dl e) +42 ug/dl f) +21.5 ug/dl g) +4 ug/dl h) +3 ug/dl i) -6.5 ug/dl j) -18.5 ug/dl	a) 120 g oysters (108 mg Zn) b) Same as a), plus 120 g black bean gruel (BBG) c) Same as a), plus 120 g corn tortillas (CT) d) 475 mg $ZnSO_4.7H_2O$ (108 mg Zn), plus 120 g BBG e) 120 g oysters, plus 120 g BBG f) 475 mg $ZnSO_4.7H_2O$ (108 mg Zn), plus 120 g CT g) 120 g oysters (108 mg Zn), plus 120 g CT h) 120 g herring i) Same as h), plus 70 g white bread and 10 g batter j) Same as h), plus 70 g CT Mean peak changes from fasting pretest levels (not reported) at 1-4 hr after intake. Healthy adults ADULTS; BLOOD PLASMA; COMPARATIVE EVALUATIONS; METALS; ZINC; DIETS; FOODS	Solomons, N.W. Jacob, R.A. Pineda, O. Viteri, F. 1979 Journal of Laboratory and Clinical Medicine 94(2):335-343
7415 Blood, plasma	Ingestion	AAS	1	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 3.2 uM/l b) 12.5 uM/l c) 21.4 uM/l d) 12.2 uM/l	a) During therapy of 1800 mg/day di-iodohydroxyquinoline (Diodoquin). Oral contraceptive taken concurrently b) 1500 mg/day Diodoquin, oral contraceptive discontinued c) Peak, 6 days after start of 150 mg/day $ZnSO_4$ supplement, plus 1500 mg/day Diodoquin d) Oral contraceptive taken concurrently with 150 mg/day $ZnSO_4$ supplement. Diodoquin discontinued 25 yr old with acrodermatitis enteropathica ADULTS; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS; BLOOD SERUM; URINE; DRUG INTERACTION; DRUG THERAPY; ORAL CONTRACEPTIVES; ZINC; METALS	Jackson, M.J. 1977 Journal of Clinical Pathology 30:284-287
7416 Blood, serum	Ingestion	AAS	47	Not given	99.3 +or- 23.9 ug/dl	Mean daily intake, 9.2 +or- 2.5 mg, no supplements Seventh-Day Adventist Canadian Women, mean age 52.9 +or- 15.3 yr, vegetarians 19 +or- 17 yr. ADULTS; BLOOD SERUM; HAIR; HEMOGLOBINS; IRON; ZINC; DIETS	Anderson, B.M. Gibson, R.S. Sabry, J.H. 1981 American Journal of Clinical Nutrition 34:1042-1048
7417 Blood, serum	Injection	AAS	a) 23 b) 22	a) 8.5-12.3 umol/l b) 11.5-16 umol/l	a) Not given b) Not given	a) Postoperative day 2 and 5, preoperative level 14.4 umol/l b) Postoperative day 1 and day 5, preoperative level 14.7 umol/l. 20 mg Zn and 1.2 mg Cu IV daily Range of means, estimated from graph. Surgery patients ADULTS; BLOOD SERUM; COPPER; METALS; ZINC	Hallbook, T. Hedelin, H. 1978 Acta Chirurgica Scandinavica 144:423-426

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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 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7418 Blood, serum	Ingestion	AAS	33	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) 105 +or- 7 ug/100 ml b) 212 +or- 17 ug/100 ml c) 336 +or- 8 ug/100 ml d) 227 +or- 8 ug/100 ml e) 87 +or- 3 ug/100 ml f) 135 +or- 8 ug/100 ml g) 131 +or- 7 ug/100 ml h) 98 +or- mg/100 ml i) 219 +or- 16 ug/100 ml j) 184 +or- 13 ug/100 ml	a) Fasting, no supplement b) Fasting, 25 mg supplement c) Fasting, 50 mg supplement d) 50 mg supplement with black coffee only e) 50 mg supplement with meal plus milk and cheese f) 50 mg supplement with meal plus water and dry meat g) 50 mg supplement plus meal h) 50 mg with meal as in a) i) 50 mg with meal as in f) j) 50 mg with mean as in g) Supplement as sulfate Basic meal of coffee, bread, butter and jam. Brown bread (high phytic acid) in e)-g). White bread in h)-j) Additional data presented for purified inhibitors. 19-47 yr olds (mean 28 yr) Gastric discomfort 1/2-1 hr after 50 mg in some subjects NUTRITIONAL DEFICIENCIES; BLOOD SERUM; ZINC; DIETS; FOODS	Pecoud, A. Donzel, P. Schelling, J.L. 1975 Clinical Pharmacology and Therapeutics 17(4):469-474
7419 Hair	Ingestion	NA	52	Not given	187 +or- 44 ug/g	Mean daily intake, 9.2 +or- 2.5 mg, no supplements Seventh-Day Adventist Canadian Women, mean age 52.9 +or- 15.3 yr, vegetarians 19 +or- 17 yr. ADULTS; BLOOD SERUM; HAIR; HEMOGLOBINS; IRON; ZINC; DIETS	Anderson, B.M. Gibson, R.S. Sabry, J.H. 1981 American Journal of Clinical Nutrition 34:1042-1048
7420 Urine	Ingestion	AAS	1	Not applicable	2.9 uM/24 hr	Woman taking oral contraceptives and 1800 mg/day di-iodohydroxyquinoline for 2 yr 25 yr old with acrodermatitis enteropathica ADULTS; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS; BLOOD SERUM; URINE; DRUG INTERACTION; DRUG THERAPY; ORAL CONTRACEPTIVES; ZINC; METALS	Jackson, M.J. 1977 Journal of Clinical Pathology 30:284-287

1-Penten-4-yn-3-ol, 1-chloro-3-ethyl-
113-18-8
C7-H9-Cl-O
MW 144.61, BP 173-174 C, also reported as 181 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7421 Blood		GC TLC UV GC/MS Enzymatic	1	0-41.5 mg/l	Not given	Dose probably sufficient to contribute to signs and symptoms Results from 3 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose pateints, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7422 Blood		GC	3	0.30-1.86 mg/100 ml	Not given	Drug induced fatalities. Ethanol (2 cases, 0.09-0.17 g/100 ml) and secobarbital (1 case, 0.80 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7423 Blood	Inhalation	RIA GC/MS	1	Not applicable	0.63 mg/dl	Drug overdose fatality. 0.045 mg/dl cocaine and 0.10 mg/dl ethanol also present 45 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)-9H-thioxanthen-9-ylideme)propyl-, (Z)-
53772-82-0
C23-H25-F3-N2-O-S
MW 434.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7424 Amniotic fluid		RIA	2	0.4-0.5 ng/ml	0.45 ng/ml	Dose, 40 mg/2 wk (decanoate). Serum levels 1.7 and 2.1 ng/ml NEWBORN; AMNIOTIC FLUID; BLOOD SERUM; MILK; DRUG THERAPY; DRUGS; TRANQUILIZERS; LACTATION; PREGNANCY	Kirk, L. Jorgensen, A. 1980 Psychopharmacology 72:107-108

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1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)-9H-thioxanthen-9-ylidene)propyl-, (Z)-
53772-82-0
C23-H25-F3-N2-O-S
MW 434.54

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7425 Blood, serum		RIA	5	a) 1.3-4.3 ng/ml b) 0.3-0.9 ng/ml c) 1.3-1.5 ng/ml	a) 2.7 ng/ml b) 0.6 ng/ml c) 1.4 ng/ml	a) Maternal serum, at delivery b) Umbilical cord serum c) Maternal serum, postpartum, 4-41 days Dose 2 mg/day or 30-60 mg/2 or 3 wk (decanoate) 24-29 yr olds DRUGS; PSYCHOTROPIC DRUGS; TRANQUILIZERS; NEWBORN; BLOOD SERUM; AMNIOTIC FLUID; MILK; DRUG THERAPY; LACTATION; PREGNANCY	Kirk, L. Jorgensen, A. 1980 Psychopharmacology 72:107-108
7426 Milk		RIA	3	0.8-1.8 ng/ml	1.6 ng/ml	4-41 days postpartum. Serum levels 1.3-1.5 ng/ml. Dose, 2 mg/day or 40 mg/2 wk or 60 mg/3 wk NEWBORN; AMNIOTIC FLUID; BLOOD SERUM; MILK; DRUG THERAPY; DRUGS; TRANQUILIZERS; LACTATION; PREGNANCY	Kirk, L. Jorgensen, A. 1980 Psychopharmacology 72:107-108

1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)phenothiazin-10-yl)propyl)- (8 CI)
1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)-10H-phenothiazin-10-yl)propyl)- (9 CI)
69-23-8
C22-H26-F3-N3-O-S
MW 437.52, BP 268-274 C at 0.5 mm Hg, 250-252 C at 0.3 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7427 Blood, plasma		Radioreceptor assay	a) 1 b) 1 c) 1 d) 1	a) < 1.0 ng/ml b) 2.0-6.5 ng/ml c) 2.6-14.6 ng/ml d) 9.4-12.5 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 5 mg/day b) 15 mg/day c) 15 mg/day d) 30 mg/day Range of weekly means. Treated 3 wk. Absence of coffee and tea during wk 2 did not increase bioavailability. Mentally retarded patients with psychotic disturbances. NEW ZEALAND; ADULTS; BEHAVIOR DISORDERS; MENTAL RETARDATION; BLOOD PLASMA; PSYCHOTROPIC DRUGS; COMPARATIVE EVALUATIONS; DIETS; DRUGS; CAFFEINE	Bowen, S. Taylor, K.M. Gibb, I.A. McL. 1981 Lancet 1(8231):1217-1218

1-Piperidinebutanol, alpha-(4-(1,1-dimethylethyl)phenyl)-4-(hydroxydiphenylmethyl)-
50679-08-8
C32-H41-N-O2
MW 241.28

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7428 Blood, plasma	Ingestion	RIA Radiometry	a) 14 b) 14 c) 6	a) 1.303-0.053 ng/ml b) 4.144-0.276 ng/ml c) 342-42 ng-eqviv./ml	a) Not given b) Not given c) Not given	a) 1 and 48 hr after 60 mg. Initial measurement 1.255 ng/ml at 0.5 hr. AUC 11.864 ng hr/ml b) 1 and 48 hr after 180 mg. Initial measurement 3.344 ng/ml at 0.5 hr. AUC 44.341 ng hr/ml c) 1.5 and 12 hr after 60 mg (40 uCi) of C-14 labelled terfenadine. Initial measurement 96 ng-equiv./ml at 0.5 hr. AUC 2297.71 ng-equiv./ml ADULTS; BLOOD PLASMA; DRUGS; ANTIHISTAMINE; MEASUREMENT METHODS	Okerholm, R.W. Weiner, D.L. Hook, R.H. Walker, B.J. Leeson, G.A. Biedenbach, S.A. Cawein, M.J. Dusebout, T.D. Wright, G.J. Myers, M. Schindler, V. Cook, C.E. 1981 Biopharmaceutics & Drug Disposition 2:185-190

1,2-Propanediol, 3-(2-nitroimidazol-1-yl)- (8 CI)
1,2-Propanediol, 3-(2-nitro-1H-imidazol-1-yl- (9 CI)
13551-92-3
C6-H9-N3-O4
MW 187.18

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7429 Blood, plasma	Ingestion	HPLC	a) 16 b) 1	a) 35-2 ug/ml b) 28-34 ug/ml	a) Not given b) Not applicable	a) 1 and 24 hr after 1 g/sq m b) 30 min and 3 hr after dose of 1 g/sq m. Normalized doses. Final measurement 30 ug/ml at 4.2 hr. Estimated from graph. Patients with carcinoma or melanoma ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Minchinton, A.I. 1981 British Journal of Cancer 43:344-349
7430 Cerebrospinal fluid		HPLC	8	0-12 ug/ml	Not given	1 and 3 hr after normalized dose of 1 g/sq m. Final measurement 7 ug/ml at 13 hr Estimated from graph. Patients with malignancies. ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Minchinton, A.I. 1981 British Journal of Cancer 43:344-349
7431 Mammary gland	Ingestion	HPLC	1	23-33 ug/g	Not applicable	1 and 2 hr after normalized dose of 1 g/sq m, final measurement 27 ug/g at 4.5 hr Estimated from graph. Biopsies of tumor Patient with breast carcinoma ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Minchinton, A.I. 1981 British Journal of Cancer 43:344-349

1,4-Dihydroxy-5,8-bis((2-((2-hydroxyethyl)amino)ethyl)amino)-9,10-anthracenedione dihydrochloride (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7432 Blood, plasma	Injection	HPLC	4	400-960 ng/ml	630 +or- 223 ng/ml	Max levels after 30 min IV of 12 mg/sq m Cancer patients CARCINOMAS; SARCOMAS; BLOOD PLASMA; DRUG THERAPY; DRUGS	Reynolds, D.L. Ulrich, K.K. Patton, T.F. Repta, A.J. Sternson, L.A. Myron, M.C. Taylor, S.A. 1981 International Journal of Pharmaceutics 9:67-71

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-O4
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
7433 Bile	Injection Ingestion Inhalation	RIA GC/MS	20	Trace-0.74 mg/dl	Not given	Drug overdose fatalities 18-40 yr olds, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905
7434 Blood	Ingestion		1	a) Not applicable b) Not applicable	a) 3.6 ug/ml b) 5.2 ug/ml	a) 4 hr after exposure b) About 24 hr after exposure After ingestion of 6 condoms containing 5 g each, 1 of which ruptured during endoscopy. 31 yr old Disorientation, euphoria, loss of consciousness. Systolic pressure 40 mm Hg, pulse rate 140/min. Apnea, dilated pupils, massive clonic seizures BLOOD; DRUG ABUSE; DRUGS; NARCOTICS	Suarez, C.A. Arango, A. Lester, J.L. 1977 Journal of the American Medical Association 238(13):1391-1392
7435 Blood	Injection Inhalation Rectal	GC	a) 3 b) 6	a) Not detected-0.82 mg/100 ml b) < 0.01-2.1 mg/100 ml	a) Not given b) Not given	a) Cocaine overdose implicated as direct cause of death b) Other drugs present Overdose or suicide victims, CA and TX SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7436 Blood	Injection Ingestion Inhalation	RIA GC/MS	16	0.08-0.80 mg/dl	Not given	Deaths attributed to cocaine overdose. In 6 other drug fatalities cocaine levels were not more than 0.13 mg/dl and other drugs, including morphine, codeine, methaqualone, were also found. 18-40 yr olds, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7437 Brain	Injection Inhalation	CC	a) 1 b) 2	a) Not applicable b) 0.03-1.5 mg/100 g	a) 0.04 mg/100 g b) Not given	a) Cocaine overdose implicated as direct cause of death b) Other drugs present Overdose or suicide victims, CA SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7438 Kidney	Injection	CC	a) 2 b) 1	a) 1.68-2.70 mg/100 g b) Not applicable	a) Not given b) 0.02 mg/100 g	a) Cocaine overdose implicated as direct cause of death b) Other drugs present Overdose or suicide victims, CA SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7439 Liver	Injection Inhalation	CC	a) 3 b) 6	a) 0.01-0.15 mg/100 g b) Not detected-2.0 mg/100 g	Not given b) Not given	a) Cocaine overdose implicated as direct cause of death b) Other drugs present Overdose or suicide victims, CA SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7440 Lung	Injection Inhalation	CC	a) 1 b) 3	a) Not applicable b) 0.09-0.6 mg/100 g	a) 0.01 mg/100 g b) Not given	a) Cocaine overdose implicated as direct cause of death b) Other drugs present Overdose or suicide victims, CA SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7441 Urine	Injection Inhalation Rectal	CC	4	0.15-21.5 mg/100 ml	Not given	Drug overdose, or suicide victims, CA and TX. Other drugs also present SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408
7442 Urine	Intranasal	GC TLC RIA Enzyme Immunoassay	6	a) 0.10-4.28 mg b) 10.50-39.11 mg c) 13.62-44.07 mg	a) Not given b) Not given c) Not given	a) Cocaine, 24 hr b) Metabolite (benzoylecgonine), 24 hr c) Total, 168 hr Dose 66.96-109.73 mg (average 98.2% absorbed) Healthy 23-34 yr olds URINE; DRUGS; NARCOTICS; MEASUREMENT METHODS	Hamilton, H.E. Wallace, J.E. Shimek, E.L. Land, P. Harris, S.C. Christenson, J.G. 1977 Journal of Forensic Sciences 22(4):697-707
7443 Urine	Injection	RIA GC/MS	1	Not applicable	0.18 mg/dl	Dose unknown, autopsy data 37 yr old resident of Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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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-O4
MW 303.35, MP 98 C, BP 187-188 C at 0.1 mm Hg

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7444 Vitreous humor	Injection	CC	1	Not applicable	0.38 mg/100 ml	Overdose victim, TX SUICIDE; BLOOD; BRAIN; EYE; KIDNEYS; LIVER; LUNGS; URINE; DRUG ABUSE; DRUGS; NARCOTICS; CALIFORNIA; TEXAS	Lundberg, G.D. Garriott, J.C. Reynolds, P.C. Cravey, R.H. Shaw, R.F. 1977 Journal of Forensic Sciences 22(2):402-408

1H-Imidazo(4,5-b)pyridine, 2-(2-methoxy-4-(methylsulfinyl)phenyl)-
73384-60-8
C14-H13-N3-O2-S
MW 287.36

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7445 Blood, plasma	Injection Ingestion	HPLC		a) 2400-<10 ng/ml b) 1575-<10 ng/ml c) 940-<10 ng/ml d) 675-<10 ng/ml e) 440-<10 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given	a) Initial measurement and 4 hr after 0.7 mg/kg IV b) 30 min and 10 hr after 150 mg, oral. Initial measurement, 1100 ng/ml at 15 min c) 15 min and 8 hr after 100 mg, oral d) 15 min and 8 hr after 75 mg, oral e) 15 min and 8 hr after 50 mg, oral Healthy 30-59 yr olds. BLOOD PLASMA; ANTIARRHYTHMIC AGENTS; DRUGS	Roth, W. Zimmer, A. Busch, U. 1981 Arzneimittel-Forschung/ Drug Research 31(1),1a:236-239
7446 Urine	Ingestion			Not given	51%	% radioactivity of 2.0 mg/kg dose eliminated in 24 hr URINE; ANTIARRHYTHMIC AGENTS; DRUGS; METABOLITES	Roth W. Prox, A. Reuter, A. Schmid, J. Zimmer, A. Zipp, H. 1981 Arzneimittel-Forschung/ Drug Research 31(1),1a:232-235

1H-Indene-3-acetic acid, 5-fluoro-2-methyl-1-((4-methylsulfinyl)phenyl)methylene)-, (Z)-
38194-50-2
C20-H17-F-O3-S
MW 356.4, MP 182-185 C (dec)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7447 Blood, plasma	Ingestion	HPLC	4	a) 5.0-0.3 ug/ml b) 0.2-2.5 ug/ml c) 0.4-1.6 ug/ml	a) Not given b) Not given c) Not given	a) Sulindac. 2 and 8 hr after dose. Initial measurement 0.35 ug/ml at about 15 min b) Metabolite (sulindac sulfide). 0.5 and 3.5 hr after dose. Final measurement 0.5 ug/ml at 8 hr c) Metabolite (sulindac sulfone). 0.5 and 3 hr after dose. Final measurement 0.8 ug/ml at 8 hr Dose 200 mg Range of means, estimated from graph. Healthy 30-45 yr olds ADULTS; BLOOD PLASMA; URINE; ANTI-INFLAMMATORY AGENTS; DRUGS; METABOLITES; METABOLISM	Swanson, B.N. Boppana, V.K. 1981 Journal of Chromatography 225:123-130
7448 Urine	Ingestion	HPLC	4	a) Not given b) Not given	a) 15.6 mg b) 27.17 mg	a) Sulindac b) Total metabolites (sulindac glucuronide, sulfone, and sulfone glucuronide) Total 8 hr output after 200 mg Healthy 30-45 yr olds ADULTS; BLOOD PLASMA; URINE; ANTI-INFLAMMATORY AGENTS; DRUGS; METABOLITES; METABOLISM	Swanson, B.N. Boppana, V.K. 1981 Journal of Chromatography 225:123-130

1H-Pyrazolo(1,2-a)(1,2,4)benzotriazine-1,3(2H-dione, 5-(dimethylamino)-9-methyl-2-propyl-
13539-59-8
C16-H20-N4-O2
MW 300.37

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7449 Urine	Injection	TLC	27	a) 51-73% of dose b) 17-75% of dose c) 2-41% of dose d) 1-11% of dose	a) 62% of dose b) 41% of dose c) 21% of dose d) 5% of dose	a) Controls b) Modest impairment of liver function c) Severe impairment of liver function d) Kidney disease Dose 600 mg ADULTS; KIDNEY DISEASES; LIVER DISEASES; URINE; ANTI-INFLAMMATORY AGENTS; DRUG THERAPY; DRUGS	Breuing, K.-H. Gilfrich, H.J. Meinertz, T. Wiegand, U.-W. Jahnchen, E. 1981 European Journal of Clinical Pharmacology 20:147-155

11H-Pyrido(2,1-b)quinazoline-8-carboxylic acid, 2-methoxy-11-oxo-
63094-36-0
C14-H10-N2-O4
MW 270.26

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7450 Blood, plasma	Ingestion	RIA	a) 1 b) 1 c) 1	a) 280-2 ng/ml b) 700-3 ng/ml c) 6000-3 ng/ml	a) Not applicable b) Not applicable c) Not applicable	a) About 2 and 36 hr after 2 mg. Initial measurement 220 ng/ml b) About 3 and 36 hr after 10 mg. Initial measurement about 190 ng/ml c) About 0.5 and 60 hr after 50 mg Estimated from graph Healthy adults BLOOD PLASMA; AUTONOMIC DRUGS; DRUGS; ANTIHISTAMINE; MEASUREMENT METHODS	Dixon, R. Lucek, R. Lin, Y.-Y. Colburn, W. Parsonnet, M. 1980 Research Communications in Chemical Pathology and Pharmacology 30(1):163-170

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, MP 75-76 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7451 Blood		GC TLC UV GC/MS Enzymatic	2	0-0.2 mg/l	Not given	Doses probably less than toxic amount Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7452 Blood		GC TLC UV	1859	0->20 ug/ml	Not given	88.6% were multiple drug toxicities. In most cases levels exceeded therapeutic ranges Autopsy reports, United States and Canada, 1976-78 Coma, seizures, syncope, vomiting ADULTS; AUTOPSIES; BLOOD; ANALGESICS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Finkle, B.S. Caplan, Y.H. Garriott, J.C. Monforte, J.R. Shaw, R.F. Sonsalla, P.K. 1981 Journal of Forensic Sciences 26(4):739-757
7453 Blood			10	0.02-0.50 mg/100 ml	Not given	Drug induced fatalities. Ethanol (7 cases, 0.03-0.34 g/100 ml), phenobarbital (3 cases, 0.4-0.7 mg/100 ml), and pentobarbital (2 cases, 0.3-0.7 mg/100 ml), diphenhydram (1 case, 0.2 mg/100 ml), methaqualone (1 case, 0.30 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

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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, MP 75-76 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7454 Blood	Ingestion	TLC GC	1	a) Not applicable b) Not applicable	a) 0.10 mg/kg b) 1.70 mg/kg	a) Propoxyphene b) Norpropoxyphene 100 mg Darvon-N 4X/day as drug substitute 2054 g stillborn infant of 21 yr old heroin-dependent mother on detoxification program for 1 yr Death from intrauterine anoxia and acute intoxication. Mother had ingested or injected morphine derivative and/or propoxyphene. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914
7455 Blood		GC	2	Not applicable	0.07 mg%	Drivers fatally injured in single-car crash. Blood alcohol 220 mg% North Carolina NORTH CAROLINA; BLOOD; DRUG ABUSE; DRUGS; ALCOHOLS	Turk, R.F. McBay, A.J. Hudson, P. 1974 Journal of Forensic Sciences 19(1):90-97
7456 Liver	Ingestion	TLC GC	1	a) Not applicable b) Not applicable	a) 5.6 mg/kg b) 16.0 mg/kg	a) Propoxyphene b) Norpropoxyphene 100 mg Darvon-N 4X/day as drug substitute 2054 g stillborn infant of 21 yr old heroin-dependent mother on detoxification program for 1 yr Death from intrauterine anoxia and acute intoxication. Mother had ingested or injected morphine derivative and/or propoxyphene. FETUS; INFANTS; BLOOD; BRAIN; KIDNEYS; LIVER; LUNGS; ANALGESICS; DRUG ABUSE; DRUGS; NARCOTICS; METABOLISM; METABOLITES	Cravey, R.H. Reed, D. 1981 Clinical Toxicology 18(8):911-914

2-Propanol, 1-(4-(2-methoxyethyl)phenoxy)-3-((1-methylethyl)amino)-, (+-)-
37350-58-6
C15-H25-N-O3
MW 267.38

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7463 Blood, plasma	Ingestion	CC	a) 5 b) 5 c) 5 d) 5	a) 50-4 ng/ml b) 90-1 ng/ml c) 200-8 ng/ml d) 500-7 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 2 and 33 hr after 50 mg. Initial measurement 40 ng/ml at 1 hr b) 2 and 33 hr after 100 mg. Initial measurement 80 ng/ml at 1 hr c) 2 and 24 hr after 200 mg. Initial measurement 180 ng/ml at 1 hr d) 1 and 33 hr after 400 mg Range of means, estimated from graph Healthy 18-33 yr olds Duration of cardiac beta blocking activity determined by elimination half life and dose. ADULTS; BLOOD PLASMA; DRUGS; COMPARATIVE EVALUATIONS	Harron, D.W.G Balnave, K. Kinney, C.D. Wilson, R. Russell, C.J. Shanks, R.G. 1981 Clinical Pharmacology and Therapeutics 29(3):295-302

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
7464 Blood, plasma	Ingestion	CC	8	a) 29.2-102.4 ng/ml b) 145.4-554 ng/ml	a) 71.3 +or- 29.4 ng/ml b) 251.1 +or- 142.4 ng/ml	a) Zimelidine b) Norzimelidine (active metabolite) Steady state levels after 225 +or- 78.5 ng/day for at least one week 8.4 +or- 1.8% of a) and 18.3 +or- 2.8% of b) as free drug Patients with unipolar or bipolar depressive disorders, 17-67 yr olds, MD MARYLAND; BEHAVIOR DISORDERS; BLOOD PLASMA; CEREBROSPINAL FLUID; ANTIDEPRESSIVE AGENTS; DRUG THERAPY; DRUGS; METABOLITES	Calil, H.M. Jostell, K.G. Cowdry, R.W. Potter, W.Z. 1982 Clinical Pharmacology and Therapeutics 31(4):522-527
7465 Cerebrospinal fluid	Ingestion	CC	8	a) 2.7-6.9 ng/ml b) 26.7-72.0 ng/ml	a) 5.7 +or- 1.8 ng/ml b) 42.9 +or- 16.1 ng/ml	a) Zimelidine b) Norzimelidine (active metabolite) Steady state levels after 225 +or- 78.5 ng/day for at least one week Patients with unipolar or bipolar depressive disorders, 17-67 yr olds, MD MARYLAND; BEHAVIOR DISORDERS; BLOOD PLASMA; CEREBROSPINAL FLUID; ANTIDEPRESSIVE AGENTS; DRUG THERAPY; DRUGS; METABOLITES	Calil, H.M. Jostell, K.G. Cowdry, R.W. Potter, W.Z. 1982 Clinical Pharmacology and Therapeutics 31(4):522-527

2,4-Piperidinedione, 3,3-diethyl-5-methyl-
125-64-4
C10-H17-N-O2
MW 183.26, MP 74-77 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7466 Blood			3	0.87-3.57 mg/100 ml	Not given	Drug induced fatalities. Ethanol (2 cases, 0.04-0.20 g/100 ml) and amobarbital-secobarbital (1 case, 0.80 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

2,4-Pyrimidinediamine, 6-(1-piperidinyl)-, 3-oxide
38304-91-5
C9-H15-N5-O
MW 209.29

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7467 Blood, serum			1	150-0.5 ng/ml	Not applicable	3 hr and 13 hr after ingestion of possibly as much as 100 mg 2 yr old boy Reflex tachycardia was observed pulse rate dropped from 160/min to 120/min CHILDREN; BLOOD SERUM; ANTIHYPERTENSIVE AGENTS	Isles, C. MacKay, A. Barton, P.J.M. Mitchell, I. 1981 Lancet 1(8211):97

2,4,6(1H,3H,5H)-Pyrimidinetrione, 5-ethyl-5-(3-methylbutyl)-, monosodium salt, mixt. with 5-(1-methylbutyl)-5-(2-propenyl)-2,4,6(1H,3H,5H)-pyrimidinetrione monosodium salt
8065-05-2
C12-H18-N2-O3.C11-H18-N2-O3.2Na
MW 510.61

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7468 Blood		UV	4	0.3-0.8 mg/100 ml	Not given	Drug induced fatalities. Ethanol (3 cases, 0.02-0.19 g/100 ml), phenobarbital (1 case, 0.5 mg/100 ml), and phenytoin (1 case, 0.16 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142

2,7-(Epoxypentadeca(1,11,13)trienimino)naphtho(2,1-b)furan-1,11(2H)-dione,
5,6,9,17,19,21-hexahydroxy-23-methoxy-2,4,12,16,18,20,22-heptamethyl-8-(N-(4-methyl-1-piperazinyl)formimidoyl)-, 21-acetate (8 CI)
Rifamycin, 3-(((4-methyl-1-piperazinyl)imino)methyl)- (9 CI)
13292-46-1
C43-H58-N4-O12
MW 822.96, MP platelets from acetone 183-188 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7469 Bile	Ingestion	HPLC	1	a) Not applicable b) Not applicable	a) 313 +or- 2 ug/ml b) 13 +or- 3 ug/ml	a) Parent compound b) Metabolite (3-Formylrifamycin SV) 8-10 hr after about 15 g overdose 28 yr old suicide victim, wt 70 kg Severe, acute pulmonary edema. Congestion and swelling of brain and kidneys. Liver abnormalities ADULTS; SUICIDE; BILE; BLOOD; LIVER; URINE; ANTIBIOTICS; DRUG ABUSE; DRUGS; ALCOHOLS; METABOLITES	Plomp, T.A. Battista, H.J. Unterdorfer, H. van Ditmarsch, W.C. Maes, R.A.A. 1981 Archives of Toxicology 48:245-252
7470 Blood	Ingestion	HPLC	1	Not applicable	55 +or- 2 ug/ml	8-10 hr after about 15 g overdose 28 yr old suicide victim, wt 70 kg Severe, acute pulmonary edema. Congestion and swelling of brain and kidneys. Liver abnormalities ADULTS; SUICIDE; BILE; BLOOD; LIVER; URINE; ANTIBIOTICS; DRUG ABUSE; DRUGS; ALCOHOLS; METABOLITES	Plomp, T.A. Battista, H.J. Unterdorfer, H. van Ditmarsch, W.C. Maes, R.A.A. 1981 Archives of Toxicology 48:245-252
7471 Liver	Ingestion	HPLC	1	a) Not applicable b) Not applicable c) Not applicable	a) 373 +or- 75 ug/g b) 225 +or- 60 ug/g c) 268 +or- 18 ug/g	a) Parent compound b) Metabolite (3-Formylrifamycin SV) c) Metabolite (25-Desacetylrifampicin) 8-10 hr after about 15 g overdose 28 yr old suicide victim, wt 70 kg Severe, acute pulmonary edema. Congestion and swelling of brain and kidneys. Liver abnormalities ADULTS; SUICIDE; BILE; BLOOD; LIVER; URINE; ANTIBIOTICS; DRUG ABUSE; DRUGS; ALCOHOLS; METABOLITES	Plomp, T.A. Battista, H.J. Unterdorfer, H. van Ditmarsch, W.C. Maes, R.A.A. 1981 Archives of Toxicology 48:245-252
7472 Urine	Ingestion	HPLC	1	a) Not applicable b) Not applicable c) Not applicable	a) 475 +or- 22 ug/ml b) 31 +or- 4 ug/ml c) 796 +or- 29 ug/ml	a) Parent compound b) Metabolite (3-Formylrifamycin SV) c) Metabolite (25-Desacetylrifampicin) 8-10 hr after about 15 g overdose 28 yr old suicide victim, wt 70 kg Severe, acute pulmonary edema. Congestion and swelling of brain and kidneys. Liver abnormalities ADULTS; SUICIDE; BILE; BLOOD; LIVER; URINE; ANTIBIOTICS; DRUG ABUSE; DRUGS; ALCOHOLS; METABOLITES	Plomp, T.A. Battista, H.J. Unterdorfer, H. van Ditmarsch, W.C. Maes, R.A.A. 1981 Archives of Toxicology 48:245-252

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
7473 Blood	Injection	GC	a) 16 b) 16	a) 0.28-0.09 ug/ml b) 0.04-0.15 ug/ml	a) Not given b) Not given	a) 120 and 480 min after 100 mg spinal injection. Initial measurement, 0.15 ug/ml at 15 min b) 15 and 60 min after 100 mg with 0.2 mg adrenaline. Final measurement, 0.08 ug/ml at 480 min Range of means, estimated from graph 45-75 yr old hospital patients undergoing minor operations BLOOD; ANESTHETICS; DRUG INTERACTION; DRUGS	Axelsson, K. Widman, B. 1981 Acta Anaesthesia Scandinavia 25:240-245
7474 Blood	Injection	GC	9	a) 1.3-0.09 ug/ml b) 1.2-0.07 ug/ml	a) Not given b) Not given	a) Fasting b) With food 0.5 and 4.5 hr after 150 mg for 15 min Range of means estimated from graph Healthy 23-34 yr olds ADULTS; BLOOD; ANESTHETICS; ANTIARRHYTHMIC AGENTS; DRUGS; FOODS	Elvin, A.T. Cole, A.F.D. Pieper, J.A. Rolbin, S.H. Lalka, D. 1981 Clinical Pharmacology and Therapeutics 30(4):455-461
7475 Blood	Ingestion	ELISA	1	a) Not applicable b) Not applicable c) Not applicable	a) 10 ug/ml b) 6.3 ug/ml c) 0 ug/ml	a) 1 hr b) 4 hr c) 30 hr After accidentally swallowing 1200 mg (38.7 mg/kg) intended for gargling Healthy 74 yr old, wt 31 kg Acute delirium (agitation, combativeness, and disorientation) 1-4 hr after ingestion ADULTS; BLOOD; ANESTHETICS; DRUGS; METABOLISM; METABOLITES	Fruncillo, F.J. Gobbons, W. Bowman, S.M. 1982 New England Journal of Medicine 306(7):426-427
7476 Blood	Injection Inhalation	RIA GC/MS	3	0.01-0.70 mg/dl	Not given	Suspected cocaine overdose fatalities 22-34 yr olds, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

2H-1,2,4-Benzothiadiazine-7-sulfonamide, 6-chloro-, 1,1-dioxide
58-94-6
C7-H6-Cl-N3-O4-S2
MW 295.74, MP 342.5-343 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7477 Urine	Ingestion	HPLC	12	a) 31.49-56.17 mg b) 32.76-73.41 mg c) 50.50-104.56 mg	a) 44.30 +or- 10.15 mg (35% of dose) b) 49.58 +or- 14.83 mg (20% of dose) c) 79.63 +or- 17.75 mg (16% of dose)	a) 125 mg solution b) 250 mg solution c) 500 mg solution 72 hr cumulative excretion Absorption-elimination not proportional to dose Healthy volunteers ADULTS; URINE; ANTIHYPERTENSIVE AGENTS; DIURETICS; DRUGS; COMPARATIVE EVALUATIONS; METABOLISM	Shah, V.P. Lee, J. Hunt, J.P. Prasad, V.K. Cabana, B.E. Foster, T. 1981b Current Therapeutic Research 29(6):823-837

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2H-1,2,4-Benzothiadiazine-7-sulfonamide, 6-chloro-, 1,1-dioxide
58-94-6
C7-H6-Cl-N3-O4-S2
MW 295.74, MP 342.5-343 C (decomp)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7478 Urine	Ingestion	HPLC	12	a) 24-81 mg b) 18-105 mg c) 14-69 mg d) 18-99 mg	a) 45 +or- 19 mg (18.0%) b) 52 +or- 25 mg (20.7%) c) 42 +or- 15 mg (16.7%) d) 61 +or- 23 mg (24.5%)	a) 250 mg tablet from Danbury Pharmacal b) 250 mg tablet from Mylan Pharmaceuticals c) 250 mg tablet from Merck Sharp and Dohme Laboratories d) 250 mg as sodium salt in solution (injectable form) Merck Sharp and Dohme Laboratories 72 hr cumulative excretion % of dose Results suggest absorption both saturable and site specific Healthy volunteers, wt 60-107 kg, ht 152-198 cm ADULTS; URINE; ANTIHYPERTENSIVE AGENTS; DIURETICS; DRUGS; COMPARATIVE EVALUATIONS	Welling, P.G. Walter, D.M. Patel, R.B. Barbhaiya, R.H. Porter, W.A. Amidon, G.L. Foster, T.S. Shah, V.P. Hunt, J.P. Prasad, V.K. 1981 Current Therapeutic Research 29(6):815-822
7479 Urine	Ingestion	HPLC	12	a) 51-105 mg b) 34-76 mg c) 30-79 mg d) 25-79 mg	a) 80 +or- 17.7 mg (16.0%) b) 50 +or- 13.0 mg (10.0%) c) 54 +or- 14.8 mg (10.8%) d) 51 +or- 16.1 mg (10.2%)	a) 500 mg as sodium salt in solution (injectable form) b) 500 mg tablet from Merck Sharp and Dohme Laboratories c) 500 mg tablet from Mylan Pharmaceuticals d) 2 x 250 mg tablets from Danbury Pharmacal Cumulative 72 hr excretion % of dose Absorption incomplete and erratic Healthy volunteers ADULTS; URINE; ANTIHYPERTENSIVE AGENTS; DIURETICS; DRUGS; COMPARATIVE EVALUATIONS	Shah, V.P. Lee, J. Hunt, J.P. Prasad, V.K. Cabana, B.E. Foster, T. 1981a Current Therapeutic Research 29(6):802-814

2H-1,4-Benzodiazepin-2-one, 5-(o-fluorophenyl)-1,3-dihydro-1-methyl-7-nitro- (8CI)
2H-1,4-Benzodiazepin-2-one, 5-(2-fluorophenyl)-1,3-dihydro-1-methyl-7-nitro- (9 CI)
1622-62-4
C16-H12-F-N3-O3
MW 313.30, MP 166-167 C (also reported as 170-172 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7480 Blood, plasma	Ingestion	RIA	5	2.6-6.1 ng/ml	Not given	9 hr after 2 mg Range of means for days 1, 8, 15 during 14 day study with one dose per night. Healthy 21-60 yr olds with sleep difficulties Slightly reduced sleep latency, but no effect on sleep duration or number of wakings. No effect on psychomotor performance. BLOOD PLASMA; DRUG THERAPY; DRUGS; HYPNOTICS	Linnoila, M. Erwin, C.W. Brendle, A. 1982 Journal of Clinical Pharmacology 22:14-19

2H-1,4-Benzodiazepin-2-one, 7-chloro-1-(2-(diethylamino)ethyl)-5-(o-fluorophenyl)-1,3-dihydro- (8 CI)
2H-1,4-Benzodiazepin-2-one, 7-chloro-1-(2-(diethylamino)ethyl)-5-(2-fluorophenyl)-1,3-dihydro- (9 CI)
17617-23-1
C21-H23-Cl-F-N3-O
MW 387.91

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7481 Blood, plasma	Ingestion	GC	26	a) 5.3-19.6 ng/ml b) 11.5-20.2 ng/ml c) 8.2-15.1 ng/ml d) 10.3-19.1 ng/ml e) 40-65 ng/ml f) 34-143 ng/ml g) 63-102 ng/ml h) 59-151 ng/ml	a) 10.2 ng/ml b) 14.5 ng/ml c) 11.1 ng/ml d) 12.4 ng/ml e) 53 ng/ml f) 85 ng/ml g) 81 ng/ml h) 86 ng/ml	a) 7 young men, mean time to peak 4.1 hr b) 7 young women, mean time to peak 23.3 hr c) 6 elderly men, mean time to peak 28.5 hr d) 6 elderly women, mean time to peak 17.6 hr e) Group a), mean time to steady-state level 89 hr, 4 subjects f) Group b), mean time to steady-state level 74 hr, 5 subjects g) Group c), mean time to steady-state level 115 hr, 4 subjects h) Group d), mean time to steady-state level 104 hr, 5 subjects a)-d) Peak level desalkylflurazepam (metabolite) after single 15 mg dose e)-h) Steady-state level desalkylflurazepam after 15 mg nightly for 15 nights Time to peak (0.5-96 hr) not influenced by age Half-life longer in elderly men than in young men No evidence of increased sensitivity in elderly 19-34 yr old young subjects, and 61-85 yr old elderly subjects. Healthy, non-insomniac. ADULTS; BLOOD PLASMA; DRUG THERAPY; DRUGS; HYPNOTICS; METABOLISM; METABOLITES	Greenblatt, D.J. Divoll, M. Harmatz, J.S. MacLaughlin, D.S. Shader, R.I. 1981 Clinical Pharmacology and Therapeutics 30(4):475-486

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
7482 Blood		GC TLC UV GC/MS Enzymatic	a) 1 b) 2 c) 3	a) 0-2.1 mg/l b) 0-2.6 mg/l c) 0-1.0 mg/l	a) Not given b) Not given c) Not given	a) Dose probably sufficient to contribute to signs and symptoms b) Doses probably less than toxic amounts c) Patients denied taking drug Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases. Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, Ma MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7483 Blood	Ingestion	RIA	1	a) Not applicable b) Not applicable	a) 0.9 mg/l b) 0.6 mg/l	a) Diazepam b) Nordiazepam 1.2 mg/l hydrocodone also present. Reported to have ingested 6 oz Hycodan (5 mg/5 ml hydrocodone bitartrate) 35 yr old suicide victim AUTOPSIES; SUICIDE; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Cimbura, G. Koves, B. 1981 Journal of Analytical Toxicology 5: 296-299
7484 Blood			10	0.04-0.09 mg/100 ml	Not given	Drug induced fatalities. Ethanol (4 cases, 0.15-0.33 g/100 ml), methadone (2 cases, 0.01-0.04 mg/100 ml), amobarbital (2 cases, 0.13-0.5 mg/100 ml), methapyrilene (1 case, 0.25 mg/100 ml), propoxyphene (2 cases, 0.02-0.09 mg/100 ml), and meperidine (1 case, 0.02 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7485 Blood		Fluorometry	12	0.6-7.4 ug/ml	Not given	Deaths involving diazepam and morphine (2-31 ug/dl) Diazepam plus major metabolites Wayne County, MI MICHIGAN; AUTOPSIES; DRUG ABUSE; DRUGS; NARCOTICS; PSYCHOTROPIC DRUGS; SEDATIVES	Monforte, J.R. 1977 Journal of Forensic Sciences 22(4):718-724
7486 Blood, plasma	Injection	GC	6	a) 570-150 ng/ml b) 9-1 ng/ml c) 7-32 ng/ml d) 800-200 ng/ml e) 12-3 ng/ml f) 3-15 ng/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Total diazepam. 20 min and 8 hr after dose. 160 ng/ml at about 4 min b) Plasma free diazepam. 10 min and 8 hr after dose. 15 ng/ml at about 4 min c) Plasma total N-desmethyldiazepam. 40 min and 8 hr after dose d) Same as a). 240 ng/ml at about 4 min e) Same as b). 30 ng/ml at about 4 min f) Same as c) Dose in a)-c) 10 mg IV. Dose in d)-f) 10 mg IV, with plasma ethanol level 800-1000 mg/l Range of means, estimated from graph Healthy 21-32 yr olds BLOOD PLASMA; DRUG INTERACTION; DRUGS; SEDATIVES; TRANQUILIZERS; ALCOHOLS; DIAZEPAMS	Sellers, E.M. Naranjo, C.A. Giles, H.G. Frecker, R.C. Beeching, M. 1980 Clinical Pharmacology and Therapeutics 28(5):638-645
7487 Blood, plasma	Ingestion	GC-EC	110	16-1412 ng/ml	329 +or- 272 ng/ml	2-55 mg diazepam/day (mean 19.9 mg/day). Correlation with age and highly significant correlation with dose. 24-69 yr old psychiatric patients, wt 43-136 kg, therapy 1-14 yr DRUGS; BLOOD PLASMA; SEDATIVES; DRUG THERAPY; METABOLITES; AGE	Greenblatt, D.J. Laughren, T.P. Allen, M.D. Harmatz, J.S. Shader, R.I. 1981 British Journal of Clinical Pharmacology 11:35-40

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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
7488 Breath	Injection	Radiometry	a) 11 b) 17 c) 15 d) 27 e) 9	a) 15-38% b) 11-22% c) 4-13% d) 2-21% e) 11-31%	a) 26.6 +or- 7.1% b) 14.0 +or- 2.6% c) 8.1 +or- 2.3% d) 11.4 +or- 3.7% e) 15.7 +or- 3.3%	a) Patients on anticonvulsants b) Controls c) Patients with hepatocellular disease d) Patients with hepatic neoplasm e) Patients with cholestasis 24 hr excretion of C-14 after 5 uCi (5 mg). Statistically significant differences at 6 hr and later. Estimated from graph 43-57 yr old hospital patients Confusion or dysarthria occurred in one control and 8 patients with hepatocellular disease BREATH; CIRRHOSIS; LIVER DISEASES; URINE; ANALGESICS; ANTICONVULSANTS; ANTIPYRETICS; DRUG INTERACTION; DRUGS; TRANQUILIZERS; COMPARATIVE EVALUATIONS	Hepner, G.W. Vesell, E.S. Lipton, A. Harvey, H.A. Wilkinson, G.R. Schenker, S. 1977 Journal of Laboratory and Clinical Medicine 90(3):440-456
7489 Urine	Injection	Radiometry	a) 11 b) 17 c) 15 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 14.1 +or- 2.3% b) 14.0 +or- 2.5% c) 3.3 +or- 0.8% d) 15.5 +or- 6.3%	a) Patients on anticonvulsants b) Controls c) Patients with hepatocellular disease d) Patients with cholestasis 24 hr output of C-14 after 5 uCi (5 mg) 43-57 yr olds Confusion or dysarthria occurred in one control and 8 patients with hepatocellular disease BREATH; CIRRHOSIS; LIVER DISEASES; URINE; ANALGESICS; ANTICONVULSANTS; ANTIPYRETICS; DRUG INTERACTION; DRUGS; TRANQUILIZERS; COMPARATIVE EVALUATIONS	Hepner, G.W. Vesell, E.S. Lipton, A. Harvey, H.A. Wilkinson, G.R. Schenker, S. 1977 Journal of Laboratory and Clinical Medicine 90(3):440-456

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
7490 Blood		GC UV	1	a) Not applicable b) Not applicable	a) 1.6 mg/100g b) 1.0 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7491 Blood, plasma	Ingestion	GC-EC	a) 22 b) 9	a) 242-1195 ng/ml b) 447-854 ng/ml	a) 646 ng/ml b) 653 ng/ml	a) Men b) Women Peak levels 2.2 (a) and 1.7 hr (b) after 30 mg. No significant differences Healthy 22-86 yr olds Mean drug clearance significantly higher in smokers AGE; SEX; BLOOD PLASMA; DRUGS; SEDATIVES; COMPARATIVE EVALUATIONS; SMOKING	Ochs, H.R. Greenblatt, D.J. Otten, H. 1981 Klinische Wochenschrift 59:899-903
7492 Brain		GC UV	1	a) Not applicable b) Not applicable	a) 0.4 mg/100g b) 1.3 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7493 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 10.1 mg/100g b) 14.5 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

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
7494 Blood, plasma	Ingestion	GC-EC	110	26-1599 ng/ml	389 +or- 334 ng/ml	2-55 mg diazepam/day (mean 19.9 mg/day). Highly significant correlation with dose 24-69 yr old psychiatric patients, wt 41-136 kg, therapy 1-14 yr DRUGS; BLOOD PLASMA; SEDATIVES; DRUG THERAPY; METABOLITES; AGE	Greenblatt, D.J. Laughren, T.P. Allen, M.D. Harmatz, J.S. Shader, R.I. 1981 British Journal of Clinical Pharmacology 11:35-40

2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(o-chlorophenyl)-1,3-dihydro-3-hydroxy-1-methyl- (8 CI)
2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-1-methyl- (9 CI)
848-75-9
C16-H12-C12-N2-O2
MW 335.20

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7495 Blood, plasma	Ingestion	RIA	5	a) 2.7-0.2 ng/ml b) 2.4-0.1 ng/ml c) 34-52 ng/ml d) 37-48 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) 2 and 24 hr with hemodialysis treatment b) 2 and 24 hr without hemodialysis c) 2 and 8 hr, glucuronide metabolite. Without hemodialysis. Final measurement 39 ng/ml at 48 hr d) 2 and 12 hr, glucuronide metabolite. With hemodialysis. Final measurement 40 ng/ml at 48 hr After 1 mg dose Hemodialysis 1-4 or 5 hr after dose Range of means, estimated from graph 36-65 yr old patients with terminal renal failure Drug biotransformation unaltered, but glucuronide metabolite cumulates by a factor of 5 to 6 as a result of uremia ADULTS; KIDNEY DISEASES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; SEDATIVES; COMPARATIVE EVALUATIONS; HEMODIALYSIS; BENZODIAZEPINES; GERMANY	Kampf, D. Huempel, M. Lerche, U. Kessel, M. 1981 Clinical Pharmacology and Therapeutics 30(1):77-85
7496 Urine	Ingestion	RIA	5	a) Not given b) Not given	a) 0% of dose b) 3.8% of dose	a) 48 hr cumulative output b) 48 hr cumulative output, glucuronide metabolite After 1 mg dose 36-65 yr old patients with terminal renal failure Drug biotransformation unaltered, but glucuronide metabolite cumulates by a factor of 5 to 6 as a result of uremia ADULTS; KIDNEY DISEASES; BLOOD PLASMA; URINE; DRUG THERAPY; DRUGS; SEDATIVES; COMPARATIVE EVALUATIONS; HEMODIALYSIS; BENZODIAZEPINES; GERMANY	Kampf, D. Huempel, M. Lerche, U. Kessel, M. 1981 Clinical Pharmacology and Therapeutics 30(1):77-85

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-C12-N2-O2
MW 321.16, MP 166-168 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7497 Amniotic fluid	Injection Ingestion	GC-EC	23	a) Not given b) Not given c) Not given d) Not given	a) 2.0 +or- 2.2 ng/ml b) 4.9 +or- 3.0 ng/ml c) 4.2 +or- 2.3 ng/ml d) 19.1 +or- 13.0 ng/ml	a) 0-2 hr after 2.0 mg IM. Unconjugated b) Same as a). Conjugated c) 11-15.5 hr after 2.5 mg, oral. Unconjugated d) Same as c). Conjugated Healthy pregnant women FETUS; BLOOD SERUM; URINE; DRUG THERAPY; DRUGS; SEDATIVES; PREGNANCY	Kanto, J. Aaltonen, L. Liukko, P. Maenpaa, K. 1980 Acta Pharmacologica et Toxicologica 47:130-134

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2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(o-chlorophenyl)-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-
C15-H10-Cl2-N2-O
MW 323.13, MP 166-168 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7498 Blood, serum	Injection Ingestion	GC-EC	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 k) Not given l) Not given	a) 8.5 +or- 3.4 ng/ml b) 18.1 +or- 17.2 ng/ml c) 7.0 +or- 2.3 ng/ml d) 33.9 +or- 23. ng/ml e) 7.1 +or- 2.7 ng/ml f) 4.8 +or- 3.8 ng/ml g) 8.8 +or- 5.6 ng/ml h) 23.5 +or- 11.7 ng/ml i) 6.9 +or- 2.0 ng/ml j) 4.8 +or- 3.6 ng/ml k) 8.7 +or- 3.6 ng/ml l) 25.4 +or- 13.3 ng/ml	a) 0.8-7.7 hr after 2.0 mg IM. Maternal vein. Unconjugated b) Same as a). Conjugated c) 11-15.5 hr after 2.5 mg oral. Maternal vein. Unconjugated d) Same as c). Conjugated e) Same as a). Umbilical vein f) Same as b). Umbilical vein g) Same as c). Umbilical vein h) Same as d). Umbilical vein i) Same as a). Umbilical artery j) Same as b). Umbilical artery k) Same as c). Umbilical artery l) Same as d). Umbilical artery In a), b), e), f), i) and j) dose given during first stage of labor. In other cases dose given night before elective cesarean section Healthy pregnant women FETUS; BLOOD SERUM; URINE; DRUG THERAPY; DRUGS; SEDATIVES; PREGNANCY	Kanto, J. Aaltonen, M. Liukko, E. Maenpaa, L. 1980 Acta Pharmacologica et Toxicologica 47:130-138

3-Heptanol, 6-(dimethylamino)-4,4-diphenyl-, acetate (ester) (8 CI) (VAN)
Benzenemethanol, 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
7499 Blood, plasma	Ingestion	GC	11	a) 50-100 ng/ml b) 70-260 ng/ml c) 40-170 ng/ml	a) Not given b) Not given c) Not given	a) 5 and 13 days after start of 0.73-0.92 mg/kg/48 hr. 70 ng/ml on day 19. Parent compound b) 3 and 13 days after start of 0.73-0.92 mg/kg/48 hr. 220 ng/ml on day 19. Metabolite (dinoracetylmethadol) c) 3 and 13 days after start of 0.73-0.92 mg/kg/48 hr. 140 ng/ml on day 19. Metabolite (noracetylmethadol) Range of means, estimated from graph Treatment began 24 hr after discontinuation of methadone Patients on methadone maintenance program BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS; COMPARATIVE EVALUATIONS	Henderson, G.L. Weinberg, J.A. Hargreaves, W.A. Lau, D.H.M. Tyler, J. Baker, B. 1977 Journal of Analytical Toxicology 1(1):1-5

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
7500 Amniotic fluid	Ingestion	GC	10	0.07-0.39 ug/ml	Not given	Dose 30-100 mg/day, 1 sample/subject, 14-40 wk gestation. Plasma levels 0.14-0.48 ug/ml. Amniotic fluid to plasma mean ratio 0.73 Patients on methadone Severe withdrawal symptoms in some newborns NEW YORK; NEWBORN; AMNIOTIC FLUID; BLOOD PLASMA; MILK; URINE; DRUG THERAPY; DRUGS; NARCOTICS; LACTATION; PREGNANCY	Blinick, G. Inturrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621
7501 Amniotic fluid	Ingestion	GC	14	0.01-0.67 ug/ml	0.20 ug/ml	Dose 5-60 mg/day Methadone-maintained mothers All infants of mothers on methadone at time of delivery exhibited withdrawal symptoms. Severity positively correlated with total maternal dose during last 12 wk of pregnancy, daily dose at delivery, and intrapartum serum level. NEWBORN; AMNIOTIC FLUID; BLOOD; URINE; DRUG THERAPY; DRUGS	Harper, R.G. Solish, G. Feingold, E. Gersten-Woolf, N.B. Sokal, M.M. 1977 American Journal of Obstetrics and Gynecology 129:417-424
7502 Bile	Ingestion	GC	1	a) 0.23-0.08 ug/ml b) 119.5-24.1 ug/ml c) 0.11-0.03 ug/ml	a) Not given b) Not given c) Not given	a) Methadone b) Pyrrolidine, metabolite of a) c) Pyrroline, metabolite of a) 0-6 and 18-24 hr after 100 mg 60 yr old surgical patient BILE; BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS; METABOLITES	Kreck, M.J. Kalisman, M. Irwin, M. Jaffery, N.F. Scheflan, M. 1980 Research Communications in Chemical Pathology and Pharmacology 29(1):67-78
7503 Blood		GC TLC UV GC/MS Enzymatic	1	0-0.4 mg/l	Not given	Dose probably less than toxic amount Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575

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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
7504 Blood	Injection	GC	a) 4 b) 4	a) 42-1 ng/ml b) 420-180 ng/ml	a) Not given b) Not given	a) Non addicts. 1 and 24 hr after 10 mg/1.79 sq m, IM, as hydrochloride. Maximum in gastric fluid 2800 ng/ml at 3 hr b) Ex-heroin addicts on methadone. 1 and 24 hr after 53.7-80.5 mg, IM, as hydrochloride. Maximum in gastric fluid 28000 ng/ml at 2 hr Range of means estimated from graph Healthy subjects between 20 and 30 yr BLOOD; SALIVA; DRUG ABUSE; DRUGS; NARCOTICS	Lynn, R.K. Olsen, G.D. Leger, R.M. Gordon, W.P. Smith, R.G. Gerber, N. 1975 Drug Metabolism and Disposition 4(5):504-509
7505 Blood	Ingestion	GC	1	a) 95-50 ng/ml b) 6.7-3.7 ng/ml	a) Not given b) Not given	a) Methadone, 2 and 24 hr after 75 mg. Initial measurement, 67 ng/ml b) Pyrrolidine metabolite for a), 4 and 24 hr. Initial measurement, 4.0 ng/ml Methadone maintenance patient BLOOD; DRUG THERAPY; DRUGS; NARCOTICS; MEASUREMENT METHODS; METABOLITES	Jacob, P. Rigod, J.F. Pond, S.M. Benowitz, N.L. 1981 Journal of Analytical Toxicology 5:292-295
7506 Blood			2	0.01-0.04 mg/100 ml	Not given	Drug induced fatalities. Ethanol, 0.10-0.15 g/100 ml also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7507 Blood	Ingesiton	GC	a) 6 b) 4 c) 6	a) 35-5.2 ng/ml b) 25-6 ng/ml c) 15-3.5 ng/ml	a) Not given b) Not given c) Not given	a) 2 and 72 hr after 15 mg d,l-methadone. 30 ng/ml at 1 hr b) 2 and 48 hr after 7.5 mg d-methadone. 22 ng/ml at 1 hr c) 2 and 72 hr after 7.5 mg l-methadone. 13 ng/ml at 1 hr Range of means, estimated from graph a) and c) had greater effects on respiration Healthy 21-35 yr olds Respiratory depression and miosis. Antidiuretic effect BLOOD; ANALGESICS; DRUGS; NARCOTICS; COMPARATIVE EVALUATIONS	Olsen, G.D. Wendel, H.A. Livermore, J.D. Leger, R.M. Lynn, R.K. Gerber, N. 1977 Clinical Pharmacology and Therapeutics 21(2):147-157
7508 Blood, fetal		GC	19	0-0.12 ug/ml	0.05 ug/ml	Maternal daily dose 5-60 mg. Infants of methadone-maintained mothers All infants of mothers on methadone at time of delivery exhibited withdrawal symptoms. Severity positively correlated with total maternal dose during last 12 wk of pregnancy, daily dose at delivery, and intrapartum serum level. NEWBORN; AMNIOTIC FLUID; BLOOD; URINE; DRUG THERAPY; DRUGS	Harper, R.G. Solish, G. Feingold, E. Gersten-Woolf, N.B. Sokal, M.M. 1977 American Journal of Obstetrics and Gynecology 129:417-424

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3-Heptanone, 6-(dimethylamino)-4,4-diphenyl-
76-99-3
C21-H27-N-O
MW 309.45

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7509 Blood, plasma		GC	13	a) 0.18-0.53 ug/ml b) 0.08-0.28 ug/ml c) 0.02-0.53 ug/ml	a) 0.358 ug/ml b) 0.179 ug/ml c) 0.377 ug/ml	a) 3 reliable patients. Steady state level. Mean daily dose 1.13 mg/kg b) Same as a) following one day dose omission c) 10 patients at clinic, random selection. Mean daily dose 1.25 mg/kg High variance in c) (48.5%) suggested prescribed dose not taken. Methadone maintenance patients BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS	Verebely, K. Kutt, H. 1975 Research Communications in Chemical Pathology and Pharmacology 11(3):373-386
7510 Blood, plasma	Ingestion	GC	11	149-53 ng/ml	Not given	1 and 5 days after discontinuation of 0.62-1.00 mg/kg/day Patients on methodone maintenance program BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS; COMPARATIVE EVALUATIONS	Henderson, G.L. Weinberg, J.A. Hargreaves, W.A. Lau, D.H.M. Tyler, J. Baker, B. 1977 Journal of Analytical Toxicology 1(1):1-5
7511 Blood, plasma	Ingestion	GC	25	a) 0.14-0.48 ug/ml b) 0.05-0.38 ug/ml c) 0.04-0.25 ug/ml d) 0.06-1.66 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) Dose 30-100 mg/day. 14-40 wk gestation. Amniotic fluid levels 0.07-0.39 ug/ml (10 cases) b) Dose 40-100 mg/day. 38-41 wk gestation (12 cases) c) Umbilical cord plasma for b). Mean ratio of c) to b) 0.57 d) Dose 10-80 mg/day, 3-10 days postpartum (10 cases). Levels in milk 0.05-0.57 ug/ml Patients on methadone Severe withdrawal symptoms in some newborns NEW YORK; NEWBORN; AMNIOTIC FLUID; BLOOD PLASMA; MILK; URINE; DRUG THERAPY; DRUGS; NARCOTICS, LACTATION; PREGNANCY	Blinick, G. Inturrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621
7512 Blood, plasma	Ingestion	GC	11	40-420 ng/ml	Not given	Dose 20-85 mg/day. Weekly measurements over 5-28 wk. Dose self adjusted (as much as 5 mg/wk). Large fluctuations in plasma levels per given dose. No relationship between plasma level and symptom complaints. Patients in methadone treatment program BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS	Horns, W.H. Rado, M. Goldstein, A. 1975 Clinical Pharmacology and Therapeutics 17(6):636-649
7513 Blood, plasma	Ingestion	GC	1	0.00-0.42 ug/ml	Not given	3 and 24 hr after 100 mg. 0.64 ug/ml at 2 hr 60 yr old surgical patient BILE; BLOOD PLASMA; DRUG THERAPY; DRUGS; NARCOTICS; METABOLITES	Kreck, M.J. Kalisman, M. Irwin, M. Jaffery, N.F. Scheflan, M. 1980 Research Communications in Chemical Pathology and Pharmacology 29(1):67-78

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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
7514 Blood, serum	Ingestion	GC	20	0-0.66 ug/ml	0.19 ug/ml	Maternal intrapartum serum. Daily dose 5-60 mg. Methadone-maintained mothers All infants of mothers on methadone at time of delivery exhibited withdrawal symptoms. Severity positively correlated with total maternal dose during last 12 wk of pregnancy, daily dose at delivery, and intrapartum serum level. NEWBORN; AMNIOTIC FLUID; BLOOD; URINE; DRUG THERAPY; DRUGS; NARCOTICS	Harper, R.G. Solish, G. Feingold, E. Gersten-Woolf, N.B. Sokal, M.M. 1977 American Journal of Obstetrics and Gynecology 129:417-424
7515 Milk	Ingestion	GC	10	0.05-0.57 ug/ml	Not given	Dose 10-80 mg/day, 1 sample/subject, 3-10 days postpartum. Mean milk to plasma ratio 0.83 Patients on methadone Severe withdrawal symptoms in some newborns NEW YORK; NEWBORN; AMNIOTIC FLUID; BLOOD PLASMA; MILK; URINE; DRUG THERAPY; DRUGS; NARCOTICS; LACTATION; PREGNANCY	Blinick, G. Inturrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621
7516 Saliva	Injection	GC	a) 4 b) 4	a) 28-63 ng/ml b) 2500-420 ng/ml	a) Not given b) Not given	a) Nonaddicts, 0.5 and 3 hr after 10 mg/1.79 sq m, IM, as hydrochloride. Final measurement 45 ng/ml in 7 hr b) Ex-heroin addicts, 3 and 7 hr after 53.7-80.5 mg, IM, as hydrochloride. Initial measurement 960 ng/ml at 0.5 hr Range of means estimated from graph Healthy subjects between 20 and 30 yr BLOOD; SALIVA; DRUG ABUSE; DRUGS; NARCOTICS	Lynn, R.K. Olsen, G.D. Leger, R.M. Gordon, W.P. Smith, R.G. Gerber, N. 1975 Drug Metabolism and Disposition 4(5):504-509
7517 Urine	Ingestion	GC	6	a) 7.4-33% of dose b) 9.6-22% of dose c) Not applicable d) Not applicable e) Not applicable f) Not applicable g) 2.9-24% of dose h) 14-43% of dose	a) Not given b) Not given c) 28% of dose d) 14% of dose e) 11% of dose f) 11% of dose g) Not given Not given	a) 10 mg/day (5 subjects) b) Same as a), metabolite (2-ethylidine-1,5-dimethyl-3,3-diphenylpyrrolidine(M-1)) c) 25 mg/day (1 subject) d) Same as c), M-1 e) 50 mg/day (1 subject) f) Same as e), M- g) 80 mg/day (5 subjects) h) Same as g), M-1 Mean daily output for 5 day periods. Ratio of M-1 to methadone increases with increasing dose. Six other metabolites identified. 20-30 yr old detoxified opiate addicts, Swede URINE; DRUG THERAPY; DRUGS; NARCOTICS; METABOLITES, SWEDE	Anggard, E. Gunne, L.-M. Holmstrand, J. McMahon, R.E. Sandberg, C.-G. Sullivan, H.R. 1975 Clinical Pharmacology and Therapeutics 17(3):258-266

3-Heptanone, 6-(dimethylamino)-4,4-diphenyl-
76-99-3
C21-H27-N-O
MW 309.49

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7518 Urine	Ingestion	GC	19	a) 0.25-49.00 ug/ml b) 0.12-6.07 ug/ml c) 0.12-5.50 ug/ml d) 0.10-3.00 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 9 mothers, predelivery. Dose 10-100 mg/day. 1 sample/subject b) 10 newborns, 1st day c) 10 newborns, 2nd day d) 9 newborns, 3rd day Patients on methadone Severe withdrawal symptoms in some newborns NEW YORK; NEWBORN; AMNIOTIC FLUID; BLOOD PLASMA; MILK; URINE; DRUG THERAPY; DRUGS; NARCOTICS; LACTATION; PREGNANCY	Blinick, G. Inturrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621
7519 Urine		GC	30	a) 0.095-6.2 ug/ml b) 0.01-15 ug/ml	a) 1.49 ug/ml b) 4.08 ug/ml	a) 16 newborn of methadone-maintained mothers. Maternal dose 5-60 mg/day b) 14 Mothers All infants of mothers on methadone at time of delivery exhibited withdrawal symptoms. Severity positively correlated with total maternal dose during last 12 wk of pregnancy, daily dose at delivery, and intrapartum serum level. NEWBORN; AMNIOTIC FLUID; BLOOD; URINE; DRUG THERAPY; DRUGS	Harper, R.G. Solish, G. Feingold, E. Gersten-Woolf, N.B. Sokal, M.M. 1977 American Journal of Obstetrics and Gynecology 129:417-424

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
7520 Blood, plasma	Ingestion	HPLC	6	a) 83-98 mg/l b) 81-112 mg/l c) 75-115 mg/l	a) Not given b) Not given c) Not given	a) Total phenylbutazone, after 200 mg/day. Unbound fraction 0.8-2.4 mg/l. Oxyphenbutazone (OPB) level 8-23 mg/l b) After 300 mg/day. Unbound fraction 1.7-3.1 mg/l. OPB 7-18 mg/l c) Total phenylbutazone, after 400 mg/day. Unbound fraction 2.2-5.0 mg/l. OPB 5-15 ug/l Steady-state levels Estimated from graph 56-65 yr old rheumatoid arthritic patients RHEUMATOID ARTHRITIS; BLOOD PLASMA; ANTI-INFLAMMATORY AGENTS; DRUG THERAPY; DRUGS	Higham, C. Aarons, L. Holt, P.J.L. Lynch, M. Rowland, M. 1981 British Journal of Clinical Pharmacology 12:123-129

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
7521 Blood		GC TLC UV GC/MS Enzymatic	a) 1 b) 1	a) 1.2-9.4 mg/l b) 0-0.1 mg/l	a) Not given b) Not given	a) Dose probably less than toxic amount b) Patient denied taking drug Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases. Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7522 Blood, plasma	Ingestion	HPLC	a) 1 b) 1	a) 1.30-0.040 ug/ml b) 0.046-0.11 ug/ml c) 1.30-0.053 ug/ml d) 0.056-0.10 ug/ml	a) Not applicable b) Not applicable c) Not applicable d) Not applicable	a) 0.5 and 48 hr, <0.040 ug/ml at 60 hr, UV detector b) 0.5 and 60 hr (N-Desmethylchlordiazepoxide), UV detector c) 0.5 and 48 hr, <0.050 ug/ml at 60 hr, reductive amperometric detector d) 0.5 and 60 hr (N-Desmethylchlordiazepoxide), reductive amperometric detector After 10 mg dose (plus 25 mg amitriptyline) twice daily BLOOD PLASMA; DRUGS; MEASUREMENT METHODS	Hackman, M.R. Brooks, M.A. 1981 Journal of Chromatography 222:179-190

4(3H)-Quinazolinone, 2-methyl-3-o-tolyl- (8 CI)
4(3H)-Quinazolinone, 2-methyl-3-(2-methylphenyl)- (9 CI)
72-44-6
C16-H14-N2-O
MW 250.29, MP 120 C, also given as 114-116 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7523 Blood		GC/MS UV	3	Not detected-19 mg/l	Not given	Suicide victims. Dose unknown. AUTOPSIES; SUICIDE; BLOOD; LIVER; URINE; DRUG ABUSE; DRUGS; METABOLITES; SWEDEN	Bonnichsen, R. Marde, Y. Ryhage, R. 1974 Clinical Chemistry 20(2):230-235
7524 Blood	Injection Inhalation	RIA GC/MS	2	0.01-0.30 mg/dl	Not given	Suspected cocaine overdose fatalities 26 and 36 yr old, Los Angeles County, CA CALIFORNIA; AUTOPSIES; BILE; BLOOD; URINE; DRUG ABUSE; DRUGS; NARCOTICS; FORENSIC MEDICINE; INHALATION	Nakamura, G.R. Noguchi, T.T. 1981 Clinical Toxicology 18(8):895-905

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						[illegible] 1977-198[illegible] [illegible] [illegible] yr olds (mean 2[illegible] yr, [illegible] Depressed level of consciousness [illegible] levels >[illegible] mg/l. Tachycardia, dysarthria, hyporeflexia, nystagmus, mydriasis, ataxia CALIFORNIA; BLOOD SERUM; DRUG ABUSE; DRUGS; HYPNOTICS, SEDATIVES	[illegible] Analysis Toxicology 5:27[illegible]
752[illegible] Liver		GC/MS UV	[illegible]	Not detected-84 mg/kg	Not given	Suicide victims. Dose unknown. AUTOPSIES; SUICIDE; BLOOD; LIVER; URINE; DRUG ABUSE; DRUGS; METABOLITES, SWEDEN	Bonnichsen, R. Marde, Y. Ryhage, R. 1974 Clinical Chemistry 20(2):230-235
7527 Urine		GC/MS UV	3	16-45 mg/l	Not given	Suicide victims. Dose unknown. AUTOPSIES; SUICIDE; BLOOD; LIVER; URINE; DRUG ABUSE; DRUGS; METABOLITES	Bonnichsen, R. Marde, Y. Ryhage, R. 1974 Clinical Chemistry 20(2):230-235
7528 Urine	Ingestion	GC	a) 1 b) 1 c) 1 d) 1 e) 1	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 35.01 mg b) 67.17 mg c) 35.28 mg d) 84.20 mg e) 80.50 mg	a) 24 hr cumulative excretion after 300 mg b) Same as a) c) Same as a) d) 24 hr cumulative excretion after last dose (2 300 mg tablets taken 24 hr apart) e) Same as d) Total for 5 metabolites. Data also given for individual metabolites. 2-methyl-3-[2-(hydroxymethyl)phenyl]-4(3H)-quinazolinone, and 2-methyl-3-(2-methyl-4-hydroxyphenyl)-4(3H)-quinazolinone were the principal metabolites Health volunteers Drowsiness began 45 min after ingestion and persisted 3 hr. Slurred speech in some individuals. URINE; DRUGS; NARCOTICS; TRANQUILIZERS; METABOLITES	Kazyak, L. Kelley, J.A. Cella, J.A. Droege, R.E. Hilpert, L.R. Permisohn, R.C. 1977 Clinical Chemistry 23(11):2001-2006
752[illegible] Urine	Ingestion	GC/MS	[illegible]	a) [illegible]-0.28% of dose b) 24-44% of dose	a) Not given b) Not given	a) Unmetabolized [illegible] b) 5 metabolites 70 hr cumulative output after 200-400 mg dose Data also given for individual metabolite Estimated from graph 27-52 yr old volunteer URINE; DRUGS; HYPNOTICS, METABOLITES	Ericsson, [illegible] Danielsson, [illegible] 197[illegible] Drug Metabolism and Disposition 5(6):49[illegible]-5[illegible]
753[illegible] Urine	Ingestion			0.57-0.16 ug/ml	Not given	[illegible] and 2[illegible] hr after 250 mg a hydrochloride Healthy volunteer URINE; DRUG	Tilstone, [illegible] Reavey, [illegible] 197[illegible] Clinical Pharmacology and Therapeutics [illegible]

4-Oxa-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 3-(2-hydroxyethylidene)-7-oxo-, (2R-(2alpha,3Z,5alpha))-
58001-44-8
C8-H9-N-O5
MW 199.18

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7531 Blood, serum	Ingestion	Microbiological	21	4.3-0.5 mg/l	Not applicable	and 5 hr after 250 mg, oral. Initial measurement 4.5 mg/l at 0.5 hr Range of means, estimated from graph BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS	Munch, R. Luthy, R. Blaser, J. Siegenthaler, W. 1981 Journal of Antimicrobial Chemotherapy 8:29-37
7532 Cerebrospinal fluid	Ingestion	Microbiological		a) 0.4-2.0 mg/l b) 0.2-0.5 mg/l	a) Not given b) Not given	a) 0.5 and 4 hr after 250 mg. Final measurement 1.8 mg/l at 5 hr b) 2 and 4 hr after 250 mg Estimated from graph BLOOD SERUM; CEREBROSPINAL FLUID; DRUGS	Munch, R. Luthy, R. Blaser, J. Siegenthaler, W. 1981 Journal of Antimicrobial Chemotherapy 8:29-37

4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-(2-amino-2-(p-hydroxyphenyl)acetamido)-3,3-dimethyl-7-oxo-, 9- (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
7533 Bile	Injection	Microbiological	22	a) 3.7-7.8 u/ml b) 0.6-1.4 u/ml c) 9.0-22.5 u/ml d) 5.7-12.6 u/ml e) 7.5-14.0 u/ml	a) 5.2 +or- 0.7 u/ml b) 0.9 +or- 0.2 u/ml c) 13.2 +or- 1.2 u/ml d) 8.7 +or- 1.3 u/ml e) 10.9 +or- 1.1 u/ml	a) Cholecystic bile, cystic duct open, 70-110 min, 6 cases b) Cholecystic bile, cystic duct closed, 70-110 min, 4 cases c) Choledochal bile, 70-110 min, 10 cases d) Cholecystic bile, cystic duct open, 120-160 min, 5 cases e) Choledochal bile, 120-160 min, 5 cases Times after 1 g, IM Samples taken during surgery Serum, bile, and tissue levels 2X higher than with similar dose of ampicillin 22-69 yr old patients, wt 45-77 kg ADULTS; INFECTIONS; BILE; BLOOD SERUM; GALL BLADDER; LIVER; LUNGS; ANTIBIOTICS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; SURGERY	Kiss, I.J. Farago, E. Schnitzler, J. Varhelyi, I. 1981 International Journal of Clinical Pharmacology, Therapy and Toxicology 19(2):67-74
7534 Blood, serum	Injection	Microbiological	a) 9 b) 10 c) 3 d)	a) 3.0-17.2 mg/ml b) 3.3-14.3 mg/ml c) 3.0-3.2 mg/ml d) 2.4-12.3 mg/ml	a) 11.7 +or- 1.6 mg/ml b) 6.7 +or- [illegible] mg/ml c) 1. +or- 0.4 mg/ml d) +or- [illegible]	a) Lung operations, 30-110 min b) Lung operations, 20-160 min c) Biliary operations, 70-110 min d) Biliary operations, 120-160 min Times after 1 g, IM Surgical samples Serum, bile, and tissue levels 2X higher than similar dose of [illegible]	Kiss, I.J. Farago, E. Schnitzler, J. Varhelyi, I. 1981 International Journal of Clinical Pharmacology, Therapy [illegible]

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)

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7535 Gall bladder	Injection	Microbiological	a) 11 b) 9	a) 3.0-7.0 ug/ml b) 0.6-6.8 ug/ml	a) 5.1 +or- 0.4 ug/ml b) 4.4 +or- 0.6 ug/ml	a) 70-110 min b) 120-160 min Times after 1 g, IM Surgical sample of gallbladder wall Serum, bile, and tissue levels 2X higher than with similar dose of ampicillin 22-69 yr old patients, wt 45-77 kg ADULTS; INFECTIONS; BILE; BLOOD SERUM; GALL BLADDER; LIVER; LUNGS; ANTIBIOTICS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; SURGERY	Kiss, I.J. Farago, E. Schnitzler, J. Varhelyi, I. 1981 International Journal of Clinical Pharmacology, Therapy and Toxicology 19(2):67-74
7536 Liver	Injection	Microbiological	a) 13 b) 6	a) 0.5-6.6 ug/g b) 0.4-2.6 ug/g	a) 2.8 +or- 0.5 ug/g b) 1.7 +or- 0.3 ug/g	a) 70-110 min b) 120-160 min Times after 1 g, IM Surgical samples Serum, bile, and tissue levels 2X higher than with similar dose of ampicillin 22-69 yr old patients, wt 45-77 kg ADULTS; INFECTIONS; BILE; BLOOD SERUM; GALL BLADDER; LIVER; LUNGS; ANTIBIOTICS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; SURGERY	Kiss, I.J. Farago, E. Schnitzler, J. Varhelyi, I. 1981 International Journal of Clinical Pharmacology, Therapy and Toxicology 19(2):67-74
7537 Lung	Injection	Microbiological	19	a) 2.4-10.0 ug/g b) 1.0-6.4 ug/g c) 1.6-7.4 ug/g d) 0.5-2.2 ug/g	a) 5.6 +or- 0.8 ug/g b) 3.9 +or- 1.8 ug/g c) 4.4 +or- 0.5 ug/g d) 1.5 +or- 0.3 ug/g	a) 9 cases normal lung tissue, 60-110 min b) 5 cases tumorous lung tissue, 60-110 min c) 10 cases normal lung tissue, 120-160 min d) 5 cases tumorous lung tissue, 120-160 min Times after 1 g, IM Surgical samples Serum, bile, and tissue levels 2X higher than with similar dose of ampicillin 22-70 yr old patients, wt 54-80 kg ADULTS; INFECTIONS; BILE; BLOOD SERUM; GALL BLADDER; LIVER; LUNGS; ANTIBIOTICS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; SURGERY	Kiss, I.J. Farago, E. Schnitzler, J. Varhelyi, I. 1981 International Journal of Clinical Pharmacology, Therapy and Toxicology 19(2):67-74

4,4'-Stilbenediol, alpha,alpha'-diethyl-, (E)- (8 CI)
Phenol, 4,4'-(1,2-diethyl-1,2-ethenediyl)bis-, (E)- (9 CI)
56-53-1
C18-H20-O2
MW 268.34, MP 172 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7538 Blood, plasma	Ingestion	RIA GC/MS	2	a) 1.2-2.4 ng/ml b) 0.4-1.5 ng/ml c) 0.7-2.7 ng/ml	a) Not given b) Not given c) Not given	a) 1.5-2 hr after first of three 1 mg doses/day b) Secondary peaks at about 5-6 hr c) 1.5-2 hr after second dose Range of peaks, estimated from graph Plasma testosterone levels low in 4 of 5 patients Patients with cancer of the prostate NEOPLASMS; BLOOD PLASMA; DRUG THERAPY; DRUGS; HORMONES; CHEMOTHERAPY; MEASUREMENT METHODS;	Kemp, H.A. Read, G.F. Riad-Fahmy, D. Pike, A.W. Gaskell, S.J. Queen, K. Harper, M.E. Griffiths, K. 1981 Cancer Research 41:4693-4697

4,6(1H,5H)-Pyrimidinedione, 5-ethyldihydro-5-phenyl-
125-33-7
C12-H14-N2-O2
MW 218.25, MP 281-282 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7539 Blood, plasma	Ingestion	GC	1	a) 96.5-0 mg/l b) 53-18 mg/l	a) Not given b) Not given	a) 90 min and 96 hr b) 96 and 264 hr. Initial measurement, 28.5 mg/l at about 90 min. Metabolite (phenobarbital) Overdose of 50 250-mg Mysoline tablets and 100 100-mg Dilantin capsules. 26 yr old epilepsy patient Lethargic, atoxic and dysarthric in Stage II coma. Borderline intraventricular conduction delay and a sinus tachycardia (110 beat per min). SUICIDE; BLOOD PLASMA; ANTICONVULSANTS; DRUG ABUSE; DRUGS	Matzke, G.R. Cloyd, J.C. Sawchuk, R.J. 1981 Journal of Clinical Pharmacology 21:92-99
7540 Blood, serum	Ingestion	GC	19	a) 5.0-13.4 mg/l b) 3.3-34.6 mg/l c) 1.4-9.9 mg/l d) 1.4-11.2 mg/l e) 9.4-22.9 mg/l f) 2.7-14.1 mg/l	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Primidone, 10 cases b) Phenobarbital, 10 cases c) Phenylethylmalonamide, 10 cases d) Primidone, 9 cases e) Phenobarbital, 9 cases f) Phenylethylmalonamide, 9 cases Steady state values after initial 250 mg dose and 75-250 mg/8 hr maintenance regimen Monotherapy (a-c) and combination therapy with other antiepileptic drugs (d-f) 17-69 yr old seizure patients ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; ANTICONVULSANTS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; METABOLITES	Cloyd, J.C. Miller, K.W. Leppik, I.E. 1981 Clinical Pharmacology and Therapeutics 29(3):402-407

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..6(1H,5H)-Pyrimidinedione, 5-ethyldihydro-5-phenyl-
125-33-7
C12-H14-N2-O2
MW 218.25, MP 281-282 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7541 Blood, serum	Ingestion	GC	a) 10 b) 9	a) 4.8-2.5 mg/l b) 4.5-1.2 mg/l	a) Not given b) Not given	a) 4 and 24 hr after 250 mg. Initial measurement 2.6 mg/l at 1 hr. Monotherapy patients b) 4 and 24 hr after 250 mg. Initial measurement 2.5 mg/l at 1 hr. Combination therapy patients Range of means, estimated from graph 17-69 yr old seizure patients ADULTS; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; ANTICONVULSANTS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; METABOLITES	Cloyd, J.C. Miller, J.W. Leppik, I.E. 1981 Clinical Pharmacology and Therapeutics 29(3):402-407

5-Oxa-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((carboxy(4-hydroxyphenyl)acetyl)amino)-7-methoxy-3-(((1-methyl-1H-tetrazol-5- yl)thio)methyl)-8-oxo-
64952-97-2
C20-H20-N6-O9-S
MW 520.52

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7542 Blood, serum	Injection	HPLC	14	a) 195-29.5 ug/ml b) 214-28.8 ug/ml	a) Not given b) Not given	a) 2 g dose b) 3 g dose Mean peak and trough steady state concentrations (dose once every 8 hr) Patients with bacterial infections INFECTIONS; BLOOD SERUM; ANTIBIOTICS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS	Garzone, P. Lyon, J. Yu, V.L. Zuravleff, J. Diven, W. Pasculle, W. 1981 Clinical Pharmacology and Therapeutics 30(1):86-94

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-7-(((2-amino-4-thiazolyl)(methoxyimino)acetyl)amino)-8-oxo -, (6R-trans)-
60846-21-1
C16-H17-N5-O7-S2

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7543 Blood, serum		Microbiological	12	a) 4-45 ug/ml b) 3-9 ug/ml c) 2.8-3 ug/ml	a) Not given b) Not given c) Not given	a) 1-2 hr b) 3-4 hr c) 4-5 hr Dose 150-200 mg/kg/24 hr Infants and children to 11 mo old with bacterial meningitis. CHILDREN; INFANTS; INFECTIONS; CEREBROSPINAL FLUID; ANTIBIOTICS; DRUG THERAPY; DRUGS	Borderon, J.C. Prieur, D. Hoquet, B. 1981 La Nouvelle Press Medicale 10(8):580-584
7544 Cerebrospinal fluid	Injection	Microbiological	12	a) 3-19 ug/ml b) 2-11 ug/ml c) 1.8-14.3 ug/ml d) 0.25-0.45 ug/ml	a) Not given b) Not given c) Not given d) Not given	a) 1-2 hr b) 3-4 hr c) 4-5 hr d) 5-6 hr Dose 150 or 200 mg/kg/24 hr Infants and children to 11 mo old with bacterial meningitis. CHILDREN; INFANTS; INFECTIONS; CEREBROSPINAL FLUID; ANTIBIOTICS; DRUG THERAPY; DRUGS	Borderon, J.C. Prieur, D. Hoquet, B. 1981 La Nouvelle Press Medicale 10(8):580-584

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-(((2-(aminomethyl)phenyl)acetyl)amino)-3-(((1-(carboxyaethyl)-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
7545 Blood, serum	Injection	Microbiological	29	a) 44.7 +or- 3.0 - 51.5 +or- 3.8 ug/ml b) 7.6 +or- 1.2 - 9.4 +or- 1.1 ug/ml c) 91.8 +or- 18.2 - 73.4 +or- 1 ug/ml d) 5.6 +or- 1.6 - 6.5 +or- 2.2 ug/ml e) 33-56 ug/ml f) 22-64 ug/ml	a) Not given b) Not given c) Not given d) Not given e) 42.7 ug/ml f) 42.8 ug/ml	a) Mean peaks at end of infusion, day 1 and day 3 or 4. Dose, 30 min IV of 500 mg, every 6 hr, 10 patients b) Mean trough levels 6 hr after infusion, day 1 and day 7 or 8. Dose as in a) c) Mean peaks at end of infusion, day 1 and day 7 or 8. Dose, 30 min IV of 1 g, every 12 hr, 10 patients d) Mean trough levels 12 hr after infusion, day 7 or 8 and day 3 or 4. Dose as in c) e) After 30 min IV of 500 mg (loading dose) followed by continuous infusion of 500 mg, 4 hr IVs. A.M. samples on day 3 or 4 f) Dose as in e). A.M. samples on day 7 or 8 Minimum inhibitory concentration for sensitive organisms obtained with either 500 mg, IV, every 6 hr, or 1 gm, IV, every 12 hr. No evidence of drug cumulation. Cancer patients, 17-71 yrs old, wt 42-120 kg CARCINOMAS; SARCOMAS; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS	Estey, E.H. Weaver, S.S. LeBlanc, B.M. Brown, N. Ho, D.H. Bodey, G.P. 1981 Clinical Pharmacology and Therapeutics 30(3):398-403
7546 Urine	Injection	Microbiological	29	266-3213 ug/ml	1315.8 +or- 347.7 ug/ml	6 hr after 1 g IV, over 30 min, 23%-67% (mean 55%) of dose Cancer patients, 17-71 yr old, wt 42-120 kg CARCINOMAS; SARCOMAS; BLOOD SERUM; URINE; ANTIBIOTICS; DRUG THERAPY; DRUGS	Estey, E.H. Weaver, S.S. LeBlanc, B.M. Brown, N. Ho, D.H. Bodey, G.P. 1981 Clinical Pharmacology and Therapeutics 30(3):398-403

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*)))-
34444-01-4
C18-H18-N6-O5-S2
MW 462.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7547 Cerebrospinal fluid	Injection	Microbiological	55	a) 1.3-4.8 ug/ml b) 0.1-0.8 ug/ml	a) 3.14 ug/ml b) 0.28 ug/ml	a) 1 and 4 hr. Final measurement 4.3 ug/ml at 6 hr. Patients with meningeal inflammation b) 2 and 2.5 hr. Final measurement 0.2 ug/ml at 6 hr. Patients without meningeal inflammation Dose 100 mg/kg (1800-2500 mg/sq m body surface) Range of means Newborn-14 yr old children CHILDREN; CENTRAL NERVOUS SYSTEM DISEASES; INFECTIONS; CEREBROSPINAL FLUID; ANTIBIOTICS; DRUG THERAPY; DRUGS	Walker, H. Gahol, P. Villanueva, R. Ionides, P. 1981 Drugs in Experimental Clinical Research 7(2):81-84

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
7548 Blood, plasma	Ingestion	HPLC	35	a) 1.11-16.51 mg/l b) 0.60-3.83 mg/l	a) Not given b) Not given	a) Carbamazepine (CMZ) b) Carbamazepine-10,11-epoxide(CMZEPOX), metabolite 5.4-242.2% of CMZ present as CMZEPOX. Dose 0.3-2.0 g/day CMZ Epileptic patients AUSTRALIA; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANTICONVULSANTS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Mihaly, G.W. Phillips, J.A. Louis, W.J. Vajda, F.J. 1977 Clinical Chemistry 23(12):2283-2287
7549 Blood, plasma	Ingestion	HPLC	1	a) 27-7 mg/l b) 4->1 mg/l	a) Not given b) Not given	a) At admission to hospital and 166 hr later. 18 mg/l at 24 hr and 27 mg/l at about 36 hr b) 36 and 120 hr after admission. Initial measurement 3 mg/l. Carbamazepine epoxide Accidental overdose (amount unknown) about one day before admission 85 yr old Stuporous, unable to verbalize, unresponsive to painful stimuli, neurologically abnormal CALIFORNIA; NERVOUS SYSTEM DISEASES; BLOOD PLASMA; ANALGESICS; ANTICONVULSANTS; DRUG THERAPY; DRUGS; METABOLITES	Rockoff, S. Baselt, R.C. 1981 Clinical Toxicology 18(8):935-939

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
7550 Blood, plasma	Ingestion	GC/MS	12	a) 4.5-51.5 ng/ml b) 62-407 ng/ml	a) Not given b) Not given	a) 24 hr after 50 mg b) Steady state levels at 150 mg/day Significant correlation between 24 hr and steady state levels 22-41 yr old physically healthy patients with depressive symptoms. BEHAVIOR DISORDERS; BLOOD; ANTIDEPRESSIVE AGENTS; DRUG THERAPY; DRUGS	Rudorfer, M.V. Young, R.C. 1980 Communications in Psychopharmacology 4:185-188

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)
SC-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
7551 Blood		GC TLC UV GC/MS Enzymatic	1	05.-1.0 mg/l	Not given	Dose probably sufficient to contribute to signs and symptoms Results from 4 laboratories receiving identical samples for toxic screen Overdose drugs identified in 50%-70% of cases Laboratories agreed on 6 of 23 drugs reported present in serum of 20 patients Levels were variable and appeared imprecise. Probable drug overdose patients, Boston, MA MASSACHUSETTS; BLOOD; ANALGESICS; ANTICONVULSANTS; ANTIDEPRESSIVE AGENTS; ANTIPYRETICS; DRUG ABUSE; DRUGS; HYPNOTICS; NARCOTICS; SEDATIVES; TRANQUILIZERS; COMPARATIVE EVALUATIONS; ALCOHOLS; MEASUREMENT METHODS	Ingelfinger, J.A. Isakson, G. Shine, D. Costello, C.E. Goldman, P. 1981 Clinical Pharmacology and Therapeutics 29(5):570-575
7552 Blood		GC	1	a) Not applicable b) Not applicable	a) 0.05 mg% b) 0.02 mg%	a) XAD-2 resin extraction b) Solvent extraction Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162
7553 Blood		GC UV	1	a) Not applicable b) Not applicable	a) 0.02 mg/100g b) 0.05 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7554 Brain		GC	1	a) Not applicable b) Not applicable	a) 0.5 mg% b) 0.2 mg%	a) XAD-2 resin extraction b) Solvent extraction Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162
7555 Brain		GC UV	1	a) Not applicable b) Not applicable	a) 0.3 mg/100g b) 0.8 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82
7556 Liver		GC	1	a) Not applicable b) Not applicable	a) 1.2 mg% b) 0.4 mg%	a) XAD-2 resin extraction b) Solvent extraction Fatal poisoning AUTOPSIES; BLOOD; BRAIN; KIDNEYS; LIVER; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978a Archives of Toxicology 41:153-162

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7557 Liver		GC UV	1	a) Not applicable b) Not applicable	a) 0.5 mg/100g b) 1.6 mg/100g	a) Solvent extraction method b) XAD-2 resin bag extraction method Fatal overdose case Poland POLAND; BLOOD; BRAIN; LIVER; DRUG ABUSE; DRUGS; MEASUREMENT METHODS	Bogusz, M. Gierz, J. Bialka, J. 1978b Forensic Science International 12:73-82

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
7558 Blood, plasma	Ingestion	GC	3	a) 8.1-16 ng/ml b) 26-37 ng/ml c) 3.0-12 ng/ml	a) Not given b) Not given c) Not given	a) 2 hr after 75 mg b) Peak values at 6-8 hr after 75 mg c) Final measurements at 72 hr after 75 mg Healthy volunteers < 40 yr old ADULTS; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; DRUGS; METABOLITES	Burch, J.E. Hullin, R.P. 1981a Psychopharmacology 74:35-42

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
7559 Bile	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 13.9 ug/ml b) 8.88 ug/ml	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7560 Blood	Ingestion	TLC	32	a) 0.06-11.20 ug/ml b) Not detected-8.60 ug/ml	a) 2.23 +or- 2.74 ug/ml b) 1.20 +or- 2.03 ug/ml	a) Parent compound b) Metabolite (nortriptyline) Suicide victims, San Diego, CA AUTOPSIES; SUICIDE; BLOOD; HEART; LIVER; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Bailey, D.N. Shaw, R.F. 1980 Journal of Analytical Toxicology 4:232-236

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7561 Blood			7	0.04-0.73 mg/100 ml	Not given	Drug induced fatalities. Ethanol (2 cases, 0.02-0.15 g/100 ml), desipramine (1 case, 0.03 mg/100 ml), thioridazine (2 cases, 0.07-0.18 mg/100 ml), methadone (2 cases, 0.03 mg/100 ml), and carisoprodol (1 case, 0.2 mg/100 ml) also found. Autopsies, 1975-76, Los Angeles County, CA CALIFORNIA; AUTOPSIES; CASE HISTORIES; BLOOD; DRUG ABUSE; DRUGS; FORENSIC MEDICINE; ALCOHOLS	Nakamura, G.R. Noguchi, T.T. Griesemer, E.C. 1979 Journal of Analytical Toxicology 3:137-142
7562 Blood, plasma	Ingestion	GC	6	a) 5.0-33 ng/ml b) 14-39 ng/ml c) 0.9-3.3 ng/ml d) 2.1-4.8 ng/ml e) 4.5-14 ng/ml f) 1.3-6.4 ng/ml g) 5.5-66 ng/ml h) 36-75 ng/ml i) 1.8-9.5 ng/ml j) 1.0-9 ng/ml k) 8-25 ng/ml l) 3.4-19 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 i) Not given j) Not given k) Not given l) Not given	a) Initial measurements at 2 hr after 50 mg b) Peak values at 3-4 hr after 50 mg c) Final measurements at 72 hr after 50 mg d) Metabolite (nortriptyline). Initial measurements at 2-3 hr after 50 mg e) Metabolite (nortriptyline). Peak values at 4-24 hr after 50 mg f) Metabolite (nortriptyline). Final measurements at 72 hr after 50 mg g) Initial measurements at 1-2 hr after 100 mg h) Peak values at 2-4 hr after 100 mg i) Final measurements at 48-72 hr j) Metabolite (nortriptyline). Initial measurements at 2-3 hr after 100 mg k) Metabolite (nortriptyline). Peak values at 4-12 hr after 100 mg l) Metabolite (nortriptyline). Final measurements at 48-72 hr after 100 mg Healthy volunteers < 40 yr old ADULTS; BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; DRUGS; METABOLITES	Burch, J.E. Hullin, R.P. 1981a Psychopharmacology 74:35-42
7563 Blood, plasma	Ingestion	GC	6	a) 15-73 ng/ml b) 1.5-9.2 ng/ml c) 5.6-28 ng/ml d) 4.4-15 ng/ml	a) Not given b) Not given c) Not given d) Not given	a) Peak levels at 4-12 hr. Initial measurements 1.0-19 ng/ml at 1-3 hr b) Final measurements for a) at 48-72 hr c) Peak levels at 8-48 hr. Nortriptyline (metabolite). Initial measurements 1.5-7.7 ng/ml at 3-8 hr d) Final measurements for c) at 48-72 hr Dose, 100 mg sustained release tablet BLOOD PLASMA; ANTIDEPRESSIVE AGENTS; DRUGS; METABOLITES; UNITED KINGDOM	Burch, J.E. Hullin, R.P. 1981b Psychopharmacology 74:43-50

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7564 Blood, plasma	Ingestion	GC	1	a) 1070-380 ng/ml b) 350-450 ng/ml c) Not applicable d) Not applicable	a) Not given b) Not given c) 0.25 ug/ml d) 0.58 ug/ml	a) Estimated 10 and 30 hr after overdose. 410 ng/ml at 42 hr b) Estimated 15 and 30 hr after overdose. 400 ng/ml at 42 hr. Metabolite (nortriptyline) c) Autopsy sample (death about 45 hr after overdose) d) Autopsy sample. Metabolite (nortriptyline) Estimated from graph Dose and time of ingestion not known. 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7565 Brain	Ingestion	GC	1	a) 6.4-8.5 ug/g b) 18.6-25.8 ug/g	a) Not given b) Not given	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples, dose unknown. Range for different areas of brain 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7566 Cerebrospinal fluid	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 0.55 ug/ml b) 1.40 ug/ml	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7567 Heart	Ingestion	TLC	32	a) 0.09-48.10 ug/g b) Not detected-40.02 ug/g	a) 11.29 +or- 16.25 ug/g b) 6.41 +or- 9.42 ug/g	a) Parent compound b) Metabolite (nortriptyline) Suicide victims, San Diego, CA AUTOPSIES; SUICIDE; BLOOD; HEART; LIVER; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Bailey, D.N. Shaw, R.F. 1980 Journal of Analytical Toxicology 4:232-236

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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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7568 Heart	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 2.7 ug/g b) 9.6 ug/g	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardicpulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; SEMINAL VESICLES	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7569 Kidney	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 2.9 ug/g b) 8.2 ug/g	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardicpulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; SEMINAL VESICLES	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7570 Liver	Ingestion	TLC	32	a) 0.15-243.00 ug/g b) Not detected-456.00 ug/g	a) 62.24 +or- 71.47 ug/g b) 44.93 +or- 89.28 ug/g	a) Parent compound b) Metabolite (nortriptyline) Suicide victims, San Diego, CA AUTOPSIES; SUICIDE; BLOOD; HEART; LIVER; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; FORENSIC MEDICINE	Bailey, D.N. Shaw, R.F. 1980 Journal of Analytical Toxicology 4:232-236
7571 Liver	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 1.7 ug/g b) 3.0 ug/g	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; SEMINAL VESICLES	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125

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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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7572 Pituitary	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 3.8 ug/g b) 13.8 ug/g	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7573 Seminal vesicle	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 3.8 ug/g b) 1.4 ug/g	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS; SEMINAL VESICLES	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125
7574 Vitreous humor	Ingestion	GC	1	a) Not applicable b) Not applicable	a) 0.05 ug/ml b) 0.06 ug/ml	a) Amitriptyline b) Metabolite (nortriptyline) Autopsy samples. Dose unknown 33 yr old suicide victim Elevated pulse and blood pressure, sinus tachycardia, coma, cardiopulmonary arrest. ADULTS; AUTOPSIES; SUICIDE; BILE; BLOOD PLASMA; BRAIN; CEREBROSPINAL FLUID; HEART; KIDNEYS; LIVER; PITUITARY GLAND; VITREOUS HUMOR; SEMINAL VESICLES; ANTIDEPRESSIVE AGENTS; DRUG ABUSE; DRUGS	Hurst, H.E. Jarboe, C.H. 1981 Clinical Toxicology 18(1):119-125

6,14-Ethenomorphinan-7-methanol, 17-(cyclopropylmethyl)-alpha-(1,1-dimethylethyl)-4,5-epoxy-18,19-dihydro-3-hydroxy-6-methoxy-alpha-methyl-, (5alpha,7alpha(S))-
52485-79-7
C29-H41-N-O4
MW 467.71

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7575 Blood, plasma	Injection	RIA	24	a) 18.62-0.37 ng/ml b) 14.62-0.38 ng/ml c) 3.61-0.36 ng/ml	a) Not given b) Not given c) Not given	a) 2 and 180 min after 0.3 mg, intraoperatively, IV b) 2 and 180 min after 0.3 mg, postoperatively, IV, given 180 min after the initial intraoperative dose (10 subjects) c) 5 and 180 min after 0.3 mg, postoperatively IM, given 180 min after initial intraoperative dose (11 subjects). Initial measurement 3.56 ng/ml at 2 min. Hospital patients undergoing total hip replacement surgery. BLOOD PLASMA; ANALGESICS; DRUG THERAPY; DRUGS; NARCOTICS; SURGERY	Bullingham, R.E.S. McQuay, H.J. Moore, A. Bennett, M.R.D. 1980 Clinical Pharmacology and Therapeutics 28(5):667-672

6H-Dibenzo(b,d)pyran-1-ol, 6a,7,8,10a-tetrahydro-6,6-9-trimethyl-3-pentyl-, (6aR-trans)-
1972-08-3
C21-H30-O2
MW 314.45

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7576 Blood, plasma	Injection Ingestion Inhalation	GC/MS	11	a) 220-4 ng/ml b) 80-2 ng/ml c) 6-1.5 ng/ml	a) Not given b) Not given c) Not given	a) 3 and 240 min after 5 mg IV b) 3 and 240 min after 19 mg cigarette c) 60 and 360 min after 20 mg oral. Initial measurement 3 ng/ml at 30 min Relationship to degree of intoxication closest for c) Range of means, estimated from graph 18-35 yr old volunteers Reddened conjunctivae, increased pulse rate ADULTS; BLOOD PLASMA; DRUGS; PSYCHOTROPIC DRUGS; COMPARATIVE EVALUATIONS	Hollister, L.E. Gillespie, H.K. Ohlsson, A. Lindgren, J.E. Wahlen, A. Agurell, S. 1981 Journal of Clinical Pharmacology 21:171S-177S

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6H-Dibenzo(b,d)pyran-1-ol, 6a,7,8,10a-tetrahydro-6,6-9-trimethyl-3-pentyl-, (6aR-trans)-
1972-08-3
C21-H30-02
MW 314.45

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7577 Blood, plasma	Injection Ingestion Inhalation	GC/MS TLC		a) 0.8-9.3 ng/ml b) 1.0-8.8 ng/ml c) 0.2-62 ng/ml d) 0.1-3.4 ng/ml e) 2.0-0.025% of dose f) 0.12-0% of dose	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 45 and 360 min after 20 mg oral. Final measurement 1.3 ng/ml at 1440 min (6 subjects) b) 45 and 360 min after 20 mg oral. Metabolite, 11-hydroxy-delta-9 tetrahydrocannabinol (11-OH-THC). Final measurement 1.1 ng/ml at 1440 min. Other metabolites totaled 128 ng/ml (same subjects as a)) c) Initial level and 20 min after 25 min IV of 4-5 mg. 2.4 ng/ml at 4320 min (7 subjects) d) Initial level and 25 min after 25 min IV of 4-5 mg. 0.2 ng/ml at 4320 in. Metabolite (11-OH-THC). Other metabolites totaled about 17 ng/ml at 20 min (same subjects as c)) e) 5 and 1440 min after 6.8 mg, from smoking f) 20 and 1440 min after 6.8 mg, from smoking. Metabolite (11-OH-THC). Other metabolites acocunted for 2-4% of dose Range of means. e) and f) estimated from graph. BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS; INHALATION; METABOLISM; METABOLITES	Wall, M.E. Perez-Reyes, M. 1981 Journal of Clinical Pharmacology 21:1785-1895
7578 Blood, plasma	Inhalation	GC/MS	11	37.5-1.9 ng/ml	Not given	0.25 and 24 hr after smoking cigarette containing 10.8 mg. Initial measurement 3.8 ng/ml Range of means Healthy 21-26 yr olds BLOOD PLASMA; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Valentine, J.L. Bryant, P.J. Gutshall, P.L. Gano, H.M. Lovegreen, P.D. Thompson, E.D. Niu, H.C. 1977 Journal of Pharmaceutical Sciences 66(4):1263-1266
7579 Blood, plasma		HPLC	6	a) 130-0.30 ng/ml b) 100-0.25 ng/ml	a) Not given b) Not given	a) At 5 and 1600 min before chronic oral dose, and following 2 min IV of 2 mg b) At 5 and 1600 min after chronic oral dose (20 or 30 mg every 4 hr for 12 days) and following 2 min IV of 2 mg Estimated from graph Healthy 22-30 yr olds, wt 66.2-83.7 kg. Smoked 11-40 marijuana cigarettes per week for 5.8 yr (average) ADULTS; BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS	Hunt, C.A. Jones, R.T. 1980 Journal of Pharmacology and Experimental Therapeutics 215(1):35-44
7580 Blood, plasma	Inhalation	RIA		a) 175-0 ng/ml b) 480-20 ng/ml	a) Not given b) Not given	a) 0.25 and 4 hr after 3 consecutive marihuana cigarettes b) 0.25 and 48 hr. Same study as a). Pre-intoxication level approximately 50 ng/ml. Metabolite (11-nor-9-carboxy-delta-9 tetra-hydrocannabinol Estimated from graph BLOOD PLASMA; SALIVA; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Gross, S.J. Soares, J.R. 1978 Journal of Analytical Toxicology 2:98-100

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6H-Dibenzo(b,d)pyran-1-ol, 6a,7,8,10a-tetrahydro-6,6-9-trimethyl-3-pentyl-, (6aR-trans)-
1972-08-3
C21-H30-O2
MW 314.45

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7581 Saliva		RIA		a) 90-35 ng/ml b) 67-25 ng/ml	a) Not given b) Not given	a) 0.25 and 4.5 hr after 3 marijuana cigarettes, each containing 19.8 mg. Final measurement, 50 ng/ml at 5.5 hr b) 0.25 and 3.5 hr. Same study as a) Metabolite (11-nor-9-carboxy-delta-9 tetrahydrocannabinol) BLOOD PLASMA; SALIVA; DRUGS; PSYCHOTROPIC DRUGS; MEASUREMENT METHODS	Gross, S.J. Soares, J.R. 1978 Journal of Analytical Toxicology 2:98-100
7582 Urine	Injection	GC/MS TLC	7	a) 5-1.2% of dose b) 3.5-0.7% of dose c) 1.5-0.5% of dose	a) Not given b) Not given c) Not given	a) Total cannabinoids b) Conjugated cannabinoids c) Free cannabinoids 24 and 72 hr after 4-5 mg IV BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS; INHALATION; METABOLISM; METABOLITES	Wall, M.E. Perez-Reyes, M. 1981 Journal of Clinical Pharmacology 21:1785-1895
7583 Urine	Injection Ingestion	HPLC	6	a) Not given b) Not given	a) 23.2 +or- 3.2% b) 17.5 +or- 3.3%	a) 96 hr output, before chronic oral dose and following 2 min IV of 2 mg b) After chronic oral dose (20 or 30 mg every 4 hr for 12 days) and following 2 min IV of 2 mg Healthy 22-30 yr olds, wt 66.2-83.7 kg. Smoked 11-40 marijuana cigarettes per week for 5.8 yr (average) ADULTS; BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS	Hunt, C.A. Jones, R.T. 1980 Journal of Pharmacology and Experimental Therapeutics 215(1):35-44

7H-Furo(3,2-g)(1)benzopyran-7-one, 4-methoxy-
484-20-8
C12-H8-O4
MW 216.18

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7584 Blood, serum	Ingestion	HPLC	a) 7 b) 3	a) 257-530 ug/l b) 61-152 ug/l	a) 406 +or- 103 ug/l b) 92 +or- 52 ug/l	a) 2.5-4 hr (mean 3.2 hr) after 1.2 mg/kg b) 2.5-3 hr (mean 2.8 hr) after 0.6 mg/kg Peak level Psoriasis patients, 24-69 yr old, wt 61-93 kg ADULTS; SKIN DISEASES; BLOOD SERUM; URINE; DRUG THERAPY; DRUGS	Stolk, L.M.L. Westerhof, W. Cormane, R.H. Van Zwieten, P.A. 1981 British Journal of Dermatology 105:415-420
7585 Urine	Ingestion	HPLC TLC	5	2.0-8.6 ug/24 hr	5.7 +or- 2.5 ug/24 hr	Dose 1.2 mg/kg. Not detected in 2 patients. Psoriasis patients, 24-69 yr old, wt 61-93 kg ADULTS; SKIN DISEASES; BLOOD SERUM; URINE; DRUG THERAPY; DRUGS	Stolk, L.M.L. Westerhof, W. Cormane, R.H. Van Zwieten, P.A. 1981 British Journal of Dermatology 105:415-420

9H-Dibenzo(b,d)pyran-9-one, 3-(1,1-dimethylheptyl)-6,6a,7,8,10,10a-hexahydro-1-hydroxy-6,6-dimethyl-, trans-(+)-
51022-71-0
C2[illegible]-H36-03
MW 372.60

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
7586 Blood, plasma	Injection Ingestion	TLC Radiometry	8	a) 40-0.3 ng Eq/ml b) 25-0.55 ng Eq/ml c) 1.8-0.7 ng Eq/ml d) 1.3-12 ng Eq/ml e) 0.7-1.7 ng Eq/ml f) 0.18-1.2 ng Eq/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Total radioactivity. 0 and 72 hr (5 subjects) b) Nabilone. 0 and 8 hr (2 subjects) c) Alcohol metabolite of nabilone. 0 and 4 hr (3 subjects) d) Total radioactivity. Initial measurement and 4 hr. 1.4 ng Eq/ml at 72 hr (2 subjects) e) Nabilone. 1 and 8 hr. Initial measurement 0.7 ng Eq/ml (2 subjects) f) Alcohol metabolite of nabilone. Initial measurement and 2 hr. 0.8 ng Eq/ml at 8 hr (2 subjects) Range of means, estimated from graph, after 0.5 mg (12 uCi) IV (a)-c)) or 2.0 mg (48 uCi) oral (d)-f)). Healthy 23-43 yr olds BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS; METABOLITES	Rubin, A. Lemberger, L. Warrick, P. Crabtree, R.E. Sullivan, H. Rowe, H. Obermeyer, B.D. 1977 Clinical Pharmacology and Therapeutics 22(1):85-91
7587 Urine	Injection Ingestion	TLC Radiometry	8	a) Not given b) Not given	a) 22% of dose b) 24% of dose	a) 7 day cumulative excretion after 0.5 mg (12 uCi) IV (5 subjects) b) Cumulative excretion after 2.0 mg (48 uCi) oral (2 subjects) Healthy 23-43 yr olds BLOOD PLASMA; URINE; DRUGS; PSYCHOTROPIC DRUGS; METABOLITES	Rubin, A. Lemberger, L. Warrick, P. Crabtree, R.E. Sullivan, H. Rowe, H. Obermeyer, B.D. 1977 Clinical Pharmacology and Therapeutics 22(1):85-91

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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 about 4400 pertinent documents of which approximately 2380 have been entered into the data base as of this report. These sources identify over 1000 chemicals that 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

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