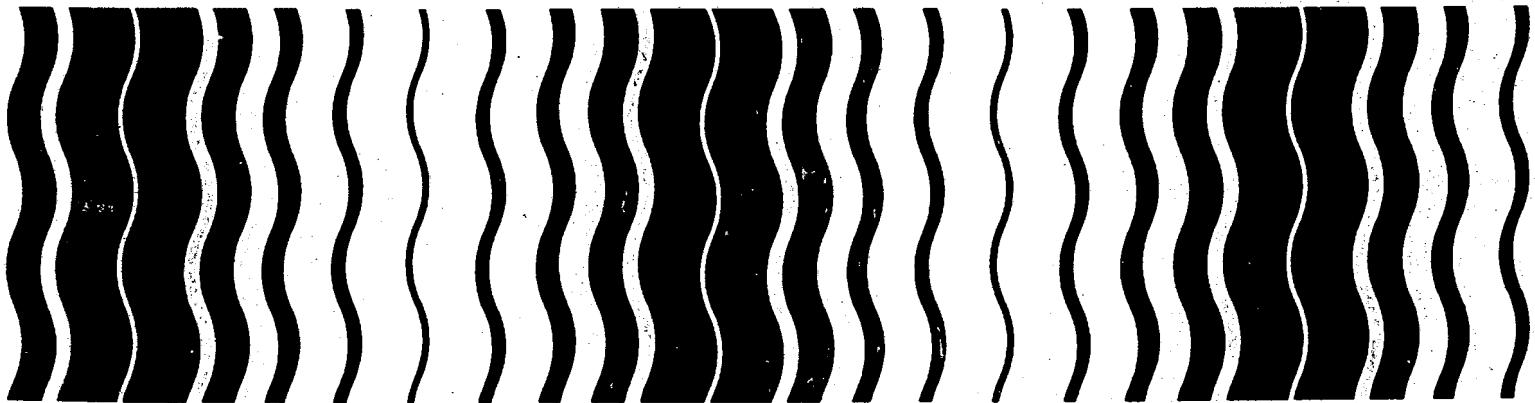


Pesticides and Toxic Substances



Chemicals Identified in Human Breast Milk

A Literature Search



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**CHEMICALS IDENTIFIED IN HUMAN BREAST MILK,
A LITERATURE SEARCH**

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TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	v
BACKGROUND ON THE COMPREHENSIVE DATA BASE	1
USERS' GUIDE	3
ABBREVIATIONS FOR ANALYTICAL METHODS	5
DATA TABLE	7
REFERENCES FOR DATA TABLE	93
INDICES	
CAS PREFERRED NAME INDEX	103
CAS REGISTRY NUMBER	107
CHEMICAL SYNONYM NAME	109
KEYWORD INDEX	122

INTRODUCTION

This computerized literature search for data on chemicals identified in human breast milk was accomplished for the Office of Toxic Substances' Exposure Evaluation Division, Environmental Protection Agency. These data were collected from a comprehensive human body-burden data base being developed under the direction of the Environmental Protection Agency and the National Cancer Institute. The comprehensive data base was searched for data on chemicals identified in four tissues--the mammary gland, milk, milk fat and whole milk.

This search is provided to aid in the planning stages of a National Human Milk Monitoring Study. An objective of this study will be to obtain national baseline estimates of certain chemicals in milk.

BACKGROUND ON THE COMPREHENSIVE DATA BASE

A comprehensive human body-burden data base has been established through the US Environmental Protection Agency/National Cancer Institute Collaborative Program. The objective of this effort is to provide a centralized source of information on chemicals that been identified in human biological media. Body-burden data are needed by the US government and domestic and foreign scientists involved in human health research.

Data were obtained primarily from the open literature through manual searches (retrospective to 1974) of approximately 85 journals. Data from almost 2400 of the 4400 body-burden documents collected to date have been entered in the data base as of October 1982. Over 1000 different chemicals were identified in human biological media from those sources.

The data base is published annually in tabular format with indices and chemical listings that allow specific searching. The file is now available online in the U.S. Department of Energy's RECON and in Lockheed's DIALOG. The fourth annual report, October 1982, of "Chemicals Identified in Human Biological Media: A Data Base" is available.

The comprehensive data was established under aegis of the Interagency Collaborative Group on Environmental Carcinogenesis (ICGEC), National Cancer Institute. Funding is through the National Cancer Institute-Environmental Protection Agency Collaborative Program. The work is being done by the Oak Ridge National Laboratory's Chemical Effects Information Center, Information Center Complex, through interagency agreements involving the National Cancer Institute, the Environmental Protection Agency, and the Department of Energy. Members of the ICGEC Task Group on Chemicals in Human Tissues provide support to the program's activities. Agencies represented by members of the task group include the Armed Forces Institute of Pathology, the Center for Disease Control, the Department of Agriculture, the Department of Energy, the Environmental Protection Agency, the Food and Drug Administration, the National Bureau of Standards, the National Cancer Institute, the National Center for Toxicological Research, the National Institute for Environmental Health Sciences, the National Institute for Occupational Safety and Health, and the National Library of Medicine.

To obtain additional information about the comprehensive data base and copies of the most recent annual report, write to:

Cindy Stroup, Project Officer
Design and Development Branch
Exposure Evaluation Division (TS-798)
Office of Toxic Substances
U.S. Environmental Protection Agency
401 M Street, SW
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USERS' GUIDE

The emphasis on including recent literature and significant research documents has resulted in a chronological mix of articles from 1974 to the present. When body-burden articles are identified, data are extracted and entered in the data base by chemical and tissue/body fluid. Each data entry comprises a single record (or line entry) and is assigned a record number. If a particular document deals with more than one chemical and/or tissue, there will be multiple records for that document. For example, a study of 5 chemicals in each of 3 tissues has 15 different records (or 15 line entries) in the data base with 15 record numbers. Record numbers are assigned consecutively throughout the entire data base and appear in the upper left corner of the first column for each record.

The data base is presented in tabular form by chemical, arranged alphabetically by Chemical Abstracts Service (CAS) preferred name. The chemical is given along with its CAS registry number, formula, atomic weight, melting point, boiling point, and vapor pressure. Tissues are listed alphabetically in the first column with the record number.

Information in the five columns- EXPOSURE ROUTE, ANALYTICAL METHOD, NUMBER OF CASES, RANGE, and MEAN- is self-explanatory and is provided when available in the source document. A list of abbreviations used for analytical method is provided on page 5. Exponential values are written as in the following examples: 5×10^{-15} is 5 x 10 (E-15). All means are arithmetic unless designated geometric. When included, standard error is indicated by S.E. However, values for standard deviations, when given, have no such designations. When only graphically displayed data were available, values have been estimated by the extractor and so indicated in the table under GENERAL INFORMATION.

In the column headed GENERAL INFORMATION, a variety of information may be included such as that pertinent to the range and mean as well as experimental design, demography, health effects, pathology, morphology, toxicity, source, half-life, and use. Keywords (in uppercase letters) are provided for further insight into important aspects of the source documents. The use of a different chemical or tissue as a keyword indicates that studies in that chemical or tissue were also reporting in the same document. In general, all supporting information deemed important for understanding the data presented will appear in this column.

Review articles are included in the data base; however, no data have been extracted from such documents since the original research articles are included. Review articles are designated in the GENERAL INFORMATION column by the word "Review."

ABBREVIATIONS FOR ANALYTICAL METHODS

AAS	Atomic absorption spectrometry
CC	Column chromatography
ES	Emission spectrometry
GC	Gas chromatography
GC-EC	Gas chromatography; electron-capture detection
GC/MS	Gas chromatography coupled with mass spectrometry
HPLC	High-pressure liquid chromatography
MS	Mass spectrometry
NA	Neutron activation
RIA	Radioimmunoassay
TLC	Thin-layer chromatography
UV	Ultraviolet analysis

DATA TABLE

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
1 Milk		CC GC/MS	a) 6 b) 9	a) 0.015-0.030 ppm b) 0.011-0.032 ppm	a) 0.022 ppm b) 0.018 ppm	a) New Brunswick women b) Nova Scotia women Six lactating mothers from New Brunswick and 9 from Nova Scotia. MILK; BREAST; CANADA; PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; LACTATION; POLYCHLORINATED BIPHENYLS; DDT; DDE	Nusial, C.J. Hutzinger, O. Zitko, V. Crocker, J. 1974 Bulletin of Environmental Contamination and Toxicology 12(3):256-267

Benzene, chloro-
108-90-7
C6-H5-Cl
BW 112.56, BP -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
2 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, H.D. Harris, B.S.H., III Pellizzari, E.D. Toner, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3 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 +/- 25.54 ng/ml b) 24.48 +/- 31.69 ng/ml c) 1.71 +/- 2.41 ng/ml d) 8 +/- 13.98 ng/ml e) 4.30 +/- 8.25 ng/ml f) 9.15 +/- 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. Toner, K.S. Waddell, P.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

Benzene, hexachloro-
118-74-1
C6-Cl6
HW 284.80, BP 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
4 Milk		TLC GC	a) 59 b) 15 c) 97	a) 1.0-17 ug/kg b) 2.4-31 ug/kg c) 1.4-7.2 ug/kg	a) 4.0 ug/kg b) 6.3 ug/kg c) 3.3 ug/kg	a) Nov 1971-Dec 1972 b) June-Nov 1974 c) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Nestoo, G. Noren, K. 1978 Ambio 7(2):62-64
5 Milk		GC	2	a) 9.0-10-7 ppb b) 3.7-4.1 ppb	a) Not given b) Not given	a) Sample 1 b) Sample 2 Repeated determinations PESTICIDES; CHLOROBENZENES; DDE; MILK	Brevik, E.H. 1978 Bulletin of Environmental Contamination and Toxicology 19:281-286

(NEXT PAGE)

Benzene, hexachloro-
118-74-1
C6-Cl6
MW 284.80, MP 231 C, BP 323-326 C, VP 1 mm Hg at 118.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
6 Milk		GC	2	0.09-0.23 ug	0.16 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLORO BENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; MONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
7 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-21 ng/g	a) 1 ng/g b) 1 ng/g c) 2 ng/g d) 1 ng/g e) 4 ng/g f) 2 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLORO BENZENE; HEXACHLOROCYCLOHEXANE; MILK; MONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
8 Milk		GC-EC GC/MS	10	1.6-17.1 ug/kg	5.9 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, S. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
9 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 5.5 + or - 3.7 ug/kg b) 9.2 + or - 4.0 ug/kg c) 2.7 + or - 1.0 ug/kg d) 3.2 + or - 1.2 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Forstrunn, non-industrialized fishing community 1976 survey. Significant difference (P < 0.05) between sampling sites: Bergen > Oslo > Harstad, Forstrunn Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.H. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
10 Milk			14	0-0.25 ppm	0.10 ppm	Collected in 1973, 1974 Ontario residents, mean age 24 yr. INDUSTRIAL CHEMICALS; CANADA; AGE; AUTOPSIES; ADIPOSE TISSUE; MILK; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDT; DIELDRIN; HEXACHLOROBENZENE; PESTICIDES; POLYCHLORINATED BIPHENYLS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Holdrinet, M.V.B. Braun, H.E. Frank, R. Stopps, G.J. Smout, H.S. McWade, J.W. 1977 Canadian Journal of Public Health 68:74-80
11 Milk		GC	50	18-63 ppb	40 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; MONOCHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, V. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
12 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 Martache, A. Pozolara, R. Lopez Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35(207-208):271-274
13 Milk, fat		GC-EC	33	Trace-5.13 ppm	0.091 ppm	1977-1978 study Patients at public health offices, Alberta, 17-309 days postpartum. 24 women lived in Edmonton. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Braun, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
14 Milk, whole		GC-EC	22	0.012-0.034 ppm	0.025 ppm	Survey, Western Australia, 1970-1971 22 nursing mothers, wt 46-66 kg, living within a 30 mi radius of Perth, Western Australia MILK; PESTICIDES; AUSTRALIA; DDT; DDE; DIELDRIN; HEXACHLOROBENZENE	Stacey, C.I. Thomas, B.W. 1975 Pesticides Monitoring Journal 9(2):64-66

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

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

Benzenesulfonamide, 2-chloro-5-(1-hydroxy-3-oxo-1-isoindolinyl)- (8 CI)
Benzenesulfonamide, 2-chloro-5-(2,3-dihydro-1-hydroxy-3-oxo-1H-isoindol-1-yl)- (9 CI)
77-36-1
C14-H11-C1-N2-O4-S
MW 338.78, MP 224-226 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
16 Milk	Ingestion	GC-EC	7	0.09-0.86 ug/ml	0.37 ug/ml	Women with toxemia of pregnancy. Values 3 days after delivery. DRUGS; CHLORINE ORGANIC COMPOUNDS; DIURETICS; PLACENTA; PREGNANCY; UMBILICAL CORD; MILK; BLOOD; AMNIOTIC FLUID	Hulley, B.A. Parr, G.D. Pau, W.K. Rye, R.H. Howld, J.J. Siddle, W.C. 1978 European Journal of Clinical Pharmacology 13:129-131

BHC, Total (No postings in CHEMLINE).
MW 290.85

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
17 Milk		GC TLC	a) 50 b) 15 c) 6	a) 1.7-45.5 ppb b) Not given c) Not given	a) 9.44 ppb b) 12.8 ppb c) 6.8 ppb	a) All samples b) Colostrum c) 9-16 wk after birth of infant Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, M. 1976 Acta Paediatrica Scandinavica 65:535-539
18 Milk		GC	1 of 51	Not given	0.003 ppm	Random subjects of greater St. Louis, MO, metropolitan area. Values are total of alpha, beta, and delta isomers. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Ararbruster, J. Kettelhut, L.L. Drucker, B. 1977 American Journal of Clinical Nutrition 30:1106-1109

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
19 Milk		GC	a) 27 b) 9 c) 10 d) 40	a) 0-0.019 ppm b) 0-0.057 ppm c) 0.010-0.035 ppm d) 0.001-0.040 ppm	a) 0.006 ppm b) 0.015 ppm c) 0.024 ppm d) 0.012 ppm	a) Cotton, corn, and sesame-growing area b) Corn and cotton area c) Corn area d) Coffee-growing area, El Salvador a)-c) in Guatemala. Highest use of pesticides on cotton. Mothers from low-income families in Guatemala and El Salvador, areas chosen to represent different degrees of use of pesticides. Overuse of pesticides a particular problem in tropical countries. Prevalence of malnutrition may contribute to health effects. AGRICULTURE; CHLORINE ORGANIC COMPOUNDS; CROP DUSTING; DDT; DIELDRIN; EL SALVADOR; FOOD CONTAMINATION; GUATEMALA; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; INSECTICIDES; MILK; NUTRITIONAL DEFICIENCIES; PESTICIDES; PESTICIDE RESIDUES	de Campos, M. Olszyna-Marzys, A.E. 1979 Archives of Environmental Contamination and Toxicology 8:43-58
20 Milk		GC	50	0-480 ppb	86 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation residence, age, weight, number of children previously nursed, household use of non persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those living in homes treated by pest control operators Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
21 Milk, whole		GC TLC	25	0.0326-0.2384 ppm	0.1077 +or- 0.0124 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDE; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, H.C. Bhargava, A.K. Seth, T.D. Krishna Murti, C.R. Kuttu, D. 1981 Environmental Research 24:24-32

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
22 Mammary gland		GC GC-EC	a) 5 b) 9 c) 9	a) 2.38-3.92 ppm b) 4.34-14.25 ppm c) 1.33-4.24 ppm	a) 2.9849 ppm b) 9.1430 ppm c) 2.7680 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Wassermann, M. Moqueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
23 Milk	Ingestion		1,119	Not given	0.093 ppm	70 cases had values greater than 0.10 ppm. Samples from nursing mothers in hospitals in 45 states CHLORINE ORGANIC COMPOUNDS; INFANTS; FOOD CONTAMINATION; MILK; MAMMARY GLANDS	Anon 1978a Chemical Regulation Reporter 2(24):9
24 Milk		TLC GC	a) 14 b) 59 c) 15 d) 97	a) 10-20 ug/kg b) 20-40 ug/kg c) 10-30 ug/kg d) 20-40 ug/kg	a) 14 ug/kg b) 26 ug/kg c) 24 ug/kg d) 30 ug/kg	a) Apr-July 1967 b) Nov 1971-Dec 1972 c) June-Nov 1974 d) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Westo, G. Noren, K. 1978 Ambio 7(2):62-64
25 Milk		GC	2	1.17-1.77 ug	1.47 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; MONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
26 Milk		GC	29	Not given	0.0442 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.V. Ron, H. Wassermann, H. Cucos, S. Wassermann, D. Lensch, C. 1977 Pesticides Monitoring Journal 10(4):121-129
27 Milk		GC	a) 40 b) 38 c) 19 d) 20 e) 19	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 2.4 ppm, fat basis b) 2.4 ppm, fat basis c) 3.2 ppm, fat basis d) 2.0 ppm, fat basis e) 1.8 ppm, fat basis	a) 1973 b) 1974 c) 1975 d) 1976 e) 1977 Estimated from graph Mothers in Osaka Prefecture BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; JAPAN; MILK; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuvabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66
28 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-68 ng/g	a) 8 ng/g b) 10 ng/g c) 17 ng/g d) 8 ng/g e) 15 ng/g f) 12 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g Measured as Arochlor 1260 National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; MONOCHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Wes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
29 Milk						Review REVIEW; POLYCHLORINATED BIPHENYLS; WATER POLLUTION; POPULATION EXPOSURE; AIR POLLUTION; HEALTH HAZARDS; CARCINOGEN; MILK	Boyle, R.H. Highland, J.H. 1979 Environment 21(5):6-13,37,38
30 Milk		GC	17	a) Not given b) Not given c) Not given d) Not given	a) 612.5 ppb b) 680.0 ppb c) 482.5 ppb d) 530.0 ppb Fat basis	a) 1 month b) 2 months c) 5 months d) 7 months After parturition in 1977. Estimated from graph. Normal, pregnant women in Japan. POLYCHLORINATED BIPHENYLS; NEWBORN; PREGNANCY; JAPAN; BLOOD; MILK; LACTATION	Kodama, H. Ota, H. 1980 Archives of Environmental Health 35(2):95-100

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
31 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 24 + or - 9 ug/kg b) 24 + or - 9 ug/kg c) 29 + or - 8 ug/kg d) 19 + or - 6 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Forsgrunn, non-industrialized fishing community 1976 survey. Significant increase ($P < 0.05$) in Oslo, Bergen, and Harstad samples compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
32 Milk						Review of biological impact of PCBs on breast-fed infants and recommendations for nursing mothers JAPAN; ADULTS; INFANTS; SKIN DISEASES; MILK; REVIEW; POLYBROMINATED BIPHENYLS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FIRE RETARDANTS; FOOD CONTAMINATION; FOODS; LACTATION; POPULATION EXPOSURE	Miller, E.W. Finberg, L. 1977 Journal of Pediatrics 90(3):510-512
33 Milk		GC TLC	8	<0.04-0.1 ppm	0.05 ppm	Highest 2 levels in housewives who had never lived outside Colorado. 19-26 yr olds in 2 Colorado communities with populations of about 45,000, primarily agricultural, light industry. COLORADO; ADULTS; MILK; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS	Savage, E.P. Tessari, J.D. Halberg, J.W. Wheeler, H.W. 1973 Bulletin of Environmental Contamination and Toxicology 9(4):222-226
34 Milk		GC	1,057	a) Trace-5.100 ppm b) 0-< 1 ppm c) 1-< 2 ppm d) 2-< 3 ppm e) > 3 ppm Fat wt basis	a) 1.496 ppm b) Not given c) Not given d) Not given e) Not given Fat wt basis	a) Total, 1977-1978 b) 27% of samples c) 49.5% of samples d) 17.4% of samples e) 6.1% of samples Residents of Michigan MICHIGAN; ADULTS; MILK; POLYCHLORINATED BIPHENYLS; HEALTH HAZARDS; INDUSTRIAL AREAS	Wickizer, T.H. Brilliant, L.B. Copeland, R. Tilden, R. 1981 American Journal of Public Health 71(2):132-137
35 Milk			a) 43 b) 34 c) 19	a) 0.7-1.2 ppm b) 0.2-3.0 ppm c) 0.1-2.5 ppm	a) 1.0 ppm b) 1.2 ppm c) 1.2 ppm	a) 1969-70 b) 1971-72 c) 1973-74 Sampling periods Level of exposure unknown Ontario residents, mean age 24-28 yr. INDUSTRIAL CHEMICALS; CANADA; AGE; AUTOPSIES; ADIPOSE TISSUE; MILK; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDT; DIELDRIN; HEXACHLOROBENZENE; PESTICIDES; POLYCHLORINATED BIPHENYLS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Holdrinet, E.V.H. Braun, E.E. Frank, R. Stopps, G.J. Snout, H.S. McVade, J.W. 1977 Canadian Journal of Public Health 68:74-80

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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
36 Milk			60	a) Not given b) Not given	a) 1.80 ppm b) 2.64 ppm	a) All subjects, from 11 states b) North Carolina residents, state with highest mean Studies by U.S. Environmental Protection Agency NORTH CAROLINA; UNITED STATES; MILK; POLYCHLORINATED BIPHENYLS	Anon 1977c Pollution 7(1):6
37 Milk	Ingestion	GC/MS	1	Not applicable	6241.1 ppb	PCB worker 37 yr old Japanese JAPAN; ADULTS; AUTOPSIES; CHILDREN; INFANTS; DISEASES; ADIPOSE TISSUE; BLOOD; INTESTINES; LIVER; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED QUATERPHENYLS; FOOD CONTAMINATION; HEALTH HAZARDS	Kashimoto, T. Miyata, H. Kunita, N. 1981 Food and Cosmetics Toxicology 19:335-340
38 Milk		GC-EC	154	a) 0-4.34 mg/kg fat b) Not given c) Not given	a) 0.837 +or- 0.529 mg/kg fat b) 0.59 +or- 0.32 mg/kg fat c) 0.86 +or- 0.40 mg/kg fat	a) 153 samples, 0.029 +or- 0.019 mg/kg whole milk b) Rural residents, 19 samples c) Urban residents, 51 samples 3-6 days postpartum. b) and c) significantly different. Positive correlation with age. 93% exceeded the USA acceptable daily intake. 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; DDE; DDT; CHLORINE ORGANIC COMPOUNDS; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.B. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442
39 Milk						Review Recommendations for breast milk testing and infant feeding made following discovery of PCBs in breast milk of Michigan residents. ADULTS; INFANTS; MILK; REVIEW; CHLORINE ORGANIC COMPOUNDS; POLYCHLORINATED BIPHENYLS; HEALTH HAZARDS; LACTATION; MICHIGAN	Wickizer, T.M. Brilliant, L.B. 1981 Pediatrics 68(3):411-415

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
40 Milk		GC	50	16-1800 ppb	780 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
41 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	Hes, J. Davies, D.J. Lau, P.-Y. 1980 Chemosphere 9:763-769
42 Milk, fat		GC	52	30-870 ppb	350 ppb	Mothers of 2-12 mo old infants Healthy mothers from Kurume, Japan and their breast fed infants (2-12 mo old). PESTICIDES; POLYCHLORINATED BIPHENYLS; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; ADIPOSE TISSUE; ADRENAL GLANDS; BLOOD; LIVER; MILK; ADULTS; INFANTS; FETUS; JAPAN	Nasuda, Y. Kagawa, R. Kuroki, H. Kuratsune, H. Yoshimura, T. Taki, I. Kusuda, H. Yamashita, P. Hayashi, H. 1978 Food and Cosmetics Toxicology 16:543-546
43 Milk, fat		GC-EC	33	Not detectable-0.751 ppa	0.085 ppa	1977-1978 study Patients at public health offices, Alberta, 17-309 days postpartum. 24 women lived in Edmonton. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
44 Milk, whole		GC-EC	57	Trace	Trace	Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; BIOACCUMULATION; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; PLACENTA; ARKANSAS; MISSISSIPPI	Strassman, S.C. Kutz, F.V. 1977 Pesticides Monitoring Journal 10(4):130-133
45 Milk, whole		GC	52	1-36 ppb	13 ppb	Mothers of 2-12 mo old infants. Expressed as total milk. Healthy mothers from Kurume, Japan and their breast fed infants (2-12 mo old). PESTICIDES; POLYCHLORINATED BIPHENYLS; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; ADIPOSE TISSUE; ADRENAL GLANDS; BLOOD; LIVER; MILK; ADULTS; INFANTS; FETUS; JAPAN	Nasuda, Y. Kagawa, P. Kuroki, H. Kuratsune, H. Yoshimura, T. Taki, I. Kusuda, H. Yanashita, P. Hayashi, H. 1978 Food and Cosmetics Toxicology 16:543-546
46 Milk, whole	Ingestion	GC-EC		a) 0.01-0.10 ppm b) Not given c) Not given d) 0.01-0.14 ppm e) 0.01-0.10 ppm f) 0.01-0.24 ppm	a) 0.032 + or - 0.019 ppm b) 0.038 + or - 0.025 ppm c) 0.040 + or - 0.026 ppm d) 0.036 + or - 0.023 ppm e) 0.033 + or - 0.017 ppm f) 0.039 + or - 0.02 ppm	a) 1972, 141 samples b) 1973, 123 samples c) 1974, 119 samples d) 1975, 113 samples e) 1976, 100 samples f) 1977, 101 samples Levels highest in 1st parity mothers. 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; LACTATION; BLOOD; MILK; BIOACCUMULATION; PESTICIDES; POLYCHLORINATED BIPHENYLS; ORGANIC CHLORINE COMPOUNDS	Yakushiji, T. Natanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, H. 1979 International Archives of Occupational and Environmental Health 43:1-15

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
47 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

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
48 Milk		HPLC UV MS	28	<0.5-4.5 ug/l	Not given	Only 6 of 28 samples exceeded detectable amounts of > or = 0.5 ug/l. 28 random samples FRANCE; CANADA; THEOPHYLLINES; DRUGS; DRUG THERAPY; INFANTS; ADULTS; BLOOD; BLOOD PLASMA; COMPARATIVE EVALUATIONS; LUNGS; METABOLITES; NEWBORN; NEUROMUSCULAR DISEASES; CAFFEINE; UMBILICAL CORD	Bory, C. Baltassat, P. Forthault, H. Bethenod, P. Frederich, A. Aranda, J.V. 1979 Journal of Pediatrics 94 (6):988-993

Calcium
 7840-70-2
 Ca
 AtN 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
49 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 257 + or - 29 ug/ml b) 236 + or - 25 ug/ml c) 175 + or - 28 ug/ml d) 170 + or - 25 ug/ml e) 196 + or - 30 ug/ml f) 150 + or - 38 ug/ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 no lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae. BLOOD SERUM; MILK; METALS; LACTATION; HAIR; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.R. 1979 American Journal of Clinical Nutrition 32:2301-2306
50 Milk		ES		Not given	29 + or - 2.3 ug/100 ml	Milk from mothers of 12 preterm and 2 low birth wt infants, or from Human Milk Bureau, St. David's Hospital, Cardiff, Wales UNITED KINGDOM; INFANTS; NUTRITIONAL DEFICIENCIES; MILK; URINE; CALCIUM; DIETS	Shaw, J.C.L. 1976 Pediatrics 57 (1):16-25

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

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

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
52 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 +/- 0.48 ng/ml b) 23.34 +/- 24.3 ng/ml c) 1.53 +/- 1.74 ng/ml d) 3.09 +/- 6.34 ng/ml e) 7.21 +/- 3.55 ng/ml f) 5.57 +/- 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. Toner, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

Chromium
7840-47-3
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
53 Milk		AAS		a) 0.23-0.66 ug/ml b) 0.14-0.45 ug/day c) 0.19-0.69 ug/ml d) 0.13-0.44 ug/day	a) 0.43 + or - 0.13 ug/ml b) 0.27 + or - 0.10 ug/day c) 0.39 + or - 0.21 ug/ml d) 0.26 + or - 0.14 ug/day	a) 10 mothers, 8-18 days lactation b) 10 infants, 8-18 days old c) 5 mothers, 47-54 days lactation d) 5 infants, 47-54 days old Mothers and their breast-fed infants in Finland. MILK; LACTATION; FINLAND; CHROMIUM; METALS; COMPARATIVE EVALUATIONS; INFANTS	Kumpulainen, J. Vuori, E. 1980 American Journal of Clinical Nutrition 33:2299-2302
54 Milk	Ingestion	AAS	a) 5 b) 5	a) 0.19-0.69 ug/ml b) 0.24-0.54 ug/ml	a) 0.39 ug/ml b) 0.34 ug/ml	a) 6 to 8 wk postpartum b) 17 to 22 wk postpartum Mean maternal dietary intake, 31 ug/day. No correlation with breast milk. Lactating Finnish mothers CHROMIUM; METALS; BIOACCUMULATION; DIETS; FOOD CONTAMINATION; LACTATION; MILK; FINLAND	Kumpulainen, J. Vuori, E. Mäkinen, S. Kara, E. 1980 British Journal of Nutrition 44:257-263

Copper
7840-50-8
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
55 Milk		AAS	50	0.09-0.63 ug/ml	0.24 ug/ml	Analysis of variance indicates that several samples taken over periods of days and weeks are necessary to furnish a reliable estimate of Cu content for an individual. Samples from Pennsylvania mothers. 42 subjects were between the ages of 20 and 30, while 8 were over 30. All subjects had healthy, full-term infants. COPPER; IRON; ZINC; METALS; MINERALS; METABOLISM; LACTATION; DIETS; MILK; NEWBORN; PENNSYLVANIA	Picciano, H.F. Guthrie, H.A. 1976 American Journal of Clinical Nutrition 29:242-254
56 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.43 + or - 0.05 ug/ml b) 0.33 + or - 0.03 ug/ml c) 0.30 + or - 0.03 ug/ml d) 0.24 + or - 0.04 ug/ml e) 0.29 + or - 0.08 ug/ml f) 0.28 + or - 0.06 ug/ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 months lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae and 16 multiparae, 1-31 mo postpartum. BLOOD SERUM; MILK; METALS; LACTATION; HAIR; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.R. 1979 American Journal of Clinical Nutrition 32:2301-2306

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Copper
7440-50-8
Cu
AtV 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
57 Milk		AAS	a) 76 b) 77 c) 23 d) 77 e) 25	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.46 ug/ml b) 0.29 ug/ml c) 0.16 ug/ml d) 0.29 ug/ml e) 0.36 ug/ml	a) Colostrum, high and low income groups b) After lactation 1-3 months, high and low income groups c) After lactation > or = 13 months, high and low income groups d) After lactation 1-3 months, low income group e) After lactation 1-3 months, high income group Significant difference (P<0.01) between income groups at 1-3 months but not at 4-6 months. Additional data available. Women from urban and rural India. METALS; TRACE ELEMENTS; COPPER; MAGNESIUM; ZINC; MILK; COMPARATIVE EVALUATIONS; URBAN AREAS; RURAL AREAS; INDIA	Rajalakshmi, K. Srikantia, S.G. 1980 American Journal of Clinical Nutrition 33:664-669
58 Milk						Review REVIEW; METALS; TRACE ELEMENTS; COPPER; MANGANESE; SELENIUM; CHROMIUM; NEWBORN; FETUS; BLOOD PLASMA; ERYTHROCYTES; MILK; LIVER; UNITED KINGDOM; NUTRITIONAL DEFICIENCIES; AMNIOTIC FLUID	Shaw, J.C.L. 1980 American Journal of Diseases of Children 134:74-81
59 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.P. 1978 New Zealand Medical Journal 87 (603):3-8

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
60 Milk		TLC GC	a) 59 b) 15 c) 97	a) Not given b) Not given c) Not given	a) <0.25 ug/kg b) <0.25 ug/kg c) <0.25 ug/kg	a) Nov 1971-Dec 1972 b) June-Nov 1974 c) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Vestoo, G. Noren, K. 1978 Ambio 7(2):62-64

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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)
 319-88-6
 C6-H6-Cl6
 BP 290.83, MP 159.5-160 C, BP 286 C, VP 0.02 mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
61 Milk		GC TLC	17	0.1-1.9 ppb	0.58 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, M. 1976 Acta Paediatrica Scandinavica 65:535-539
62 Milk		GC-EC GC/MS	5	< 0.1 ug/kg	Not applicable	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Sait, N. Sait, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
63 Milk, fat				Not given	0.12 ug/kg	85 samples-each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph. PESTICIDES; MILK; FATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Szokolay, A. Rosival, L. Uhnak, J. Madaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
64 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-0.733 ppm b) Not detectable-0.016 ppm	a) 0.107 ppm b) 0.002 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients, (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
65 Milk, fat		GC-EC	a) 34 b) 6	a) 0-0.27 ppm b) 0-0.01 ppm	a) 0.02 ppm b) 0.003 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51

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)
 919-85-7
 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
66 Milk		TLC GC	a) 59 b) 15 c) 97	a) 0.7-21 ug/kg b) 1.7-5.7 ug/kg c) 1.9-7.7 ug/kg	a) 6.4 ug/kg b) 3.6 ug/kg c) 3.8 ug/kg	a) Nov 1971-Dec 1972 b) June-Nov 1974 c) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROXYCLOHEXANE	Nestoo, G. Noren, K. 1978 Ambio 7(2):62-64
67 Milk		GC	2	0.07-0.10 ug	0.09 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROXYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Men, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
68 Milk			57	Trace-0.01 ppb	<0.01 ppb	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROXYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
69 Milk		GC TLC	49	1.2-17.8 ppb	4.69 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539
70 Milk		GC	a) 23 b) 20 c) 12 d) 40 e) 38 f) 19 g) 20 h) 19	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) 6.8 ppb, fat basis b) 6.2 ppb, fat basis c) 5.0 ppb, fat basis d) 4.9 ppb, fat basis e) 3.1 ppb, fat basis f) 5.0 ppb, fat basis g) 4.9 ppb, fat basis h) 3.4 ppb, fat basis	a) 1970 b) 1971 c) 1972 d) 1973 e) 1974 f) 1975 g) 1976 h) 1977 Estimated from graph Mothers in Osaka Prefecture BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEXACHLOROXYCLOHEXANE; JAPAN; MILK; POLYCHLORINATED BIPHENYLS	Yakushiji, I. Watanabe, I. Kuwabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, I. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66

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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, BP 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
71 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-21 ug/g	a) 1 ug/g b) 1 ug/g c) 3 ug/g d) 2 ug/g e) 2 ug/g f) 2 ug/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ug/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
72 Milk		GC-EC GC/MS	10	8.1-18.6 ug/kg	9.1 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, V. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
73 Milk, fat				Not given	0.49 ug/kg	85 samples-each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph. PESTICIDES; MILK; FATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Szokolay, A. Hosival, L. Uhnak, J. Nadaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
74 Milk, fat		GC-EC	33	0.009-0.393 ppm	0.232 ppm	1977-1978 study Patients at public health offices, Alberta, 17-309 days postpartum. 24 women lived in Edmonton. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadia, V.W. Breitkreitz, S.E. Cunningham, G.B. Brann, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
75 Milk, fat		GC-EC	a) 34 b) 6	a) 0.08-1.69 ppm b) 0.11-0.75 ppm	a) 0.53 ppm b) 0.270 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.V. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51

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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, BP 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
76 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 4.83 ± or - 2.99 ppa b) 3.25 ± or - 1.59 ppa c) 4.54 ± or - 2.73 ppa d) 4.78 ± or - 2.45 ppa e) 3.10 ± or - 1.51 ppa f) 2.47 ± or - 1.00 ppa	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; PESTICIDES; ORGANIC CHLORINE COMPOUNDS; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kavalara, K. Yoshida, S. Koyama, K. Kanita, W. 1979 International Archives of Occupational and Environmental Health 43:1-15
77 Milk, whole		GC-EC	57	Trace-0.01 ppa	0.014 ppa	Residue levels were below instrument sensitivity and could not be confirmed. Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; BIOACCUMULATION; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; PLACENTA; ARKANSAS; MISSISSIPPI	Strassman, S.C. Kutz, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
78 Milk, whole		TLC GC/MS GC-EC	57	Trace-0.01 ppa	<0.01 ppa	36.8% positive samples Samples from lactating women in selected areas of Arkansas and Mississippi. PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.B. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
79 Milk		GC TLC	34	0.3-3.2 ppb	1.14 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; BREAST; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
80 Milk, fat				Not given	0.10 ug/kg	85 samples--each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph. PESTICIDES; MILK; FATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Szokolay, A. Rosival, I. Wanak, J. Nadaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359

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, BP 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
81 Mammary gland		GC GC-EC	a) 5 b) 9 c) 9	a) 0.19-0.81 ppm b) 0.21-1.28 ppm c) 0.10-2.57 ppm	a) 0.3905 ppm b) 0.6100 ppm c) 0.5698 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Wassermann, S. Bogusira, D.P. Tomatis, L. Sirra, A.P. Shibata, S. Arie, G. Cecos, S. Wassermann, S. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
82 Milk		TL GC	a) 59 b) 15 c) 97	a) Not given b) Not given c) Not given	a) < or = 0.5 ug/kg b) < or = 0.5 ug/kg c) < or = 0.2 ug/kg	a) Nov 1971-Dec 1972 b) June-Nov 1974 c) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Hestoo, G. Soren, K. 1978 Ambio 7(2):62-64

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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, BP 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
83 Milk		GC	25	Not given	0.0101 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Bon, M. Wassermann, M. Cucos, S. Wassermann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10(4):121-129
84 Milk		GC TLC	17	1.0-35.8 ppb	10.91 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in Southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, M. 1976 Acta Paediatrica Scandinavica 65:535-539
85 Milk		GC	2 of 51	Not given	0.004 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIK; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Lin, G.J.K. Armbruster, J. Kettelhut, L.L. Bracker, B. 1977 American Journal of Clinical Nutrition 30:1106-1109
86 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.061 ppm b) 0-0.270 ppm c) 0-0.270 ppm d) Not given	a) 0.011 ppm b) 0.037 ppm c) 0.025 ppm d) 0.0004 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, B. Herrera Marteaache, A. Polo Villar, L.M. Lopez-Gimenez, B. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

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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
87 Milk		GC-EC	154	a) 0-1.56 mg/kg fat b) Not given c) Not given	a) 0.047 +/- 0.131 mg/kg fat b) 0.04 +/- 0.07 mg/kg fat c) 0.03 +/- 0.03 mg/kg fat	a) 0.002 +/- 0.0001 mg/kg whole milk, all samples, 3% exceeded limits set by Codex Alimentarius Commission b) Rural residents, 19 samples c) Urban residents, 51 samples 3-6 days postpartum. Previous breast feeding inversely correlated with lindane levels. No correlation with age or place of residence 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.S. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442
88 Milk, fat				Not given	0.33 mg/kg	85 samples-each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph PESTICIDES; MILK; FATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Sokolay, A. Rosival, L. Uhanak, J. Sadaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
89 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-0.340 ppm b) Not applicable	a) 0.006 ppm b) Not detectable	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.Z. Cunningham, G.B. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
90 Milk, fat		GC-EC	a) 34 b) 6	a) 0-0.29 ppm b) 0-0.03 ppm	a) 0.03 ppm b) 0.008 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.V. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
91 Milk, whole		GC TLC	25	0.0106-0.810 ppm	0.0402 +/- 0.0051 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDE; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEUROBORN	Siddiqui, H.K.J. Saxena, H.C. Bhargava, A.K. Seth, T.D. Krishna Murli, C.R. Ketty, D. 1981 Environmental Research 24:24-32

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
92 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 8.29-18.30 ppm b) 4.07-29.39 c) 1.99-13.56 ppm	a) 12.4910 ppm b) 13.5091 ppm c) 6.3001 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE	Wassermann, M. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
93 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 8.01-16.78 ppm b) 1.84-12.38 ppm c) 0.82-7.50 ppm	a) 11.5309 ppm b) 7.4237 ppm c) 3.9327 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE	Wassermann, M. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
94 Mammary gland		GC-EC	a) 5 b) 9 c) 9	a) 0.28-1.52 ppm b) 2.23-17.01 ppm c) 0.40-8.45 ppm	a) 0.9601 ppm b) 6.0854 ppm c) 2.3674 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Wassermann, H. Moqueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
95 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) 223 gamma/day b) 187 gamma/day	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974. Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adamovic, V.H. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285
96 Milk			57	0.02-2.76 ppm	0.34 ppm	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLOROCYCLOHEXANE; DDT; MONOCHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, P.W. Strassman, S.C. Yohn, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
97 Milk			29	Not given	0.0717 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DCD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCHLOROCYCLOHEXANE	Polishuk, Z.W. Ron, H. Wassermann, H. Cucos, S. Wassermann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10(4):121-129

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
98 Milk			a) 55 b) 42 c) 13	a) 0.0-0.298 ug/g b) Not given c) Not given	a) 0.114 ug/g b) 0.101 ug/g c) 0.146 ug/g	a) Smokers plus nonsmokers b) Nonsmokers c) Smokers Women in eastern Pennsylvania, predominately middle class, mean education 14.4 yr DDT; PESTICIDES; MILK; PENNSYLVANIA; SMOKING	Bradt, P.T. Herrenkohl, R.C. 1976 Science of the Total Environment 6:141-143
99 Milk		GC TLC	a) 50 b) 15 c) 6	a) 5.2-349.0 ppb b) Not given c) Not given	a) 81.74 ppb b) 94.0 ppb c) 55.6 ppb	a) All samples b) Colostrum c) 9-16 wk after birth of infant Milk samples, hospitals in urban Oslo. 4 samples from Hellingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, V. 1976 Acta Paediatrica Scandinavica 65:534-539
100 Milk		GC	a) 27 b) 9 c) 10 d) 15 e) 10 f) 10 g) 40	a) 0.342-4.97 ppm b) 1.57-6.68 ppm c) 0.411-1.77 ppm d) 0.025-1.03 ppm e) 1.14-6.60 ppm f) 0.600-9.26 ppm g) 0.062-1.96 ppm	a) 1.84 ppm b) 3.06 ppm c) 1.11 ppm d) 0.480 ppm e) 2.55 ppm f) 3.54 ppm g) 0.695 ppm	a) Cotton, corn, and sesame-growing area b) Corn and cotton area c) Corn area d) Guatemala City e) Banana area f) Cotton area g) Coffee-growing area, El Salvador a)-f) in Guatemala. Highest use of pesticides on cotton. Mothers from low-income families in Guatemala and El Salvador, areas chosen to represent different degrees of use of pesticides. Overuse of pesticides a particular problem in tropical countries. Prevalence of malnutrition may contribute to health effects. AGRICULTURE; CHLORINE ORGANIC COMPOUNDS; CROP DUSTING; DDT; DIELDRIN; EL SALVADOR; FOOD CONTAMINATION; GUATEMALA; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; INSECTICIDES; MILK; NUTRITIONAL DEFICIENCIES; PESTICIDES; PESTICIDE RESIDUES	de Campos, N. Olszyna-Marzys, A.E. 1979 Archives of Environmental Contamination and Toxicology 8:43-58
101 Milk			a) 48 b) 34 c) 19	a) 0.11-11.4 ppm b) 0.33-18.8 ppm c) 0.22-2.58 ppm	a) 3.48 ppm b) 3.48 ppm c) 1.39 ppm	a) 1969-70 b) 1971-72 c) 1973-74 Percentages of metabolite p,p'-DDE increased from 75.0 to 81.6 to 88.5 during sampling periods 1969-70, 1971-72 and 1973-74 respectively. p,p'-DDD and p,p'-DDT declined during the same time periods. Ontario residents, mean age 24-28 yr. INDUSTRIAL CHEMICALS; CANADA; AGE; AUTOPSIES; ADIPOSE TISSUE; MILK; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDT; DIELDRIN; HEXACHLOROBENZENE; PESTICIDES; POLYCHLORINATED BIPHENYLS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Holdrinet, M.V.B. Braun, H.E. Frank, R. Stopps, G.J. Snout, H.S. Schade, J.V. 1977 Canadian Journal of Public Health 68:74-80

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DDT, Total (No postings in CHEMLINE).
 50-29-1
 C18-H9-CL5
 BW 354.50

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
102 Milk		GC-EC	154	a) 0.01-6.81 mg/kg fat b) Not given c) Not given	a) 1.087 +or- 0.880 mg/kg fat b) 0.72 +or- 0.43 mg/kg fat c) 1.17 +or- 1.02 mg/kg fat	a) 154 samples, 0.039 +or- 0.031 mg/kg whole milk b) Rural residents, 19 samples c) Urban residents, 51 samples 3-6 days postpartum. 30% exceeded Codex Alimentarius Commission limits. Levels increased with urban residence and smoking 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.B. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442
103 Milk, fat			a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 3.5 mg/kg b) 2.9 mg/kg c) 2.8 mg/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Vestoo, G. 1974 Ambio 3(2):79-83
104 Milk, whole		TLC GC/MS GC-EC	57	0.02-2.76 ppm	0.34 ppm	100% positive samples Samples from residents of Arkansas and Mississippi PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yohn, A.R. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)
105 Milk, whole		GC	a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 0.11 mg/kg b) 0.088 mg/kg c) 0.086 mg/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Vestoo, G. 1974 Ambio 3(2):79-83
106 Milk, whole		GC TLC	25	0.0211-0.3039 ppm	0.1272 +or- 0.0198 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDD; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, H.C. Shargava, A.K. Seth, T.D. Krishna Murti, C.R. Kutty, D. 1981 Environmental Research 24:24-32

Digoxin (8 CI)
 Card-20 (22)-enolide, 3-((0-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-0-2,6-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
 C41-864-014
 MW 780.92, MP about 265 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
107 Milk		RIA	1	Not given	1.9 ng/ml	Level 7 day post partum. Patient received 0.75 mg digoxin daily during pregnancy and after delivery. 30 yr old woman, first pregnancy Low maternal serum estriol levels pre-delivery. BLOOD SERUM; MILK; UMBILICAL CORD; DRUGS; DRUG THERAPY; CARDIOVASCULAR DISEASES; ADULTS; NEWBORN; PREGNANCY; LACTATION; CANADA; CASE HISTORIES	Finley, J.P. Waxman, W.B. Wong, P.Y. Lickrish, G.M. 1979 Journal of Pediatrics 94(2):339-340
108 Milk		RIA	2	a) 0.6-0.96 ng/ml b) 0.28-0.61 ng/ml	a) 0.78 ng/ml b) 0.41 ng/ml	a) 0.25 mg digoxin daily throughout pregnancy b) 0.25 mg digoxin + 82 mg propranolol daily for 10 yr Pregnant women taking digoxin, one for chronic rheumatic carditis and the other taking digoxin and propranolol for recurrent tachycardia. Both infants were term and had normal neonatal period. DRUGS; MILK; BLOOD PLASMA; ADULTS; INFANTS; AUSTRALIA; DRUG THERAPY	Loughnan, P.M. 1978 Journal of Pediatrics 92(6):1019-1020

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
 C14-810-C14
 MW 320.05, MP 76-78 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
109 Mammary gland		CC GC-EC	a) 9 b) 9	a) 0-4.08 ppm b) 0-4.28 ppm	a) 1.4115 ppm b) 0.7292 ppm	a) Malignant b) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Vassermann, H. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Vassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484

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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-C14
HW 320.05, MP 76-78 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
110 Milk		GC	29	Not given	0.0060 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Ron, M. Wassermann, M. Cucos, S. Wassermann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10 (4):121-129

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
111 Mammary gland		CC GC-EC	a) 5 b) 9	a) 0.33-0.86 ppm b) 0-0.84 ppm	a) 0.5493 ppm b) 0.2426 ppm	a) Control b) Breast tissue adjacent to malignancy Values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Wassermann, M. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15 (4):478-484
112 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) <0.001 ppm (trace) b) <0.001 ppm (trace)	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974 Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adamovic, V.M. Sokic, B. Sailjanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285

(NEXT PAGE)

Ethane, 1,1-dichloro-2,2-bis(p-chlorophenyl) - (8 CI)
Benzene, 1,1'-(2,2-dichloroethylidene) bis(4-chloro- (9 CI)
72-54-8
C14-H10-Cl4
MW 350.06, MP 221-222 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
113 Milk		GC	29	Not given	0.0099 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.V. Bon, M. Wassersmann, M. Cucos, S. Wassersmann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10(4):121-129
114 Milk		GC-EC GC/MS	5	< 1 ug/kg	Not applicable	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
115 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.980 ppm b) 0-0.149 ppm c) 0-0.980 ppm d) Not given	a) 0.100 ppm b) 0.020 ppm c) 0.057 ppm d) 0.001 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Martache, A. Polo Villar, L.R. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
116 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-1.45 ppm b) Not detectable-0.348 ppm	a) 0.151 ppm b) 0.023 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients, (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Braun, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
117 Milk, fat		GC-EC	a) 34 b) 6	a) 0-0.43 ppm b) 0-0.01 ppm	a) 0.04 ppm b) 0.002 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.J. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
118 Milk, whole		GC TLC	25	0.0027-0.0370 ppm	0.0129 + or - 0.0018 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDE; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, M.C. Bhargava, A.K. Seth, T.D. Krishna Murti, C.R. Kutty, D. 1981 Environmental Research 24:24-32

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
119 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 0.21-1.17 ppm b) 0-12.19 ppm c) 0-2.28 ppm	a) 0.7775 ppm b) 2.8487 ppm c) 1.0044 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Wassermann, H. Nogueira, D.P. Tonatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
120 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) 2.8 gamma/day b) 3.3 gamma/day	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974 Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adamovic, V.M. Sokic, B. Smiljanski, V-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285
121 Milk		GC	29	Not given	0.0073 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Ron, H. Wassermann, M. Cucos, S. Wassermann, D. Lewesch, C. 1977 Pesticides Monitoring Journal 10 (4):121-129
122 Milk		GC TLC	49	1.6-120.9 ppb	18.53 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539
123 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-48 ng/g	a) 3 ng/g b) 1 ng/g c) 6 ng/g d) Not detectable e) 1 ng/g f) 3 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPENEYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
124 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-0.072 ppm b) Not detectable-0.169 ppm	a) 0.003 ppm b) 0.031 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES: HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Ernst, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
125 Milk, fat		GC-EC	a) 34 b) 6	a) 0-1.08 ppm b) 0.02-0.14 ppm	a) 0.21 ppm b) 0.050 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.V. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51

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
HW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10⁻⁷ mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
126 Mammary gland		GC-EC	a) 5 b) 9 c) 9	a) 1.50-8.24 ppm b) 1.35-6.40 ppm c) 0.39-2.81 ppm	a) 3.5516 ppm b) 4.3978 ppm c) 1.4266 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy The values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; DDD	Wassermann, H. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484

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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
NW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
127 Milk		CC GC/MS	a) 6 b) 9	a) 0.006-0.030 ppm b) 0.002-0.011 ppm	a) 0.013 ppm b) 0.006 ppm	a) New Brunswick women b) Nova Scotia women Six lactating mothers from New Brunswick and 9 from Nova Scotia. MILK; BREAST; CANADA; PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; LACTATION; POLYCHLORINATED BIPHENYLS; DDT; DDE	Musial, C.J. Hutzinger, O. Zitko, V. Crocker, J. 1974 Bulletin of Environmental Contamination and Toxicology 12(3):258-267
128 Milk		CC GC-EC	6	a) Not detectable-2.45 ppm b) Not detectable-0.20 ppm	0.61 ppm 0.03 ppm	a) Values for milk fat b) Values for whole milk Samples from residents of Hawaii collected from 1964-1973 PESTICIDES; HAWAII; FETUS; FETAL MEMBRANES; MILK; UTERUS; BLOOD SERUM; DDT; DDE; DIELDRIN	Klemer, H.V. Budy, A.M. Takahashi, W. Haley, T.J. 1977 Clinical Toxicology 11(1):71-82
129 Milk		TLC GC	a) 14 b) 59 c) 15 d) 97	a) 28-61 ug/kg b) 10-35 ug/kg c) 9-19 ug/kg d) 6.6-19 ug/kg	a) 40 ug/kg b) 18 ug/kg c) 13.5 ug/kg d) 10 ug/kg	a) Apr-July 1967 b) Nov 1971-Dec 1972 c) June-Nov 1974 d) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Westo, G. Noren, K. 1978 Ambio 7(2):62-64
130 Milk		GC	2	0.24-0.71 ug	0.48 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NOVACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
131 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) 41 gamma/day b) 34 gamma/day	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974 Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adamovic, V.M. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285

(NEXT PAGE)

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
132 Milk			57	0.01-0.84 ppm	0.09 ppm	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yohs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
133 Milk		GC	29	Not given	0.0122 ppm	Higher percentages of organochlorine insecticides and PCN's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Hon, M. Hassermann, M. Cucos, S. Hassermann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10(4):121-129
134 Milk		GC TLC	50	2.3-138.3 ppb	17.89 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in the central part of southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, M. 1976 Acta Paediatrica Scandinavica 65:535-539
135 Milk		GC	2 of 51	Not given	0.008 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Armbroster, J. Kettelhut, L.L. Dracker, B. 1977 American Journal of Clinical Nutrition 30:1106-1109
136 Milk		GC	a) 23 b) 20 c) 12 d) 40 e) 38 f) 19 g) 20 h) 19	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) 1.3 ppm, fat basis b) 1.4 ppm, fat basis c) 1.3 ppm, fat basis d) 0.9 ppm, fat basis e) 0.9 ppm, fat basis f) 0.8 ppm, fat basis g) 0.9 ppm, fat basis h) 1.0 ppm, fat basis	a) 1970 b) 1971 c) 1972 d) 1973 e) 1974 f) 1975 g) 1976 h) 1977 Estimated from graph Mothers in Osaka Prefecture BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; JAPAN; MILK; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Natanabe, I. Kuwabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, M. 1979 Archives of Environmental Contamination and Toxicology 8:59-66

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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 1.5X10⁻⁷ mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
137 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-21 ng/g	a) 5 ng/g b) 7 ng/g c) 6 ng/g d) 5 ng/g e) 8 ng/g f) 6 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Mes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
138 Milk		GC-EC GC/MS	10	8.0-135.4 ug/kg	50.8 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
139 Milk			25	Not given	180 + or - 140 ppb	Milk bank donors California CALIFORNIA; ADULTS; MILK; BIOACCUMULATION; LACTATION; DDE; DDT; PESTICIDES	Harrod, J.R. Asquith, M.T. 1980 New England Journal of Medicine 303(16):945-946
140 Milk		GC-EC	a) 14 b) 11 c) 10 d) 9	a) Not given b) Not given c) Not given d) Not given	a) 50 + or - 38 ug/kg b) 49 + or - 31 ug/kg c) 39 + or - 17 ug/kg d) 29 + or - 13 ug/kg	a) Oslo, large industrialized city b) Bergen, large industrialized city c) Harstad, smaller city with large chemical/petrochemical complex d) Forsgrunn, non-industrialized fishing community 1976 survey. Significant decrease at all sampling locations compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.H. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
141 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.095-33.122 ppm b) 0-10.361 ppm c) 0-33.122 ppm d) Not given	a) 4.223 ppm b) 2.795 ppm c) 3.461 ppm d) 0.065 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Harteache, A. Polo Villar, L.H. Lopez-Ginenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

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 1.5x10⁻⁷ mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
142 Milk		GC-EC	154	a) 0-2.51 mg/kg fat b) Not given c) Not given	a) 0.204 +or- 0.262 mg/kg fat b) 0.18 +or- 0.11 mg/kg fat c) 0.18 +or- 0.12 mg/kg fat	a) 154 samples, 0.007 +or- 0.009 mg/kg whole milk b) Rural, residents 19 samples c) Urban, residents 51 samples 3-6 days postpartum 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.B. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442
143 Milk		GC	50	32-520 ppb	160 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidia, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
144 Milk, fat				Not given	2287 mg/kg	85 samples-each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph. PESTICIDES; MILK; PATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Skokolay, A. Posival, L. Uhnak, J. Madaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
145 Milk, fat		GC	a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 1.3 mg/kg b) 1.0 mg/kg c) 0.63 mg/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Hestoo, G. 1974 Ambio 3(2):79-83

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
146 Milk, fat	*	GC-EC	a) 53 b) 33	a) Not detectable-11.25 ppm b) Trace-8.35 ppm	a) 1.14 ppm b) 0.437 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadia, V.W. Breitkreitz, W.E. Cunningham, G.P. Brann, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
147 Milk, fat		GC-EC	a) 34 b) 6	a) 0.34-18.45 ppm b) 0.26-0.53 ppm	a) 4.25 ppm b) 0.390 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
148 Milk, fat		GC-EC	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.45 + or - 0.22 ppm b) 0.42 + or - 0.46 ppm c) 0.38 + or - 0.16 ppm d) 0.44 + or - 0.15 ppm e) 0.49 + or - 0.18 ppm f) 0.29 + or - 0.09 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. PESTICIDES; DDT; ORGANIC CHLORINE COMPOUNDS; JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, S. 1979 International Archives of Occupational and Environmental Health 43:1-15
149 Milk, whole		GC-EC	290	0.003-5.686 ppm	0.378 ppm	All 290 samples showed measurable quantities of p,p'-DDT and p,p'-DDE. Some showed o,p'-DDT and p,p'-DDD. p,p'-DDE and p,p'-DDD amounts were adjusted to their equivalent ppm DDT in making up the total. Differences in levels in communities associated with use of DDT by National Malaria Eradication Service. Comparison done of levels in mother's milk from 3 communities in 1970 and 1974. Milk samples collected from 290 lactating women by manual expression under supervision. Eight communities studied. MILK; GUATEMALA; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; PESTICIDES	Winter, H. Thomas, H. Wernick, S. Levin, S. Farvar, S.T. 1976 Bulletin of Environmental Contamination and Toxicology 16(6):652-657

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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, BP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
150 Milk, whole		GC-EC	57	0.01-0.84 ppm	0.092 ppm	Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; BIOACCUMULATION; MISSISSIPPI; ARKANSAS; PLACENTA	Strassman, S.C. Kutz, P.V. 1977 Pesticides Monitoring Journal 10(4):130-133
151 Milk, whole		TLC GC/MS GC-EC	57	0.01-0.94 ppm	0.09 ppm	100% positive samples Samples from residents of Arkansas and Mississippi PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, P.V. Strassman, S.C. Yobs, A.B. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)
152 Milk, whole		GC-EC	a) 39 b) 92 c) 34	a) 0.029-0.345 ppm b) 0.004-0.158 ppm c) 0.012-0.273 ppm	a) 0.119 ppm b) 0.033 ppm c) 0.073 ppm	a) Mothers from Lisbon and Aveiro, Portugal b) Mothers from Braganca, Faro, Guarda, Porto, Viana do Castelo, Vila Real, and Viseu, Portugal c) Mothers from Evora, Portalegre, and Setubal, Portugal Samples taken in 1972. PESTICIDES; DDT; DDE; DIELDRIN; MILK; PORTUGAL	Grace, I. Fernandes, A.H.S.S. Mourao, H.C. 1974 Pesticides Monitoring Journal 8(3):148-156
153 Milk, whole		GC-EC	22	0.002-0.025 ppm	0.010 ppm	Survey, Western Australia, 1970-1971 22 nursing mothers, wt 46-66 kg, living within a 30 mi radius of Perth, Western Australia MILK; PESTICIDES; AUSTRALIA; DDT; DDE; DIELDRIN; HEXACHLOROBENZENE	Stacey, C.I. Thomas, B.W. 1975 Pesticides Monitoring Journal 9(2):64-66
154 Milk, whole		GC	a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 0.040 mg/kg b) 0.030 mg/kg c) 0.020 mg/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Westoo, G. 1974 Ambio 3(2):79-83
155 Milk, whole		GC TLC	25	0.0072-0.1134 ppm	0.0441 + or - 0.0091 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDT; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, H.K.J. Saxena, S.C. Bhargava, A.K. Seth, T.D. Krishna Murti, C.R. Kutty, D. 1981 Environmental Research 24:24-32

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
156 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 yr 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, H.D. Harris, S.S.H., III Pellizzari, E.D. Toner, K.B. Waddell, R.D. Whitaker, D.A. 1990 EPA 560/13-80-029, 153 pp.

Ethylene, 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
 Benzene, 1-chloro-2-(2,2-dichloro-1-(4-chlorophenyl) ethenyl)- (9 CI)
 3424-82-6
 C14-H8-Cl4
 MW 318.03

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
157 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 0.06-0.32 ppm b) 0.34-4.70 ppm c) 0.07-1.47 ppm	a) 0.1639 ppm b) 1.8589 ppm c) 0.5689 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Vasserman, H. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucco, S. Vasserman, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):476-484

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Ethylene, 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
 Benzene, 1-chloro-2-(2,2-dichloro-1-(4-chlorophenyl)ethenyl)- (9 CI)
 3424-82-6
 C14-H8-Cl4
 MW 318.03

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
158 Milk		GC	29	Not given	0.0095 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Ron, H. Wassermann, M. Cucos, S. Wassermann, D. Lewesch, C. 1977 Pesticides Monitoring Journal 10 (4):121-129
159 Milk		GC TLC	30	1.6-43.8 ppb	18.02 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
 Benzene, 1,1'-(dichloroethenyldiene) bis(4-chloro- (9 CI)
 72-55-9
 C14-H6-Cl4
 MW 318.02, BP 88.4 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
160 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 4.81-8.74 ppm b) 0.44-6.61 ppm c) 0.22-5.35 ppm	a) 6.6697 ppm b) 2.7149 ppm c) 2.0276 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Values represent the concentrations in extracted lipids. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the L.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE	Wassermann, M. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Wassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):476-484

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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
 HW 318.02, MP 88.4 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
161 Milk		CC GC/MS	a) 6 b) 9	a) 0.017-0.068 ppm b) 0.009-0.040 ppm	a) 0.035 ppm b) 0.019 ppm	a) New Brunswick women b) Nova Scotia women Six lactating mothers from New Brunswick and 9 from Nova Scotia. MILK; BREAST; CANADA; PESTICIDES; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; LACTATION; POLYCHLORINATED BIPHENYLS; DDT; DDE	Musial, C.J. Hutzing, O. Zitko, V. Crocker, J. 1974 Bulletin of Environmental Contamination and Toxicology 12(3):258-267
162 Milk		CC GC-EC	6	a) 0.09-10.85 ppm b) 0.01-0.48 ppm	a) 1.88 ppm b) 0.10 ppm	a) Values are for milk fat b) Values are for whole milk Samples from residents of Hawaii collected from 1964-1973 PESTICIDES; HAWAII; FETUS; FETAL MEMBRANES; MILK; UTERUS; BLOOD SERUM; DDT; DDE; DIELDRIN	Klemmer, H.W. Budy, A.M. Takahashi, W. Haley, T.J. 1977 Clinical Toxicology 11(1):71-82
163 Milk		TLC GC	a) 14 b) 59 c) 15 d) 97	a) 40-93 ug/kg b) 34-88 ug/kg c) 32-70 ug/kg d) 21-84 ug/kg	a) 65 ug/kg b) 59 ug/kg c) 52 ug/kg d) 43 ug/kg	a) Apr-July 1967 b) Nov 1971-Dec 1972 c) June-Nov 1974 d) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Nestoo, G. Noren, K. 1978 Ambio 7(2):62-64
164 Milk		GC	2	a) 29-32 ppb b) 46-52 ppb	a) Not given b) Not given	a) Sample 1 b) Sample 2 Repeated determinations PESTICIDES; CHLOROBENZENES; DDE; MILK	Brevik, E.N. 1978 Bulletin of Environmental Contamination and Toxicology 19:281-286
165 Milk		GC	2	1.44-4.49 ug	2.96 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXICHLORDANE; NONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
166 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) 161 gamma/day b) 135 gamma/day	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974 Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adamovic, V.N. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285

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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
HW 318.02, MP 88.4 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
167 Milk			57	0.01-1.72 ppm	0.22 ppm	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
168 Milk		GC	29	Not given	0.0217 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Ron, H. Wassermann, H. Cucos, S. Wassermann, D. Lemesch, C. 1977 Pesticides Monitoring Journal 10(4):121-129
169 Milk		GC TLC	50	0.9-113.2 ppb	65.10 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539
170 Milk		GC	36 of 51	Not given	0.035 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Armbuster, J. Kettelhut, L.L. Drucker, B. 1977 American Journal of Clinical Nutrition 30:1106-1109
171 Milk		GC	a) 23 b) 20 c) 12 d) 40 e) 38 f) 19 g) 20 h) 19	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) 2.8 ppm, fat basis b) 2.1 ppm, fat basis c) 4.1 ppm, fat basis d) 3.3 ppm, fat basis e) 3.8 ppm, fat basis f) 3.7 ppm, fat basis g) 3.8 ppm, fat basis h) 4.0 ppm, fat basis	a) 1970 b) 1971 c) 1972 d) 1973 e) 1974 f) 1975 g) 1976 h) 1977 Estimated from graph Mothers in Osaka Prefecture BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; JAPAN; MILK; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kawabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66

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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
172 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-114 ng/g	a) 29 ng/g b) 34 ng/g c) 34 ng/g d) 21 ng/g e) 59 ng/g f) 35 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
173 Milk		GC-EC GC/MS	10	42.0-418.5 ug/kg	175.7 ug/kg	Lactating mothers 17-41 yr olds from Slavonia Province, Yugoslavia. YUGOSLAVIA; LACTATION; MILK; BIOACCUMULATION; RURAL AREAS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; DDE; DDT; HEXACHLOROCYCLOHEXANE; PESTICIDES	Kodric-Smit, M. Smit, Z. Olie, K. 1980 Pesticides Monitoring Journal 14(1):1-2
174 Milk			25	Not given	2130 + or - 1450 ppb	Milk bank donors California CALIFORNIA; ADULTS; MILK; BIOACCUMULATION; LACTATION; DDE; DDT; PESTICIDES	Harrod, J.P. Asquith, M.F. 1980 New England Journal of Medicine 303(16):945-946
175 Milk						Review Exposed persons in the United States, the Netherlands, Sweden, Israel, Japan, USSR, Poland, Germany, India, Bulgaria, Pakistan, Austria. Reported cases of hypertension, elevated serum cholesterol, abnormal EEGs, or impairment of neuromuscular function after acute exposure to combinations of pesticides, but most data show no adverse effects after long-term occupational exposure. AUSTRIA; BULGARIA; GERMANY; INDIA; ISRAEL; JAPAN; NETHERLANDS; PAKISTAN; POLAND; RUSSIA; SWEDEN; UNITED STATES; ADIPOSE TISSUE; BLOOD; PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
176 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.935-26.406 ppm b) 0.535-13.407 ppm c) 0.535-26.406 ppm d) Not given	a) 6.698 ppm b) 5.833 ppm c) 6.263 ppm d) 0.114 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Martache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, N. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35(206):93-110
177 Milk		GC-EC	154	a) 0.01-6.79 ug/kg fat b) Not given c) Not given	a) 0.883 +or- 0.773 ug/kg fat b) 0.58 +or- 0.35 ug/kg fat c) 0.99 +or- 0.99 ug/kg fat	a) 154 samples, 0.032 +or- 0.028 ug/kg whole milk b) Rural residents, 19 samples c) Urban residents, 51 samples 3-6 days postpartum. Higher levels with smoking and urban residence 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.B. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442
178 Milk		GC	50	260-5700 ppb	2000 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-86 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
179 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 ng/ml	a) Pittsburgh, PA, 2 samples b) Charleston, 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, H.D. Harris, B.S.H., III Pellizzari, E.D. Toner, K.B. Waddell, B.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
180 Milk, fat				Not given	4497 ug/kg	85 samples-each is average from 20 mothers. Milk obtained from lactaria in Slovakia, 1971-1973. Values estimated from graph. PESTICIDES; MILK; FATS; CZECHOSLOVAKIA; HEXACHLOROXYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Szokolay, A. Kosival, L. Uhnak, J. Madaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
181 Milk, fat		GC	a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 2.0 ug/kg b) 1.7 ug/kg c) 1.9 ug/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Westoo, G. 1974 Ambio 3(2):79-83
182 Milk, fat		GC-EC	a) 53 b) 33	a) 0.173-8.12 ppm b) 0.258-5.18 ppm	a) 2.23 ppm b) 1.09 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROXYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, S.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Bruns, G.V. 1979 Pesticides Monitoring Journal 13(2):52-55
183 Milk, fat		GC-EC	a) 34 b) 6	a) 2.46-73.83 ppm b) 1.47-2.45 ppm	a) 14.67 ppm b) 1.920 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROXYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
184 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.71 + or - 0.88 ppm b) 1.98 + or - 1.51 ppm c) 1.94 + or - 1.04 ppm d) 1.92 + or - 0.79 ppm e) 2.02 + or - 0.99 ppm f) 1.60 + or - 0.64 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; PESTICIDES; DDE; ORGANIC CHLORINE COMPOUNDS; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15

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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
185 Milk, whole		GC-EC	57	0.01-1.72 ppm	0.227 ppm	Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; BIOACCUMULATION; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; PLACENTA; ARKANSAS; MISSISSIPPI	Strassman, S.C. Kutz, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
186 Milk, whole		TLC GC/MS GC-EC	57	0.01-1.72 ppm	0.22 ppm	100% positive samples. Samples from lactating women in selected areas of Arkansas and Mississippi. PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.E. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)
187 Milk, whole		GC-EC	a) 34 b) 38 c) 39 d) 54	a) 0.025-0.516 ppm b) 0.006-0.109 ppm c) 0.019-0.699 ppm d) 0.007-0.282 ppm	a) 0.178 ppm b) 0.035 ppm c) 0.220 ppm d) 0.095 ppm	a) Mothers from Aveiro, Portalegre, and Setubal, Portugal b) Mothers from Viseu and Braganca, Portugal c) Mothers from Evora and Lisbon, Portugal d) Mothers from Faro, Guarda, Porto, Viana do Castelo, and Vila Real, Portugal Samples taken in 1972. PESTICIDES; DDT; DDE; DIELDRIN; MILK; PORTUGAL	Graca, I. Fernandes, A.H.S.S. Mourao, H.C. 1974 Pesticides Monitoring Journal 8(3):148-156
188 Milk, whole		GC-EC	22	0.015-0.112 ppm	0.061 ppm	Survey, Western Australia, 1970-1971 22 nursing mothers, wt 46-66 kg, living within a 30 mi radius of Perth, Western Australia MILK; PESTICIDES; AUSTRALIA; DDT; DDE; DIELDRIN; HEXACHLOROBENZENE	Stacey, C.I. Thomas, B.V. 1975 Pesticides Monitoring Journal 9(2):64-66
189 Milk, whole		GC	a) 14 b) 5 c) 18	a) Not given b) Not given c) Not given	a) 0.065 ug/kg b) 0.052 ug/kg c) 0.059 ug/kg	a) Pooled samples, 1967 b) Pooled samples, 1968-1969 c) Pooled samples, 1971-1972 Women in Stockholm, Sweden PESTICIDES; POPULATION EXPOSURE; MILK; DDT; DDE; BIOACCUMULATION; SWEDEN	Vento, G. 1974 Ambio 3(2):79-83
190 Milk, whole		GC TLC	25	0.0095-0.1590 ppm	0.0717 + or - 0.0114 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDE; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, H.C. Bhargava, A.K. Seth, T.D. Krishna Murli, C.R. Kutty, D. 1981 Environmental Research 24:24-32

Fluoride
16984-48-8
F
Atw 18.9984

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
191 Milk				2.1-15.5 ug/dl	Not given	Women in Birmingham, Bristol, Cardiff, Edinburgh, and Newcastle. SODIUM; FLUORINE; IODINE; METALS; MILK; UNITED KINGDOM	Anon 1977 Lancet 1(8017):918
192 Milk	Inhalation		1	a) 2.4-7.8 uM b) 38.0-85.0 uM	a) Not given b) Not given	a) Inorganic F b) Organic F Levels 21.5-44.5 hr after methoxyflurane was given as anesthetic during labor. Patient at a Rochester, NY hospital DRUGS; FLUORINE COMPOUNDS; METABOLITES; BLOOD; MILK; INFANTS; NEW YORK; ADULTS	Fry, B.W. Taves, D.R. 1974 American Journal of Obstetrics and Gynecology 119(2):199-204

Hexachlorobenzol (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
193 Milk		GC TLC	a) 50 b) 15 c) 6	a) 1.7-60.5 ppb b) Not given c) Not given	a) 9.7 ppb b) 7.7 ppb c) 10.0 ppb	a) All samples b) Colostrum c) 9-16 wk after birth of infant Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539

Iodide
20461-54-5
I
Atw 127.9

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
194 Milk				2-12 ug/dl	Not given	Women in Birmingham, Bristol, Cardiff, Edinburgh, and Newcastle. SODIUM; FLUORINE; IODINE; METALS; MILK; UNITED KINGDOM	Anon 1977 Lancet 1(8017):918

Iron
7439-89-6

Fe
AtN 55.847, BP 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
195 Milk		AAS	50	Less than 0.1-1.6 ug/ml	0.21 ug/ml	Analysis of variance suggests one sample of milk/individual does not provide a representative estimate of Fe content. Data given for variations by maternal age, parity, lactation history and for several experimental periods. Samples from Pennsylvania mothers. 42 subjects were between the ages of 20 and 30, while 8 were over 30. All subjects had healthy, full-term infants. COPPER; IRON; ZINC; METALS; MINERALS; METABOLISM; LACTATION; DIETS; MILK; NEWBORN; PENNSYLVANIA	Picciano, M.F. Guthrie, H.A. 1976 American Journal of Clinical Nutrition 29:242-254
196 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 0.49 + or - 0.05 ug/ml b) 0.43 + or - 0.04 ug/ml c) 0.42 + or - 0.06 ug/ml d) 0.38 + or - 0.05 ug/ml e) 0.39 + or - 0.09 ug/ml f) 0.42 + or - 0.08 ug/ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 no lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae and 16 multiparae. BLOOD SERUM; MILK; METALS; LACTATION; HAIR; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.B. 1979 American Journal of Clinical Nutrition 32:2301-2306
197 Milk		AAS	15	0.26-0.73 ug/ml	0.41 ug/ml	0.1-19 no post partum. 15-46% bound to lipid fraction. Healthy Swedish mothers. MILK; IRON; METALS; SWEDEN; TRACE ELEMENTS	Franssow, G-B. Lonnardal, B. 1980 Journal of Pediatrics 96(3):380-384
198 Milk						Review. Research leading to present understanding of human requirements. BIOACCUMULATION; DIETS; FOOD ADDITIVES; FOODS; LACTATION; MENSTRUATION; PREGNANCY; RADIOISOTOPES; RATS; PIGS; IRON; METALS; BLOOD; BODY; HAIR; LIVER; MILK; NAILS; SKIN; SPLEEN; URINE; REVIEW; ADOLESCENTS; ADULTS; AGE; CHILDREN; INFANTS; ANEMIA	Bovering, J. Sanchez, A.H. Irwin, H.I. 1976 Journal of Nutrition 106(7):985-1074

L-Ascorbic acid
50-81-7
C6-H8-O6
MW 176.12, MP 190-192 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
199 Milk						Review. Research leading to present understanding of human requirements. Data on saturation levels in plasma, serum and white blood cells. Levels in body, milk and urine also reported. GUINEA PIGS; ADOLESCENTS; ADULTS; AGE; CHILDREN; INFANTS; SEX; ORAL DISEASES; SKIN DISEASES; BLOOD; BODY; MILK; URINE; DRUGS; ORAL CONTRACEPTIVES; REVIEW; VITAMIN C; DIETS; FOODS; LACTATION; MENSTRUATION; METABOLITES; PREGNANCY; RADIOISOTOPES; SMOKING	Irvin, M.I. Hutchins, B.K. 1976 Journal of Nutrition 106 (6):823-879

Magnesium
7439-95-4
Mg
At 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
200 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 31 ± or - 1.7 ug/ml b) 37 ± or - 2.7 ug/ml c) 26 ± or - 3.3 ug/ml d) 29 ± or - 4.7 ug/ml e) 30 ± or - 4.6 ug/ml f) 26 ± or - 5.1 ug/ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 no lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae and 16 multiparae. BLOOD SERUM; MILK; METALS; LACTATION; HAIR; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.R. 1979 American Journal of Clinical Nutrition 32:2301-2306
201 Milk		AAS	a) 76 b) 77 c) 23 d) 78 e) 29	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 40.38 ug/ml b) 31.65 ug/ml c) 29.13 ug/ml d) 32.0 ug/ml e) 29.0 ug/ml	a) Colostrum, high and low income groups b) After lactation 1-3 months, high and low income groups c) After lactation > or = 13 months, high and low income groups d) After lactation 1-3 months, low income group e) After lactation 1-3 months, high income group Additional data available. No significant difference between income groups. Women from urban and rural India. METALS; TRACE ELEMENTS; COPPER; MAGNESIUM; ZINC; MILK; COMPARATIVE EVALUATIONS; URBAN AREAS; RURAL AREAS; INDIA	Rajalakshmi, K. Srikantia, S.G. 1980 American Journal of Clinical Nutrition 33:664-669

Manganese
7439-96-5
Mn

Atv 54.9380, BP 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
202 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.98 ± or - 0.21 ug/100 ml b) 2.38 ± or - 0.33 ug/100 ml c) 2.53 ± or - 0.39 ug/100 ml d) 1.75 ± or - 0.27 ug/100 ml e) 1.41 ± or - 0.51 f) 1.99 ± or - 0.86 ug/100 ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 no lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae and 16 multiparae. BLOOD SERUM; MILK; METALS; LACTATION; HAIR; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.P. 1979 American Journal of Clinical Nutrition 32:2301-2306
203 Milk						Review REVIEW; METALS; TRACE ELEMENTS; COPPER; MANGANESE; SELENIUM; CHROMIUM; NEWBORN; FETUS; BLOOD PLASMA; ERYTHROCYTES; MILK; LIVER; UNITED KINGDOM; NUTRITIONAL DEFICIENCIES; AMNIOTIC FLUID	Shaw, J.C.L. 1980 American Journal of Diseases of Children 134:74-81
204 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food processing techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, B.E. Robinson, M.F. 1978 New Zealand Medical Journal 87(603):3-8

Mercury
7439-97-6
Hg

Atv 200.59, BP -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
205 Milk	Ingestion	AAS	76	a) Not given b) Not given	a) 7.6 ng/ml b) 3.3 ng/ml	a) Coastal area b) Urban area Samples from 38 maternal-infant pairs from Anchorage and the Yukon-Kuskokwim Delta hospitalized for childbirth. Effects on newborn weight or vital signs not evident. MERCURY; NEWBORN; PREGNANCY; PLACENTA; METALS; FOODS; FISHES; SEALS; BLOOD PLASMA; ERYTHROCYTES; MILK; HAIR; INFANTS; ALASKA; DIETS; BIRDS	Galster, W.A. 1976 Environmental Health Perspectives 15:135-140

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Mercury
7439-97-6

Hg
Atm 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

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
206 Milk		AAS	32	Not given	0.93 ppb	100 maternal-umbilical cord blood pairs, 38 placentae, and 32 breast milk samples from patients at the University of Iowa Hospitals. BLOOD; UMBILICAL CORD; LACTATION; BREAST; MILK; MERCURY; METALS; PLACENTA; IOWA	Pitkin, R.M. Bahne, J.A. Filer, L.J., Jr. Reynolds, W.A. 1976 Proceedings of the Society for Experimental Biology and Medicine 151:565-567
207 Milk	Ingestion Placental	AAS	34	0.4-9.8 ppb	3.6 ppb	Levels represent background of Hg in breast milk of Japanese women. Study at Sunida Obstetric Hospital and Oshima Clinic of Toho University, Tokyo, Japan, July - November, 1974. URBAN AREAS; MERCURY; METHYL MERCURY COMPOUNDS; DIETS; METALS; JAPAN; FETUS; BLOOD; MILK; HAIR	Fujita, H. Takabatake, E. 1977 Bulletin of Environmental Contamination and Toxicology 18(2):205-209
208 Milk						Review. Mercury poisoning in pregnancy, data based on sources of contamination, maternal uptake, and distribution. Mental confusion, convulsions, & coma in adults. Children born with brain damage, chorea, ataxia, tremors, seizures, and mental retardation. IOWA; IRAQ; JAPAN; NEW MEXICO; SWEDEN; TENNESSEE; FETUS; INFANTS; MENTAL RETARDATION; METAL POISONING; AMNIOTIC FLUID; BLOOD; BODY; BRAIN; HAIR; MILK; PLACENTA; URINE; MERCURY; METALS; BIOACCUMULATION; DRINKING WATER; FOOD CONTAMINATION; INHALATION; LACTATION; PREGNANCY; REVIEW	Koss, S.J. Longo, L.D. 1976 American Journal of Obstetrics and Gynecology 126(3):390-409
209 Milk, whole	Ingestion	AAS	34	0.4-9.8 ppb	3.6 ppb	Levels represent background of Hg in breast milk of Japanese women. Study at Sunida Obstetric Hospital and Oshima Clinic of Toho University, Tokyo, Japan, July - November, 1974. URBAN AREAS; MERCURY; METHYL MERCURY COMPOUNDS; DIETS; METALS; JAPAN; FETUS; BLOOD; MILK; HAIR	Fujita, H. Takabatake, E. 1977 Bulletin of Environmental Contamination and Toxicology 18(2):205-209

Methylsulfone PCB (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
210 Milk, fat		GC	1	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	a) 0.59 ppm b) 0.77 ppm c) 0.74 ppm d) 0.61 ppm e) 0.37 ppm f) 0.17 ppm g) 0.22 ppm h) 0.17 ppm i) 0.15 ppm	a) Aug, 1975 b) Sept, 1975 c) Oct, 1975 d) Dec, 1975 e) Feb, 1976 f) Apr, 1976 g) June, 1976 h) Aug, 1976 i) Nov, 1976 Samples from a woman who had formerly been employed in a capacitor factory for four years handling Kanechlor (KC) 300 and 500. CHLORINE ORGANIC COMPOUNDS; METABOLITES; MILK; OCCUPATIONAL HAZARDS; POLYCHLORINATED BIPHENYLS	Yoshida, S. Nakanura, A. 1979 Bulletin of Environmental Contamination and Toxicology 21:111-115

Nicotine (8 CI)
Pyridine, 3-(1-methyl-2-pyrrolidyl)-, (S)- (9 CI)
54-11-5
C10-H14-N2
MW 162.23, BP <-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
211 Milk	Inhalation	GC	15	a) <20-512 ppb b) 0	a) 91 ppb b) 0	a) Smokers b) Nonsmokers Samples during Oct 1973-July 1974 were from white, urban, middle-class donors from metropolitan Nashville. Concentrations in milk should not contraindicate breast feeding by mother who smokes the infant exposure, however is not limited to that nicotine in milk. The results offer one further reason for mothers to reduce or stop smoking. SMOKING; MILK; INFANTS; NICOTINE; DRUGS	Ferguson, B.B. Wilson, D.J. Schaffner, W. 1976 American Journal of Diseases of Children 130:837-839

Phenol, 2,2'-methylenebis(3,4,6-trichloro-
70-30-8
C13-H6-Cl6-O2
MW 406.92, BP 164-165 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
212 Milk		CC GC-EC	a) 6 b) 5	a) "trace" (<ppb)-9.5 ppb b) undetectable-8.3 ppb	a) 5.7 ppb b) Not given	a) Collected before FDA restrictions b) Collected after FDA restrictions In b), 1 sample had 8.3 ppb, 4 had "trace" or undetectable levels. Six human milk samples obtained in 1971 and 5 samples obtained in 1973 from white, urban middle-class nursing mothers. MILK; CHLORINATED HYDROCARBONS; LACTATION; DRUGS; HEXACHLOROPHENE	West, R.W. Wilson, D.J. Schaffner, W. 1975 Bulletin of Environmental Contamination and Toxicology 13(2):167-169

Polybrominated biphenyls (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
213 Milk		GC	5	0.21-92.66 ppm	25.63 ppm	Residents of dairy farms in Mid-Michigan who had been exposed to PBBs. Controls from farms in the same geographical area. BROMINE ORGANIC COMPOUNDS; FARMS; FIRE RETARDANTS; FOOD CONTAMINATION; BLOOD; BIOACCUMULATION; CHILDREN; ADULTS; ADIPOSE TISSUE; ANIMAL POPULATIONS; POLYBROMINATED BIPHENYLS; BROMINATED HYDROCARBONS; RURAL AREAS	Humphrey, H.E.B. Mayner, M.S. 1975 Trace Substances in Environmental Health - IX, D.D. Hemphill (Ed.), Proceedings of University of Missouri's 9th Annual Conference on Trace Substances in Environmental Health. University of Missouri, Columbia, MO pp. 57-63
214 Milk	Ingestion					Review Persons in Michigan exposed to contaminated products. No acute or short-term illness could be clearly attributed to exposure to PBB. POLYBROMINATED BIPHENYLS; FOOD CONTAMINATION; ANIMAL POPULATIONS; MICHIGAN; FIRE RETARDANTS; BLOOD; ADIPOSE TISSUE; MILK; REVIEW	Danckel, A.E. 1975 Journal of the American Veterinary Medical Association 167(9):838-841
215 Milk						Review of Firemaster contamination of cattle feed in Michigan and recommendations for nursing mothers JAPAN; ADULTS; INFANTS; SKIN DISEASES; MILK; REVIEW; POLYBROMINATED BIPHENYLS; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; FIRE RETARDANTS; FOOD CONTAMINATION; FOODS; LACTATION; POPULATION EXPOSURE	Miller, E.W. Finberg, L. 1977 Journal of Pediatrics 90(3):510-512
216 Milk, fat	Ingestion		a) 53 b) 42	a) Not detected-1.2 ppm b) Not detected-0.5 ppm	a) Not given b) Not given	a) Lower peninsula-51/53 had detectable levels b) Upper peninsula-18/42 had detectable levels Residents of 2 distinct areas of Michigan, ages 14 to 45 yr, who gave birth during August 1976. BIPHENYL COMPOUNDS; BROMINE; MILK; MICHIGAN	Brilliant, L.B. Anberg, G.V. Ishister, J. Humphrey, H. Wilcox, K. Eyster, J. Bloomer, A.W. Price, H. 1978 Lancet 2(8091):643-646

Polychlorinated quaterphenyls (No postings in CHEMLINE).

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
217 Milk		GC/MS	1	Not applicable	0.3 ppb	PCB worker 37 yr old Japanese JAPAN; ADULTS; AUTOPSIES; CHILDREN; INFANTS; DISEASES; ADIPOSE TISSUE; BLOOD; INTESTINES; LIVER; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED QUATERPHENYLS; FOOD CONTAMINATION; HEALTH HAZARDS	Kashimoto, T. Miyata, H. Kunita, H. 1981 Food and Cosmetics Toxicology 19:335-340

Selenium

7782-49-2

Se

Atw 78.96, BP 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
218. Milk		Fluorometry	241	0.007-0.060 ppm	0.018 ppm	The range of average concentrations from various cities was from 0.013 ppm in Akron, Ohio, to 0.028 ppm in Sioux Falls, SD. Most were within 0.016 to 0.024 ppm Se. Only 3 were in the range of 0.052 to 0.060 ppm Se. The 211 subjects who donated milk samples were normal, noninstitutionalized, nonpregnant women, who lived within 400 km of their respective cities for at least one year. Average age of the milk donors was 27.4 yr. and average numbers of days postpartum when samples collected was 183 days. MILK; BREAST; URBAN AREAS; SELENIUM; METALS; SOUTH DAKOTA; UTAH; MONTANA; OREGON; PENNSYLVANIA; ARIZONA; MISSOURI; IOWA; CALIFORNIA; GEORGIA; WYOMING; TEXAS; OKLAHOMA; COLORADO; NEW YORK; CONNECTICUT; OHIO	Shearer, T.R. Hadjimarkos, D.S. 1975 Archives of Environmental Health 30(5):230-233
219 Milk						Review REVIEW; METALS; TRACE ELEMENTS; COPPER; MANGANESE; SELENIUM; CHROMIUM; NEWBORN; FETUS; BLOOD PLASMA; ERYTHROCYTES; MILK; LIVER; UNITED KINGDOM; NUTRITIONAL DEFICIENCIES; AMNIOTIC FLUID	Shaw, J.C.L. 1980 American Journal of Diseases of Children 134:74-81
220 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 $\pm$ 4.9 ng/ml b) 41.2 $\pm$ 17.3 ng/ml c) 15.7 $\pm$ 4.9 ng/ml d) 16.3 $\pm$ 4.8 ng/ml e) 14.4 $\pm$ 1.6 ng/ml f) 15.2 $\pm$ 3.2 ng/ml g) 14.1 $\pm$ 3.2 ng/ml h) 15.9 $\pm$ 3.4 ng/ml	a) 8 mothers, sampled 3x/day before nursing, at 1, 2, and 3 no postpartum b) 8 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 no lactation f) Sampled after nursing at 1 no lactation g) Sampled before nursing at 2 no lactation h) Sampled after nursing at 2 no 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 no postpartum, IL ILLINOIS; ADULTS; INFANTS; BLOOD SERUM; MILK; METALS; SELENIUM; DIETS; FOODS; LACTATION	Smith, L.H. Picciano, M.F. Milner, J.A. 1982 American Journal of Clinical Nutrition 35:521-526

Sodium, ion (Na⁺)
17341-25-2
Na
At# 22.98977

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
221 Milk				11-20 mg/dl	Not given	Women in Birmingham, Bristol, Cardiff, Edinburgh, and Newcastle. SODIUM; FLUORINE; IODINE; METALS; MILK; UNITED KINGDOM	Anon 1977 Lancet 1(8017):918

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Technetium, isotope of mass 99
14133-76-7
Tc
At# 98.9062, BP about 2250 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
222 Milk	Injection	Radionetry	1	a) $1 \times 10^{(E+6)}$ cps [$1.04 \mu\text{Ci}/\frac{1}{4}$ ml b) $1.96 \times 10^{(E+2)}$ cps [$2.04 \times 10^{(E-4)}$ $\mu\text{Ci}/\frac{1}{4}$ ml]	a) Not given b) Not given	a) Peak 7 hr after administration b) 48 hr after administration (slightly above background) $1.9 \times 10^{(E+10)}$ cps (or 20 mCi) injected. Specific activity not given. Data available for intermediate time points. 29 yr old lactating mother, 7 wk postpartum. LACTATION; MILK; METALS; TECHNETIUM; RADIOISOTOPES; ORLO	Pittard, W.S. Bill, K. Fletcher, S.D. 1979 Journal of Pediatrics 94(4):605-607

64

Tocopherol
1406-66-2
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
223 Milk			8	0.22-0.50 mg/dl	Not given	6 samples of breast milk Mothers of premature infants VITAMINS; NEWBORN; BLOOD PLASMA; MILK; COMPARATIVE EVALUATIONS; INFANTS; DIETS; NUTRITIONAL DEFICIENCIES; NUTRITIONAL DISORDERS	Bell, E.E. Brown, E.J. Hilner, R. Sinclair, J.C. Zepursky, A. 1979 Pediatrics 63(6):830-832

Uracil, 6-propyl-2-thio- (8 CI)
 4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thioxo- (9 CI)
 51-52-5
 C7-H10-N2-O-S
 MW 170.25

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
224 Milk	Ingestion	Colorimetry	9	0.7-0.5 ug/ml	Not given	1.5 and 4 hr means. Initial value, 0.55 ug/ml at 0.5 hr. Dose, 400 ug. 4 hr excretion, mean of 0.025% of dose. Estimated from graphs. Lactating, euthyroid healthy women, 1-8 months after delivery, ages 21-34 yr. 2 treated for Graves disease. DRUGS; MILK; BLOOD SERUM; LACTATION; DENMARK; HEALTH HAZARDS	Kampmann, J.P. Hansen, J.M. Johansen, K. Helweg, J. 1980 Lancet 1(8171):736-738

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
225 Milk	Ingestion	GC	1	a) Not given b) Not given	a) 0.18 ug/ml b) 0.46 ug/ml	a) 62 hr after birth, 16 hr after 250-mg dose b) 130 hr after birth, 3 hr after 250-mg dose 27-yr-old woman with petit mal, focal motor seizures, and occasional grand mal first seen at 33 wk gestation. Infant delivered at 39 wk. OREGON; DRUGS; DRUG THERAPY; PLACENTA; FETUS; MILK; NEWBORN; INFANTS; NEUROLOGICAL DISEASES; BLOOD; BLOOD SERUM; ANTICONVULSANTS; LACTATION; UMBILICAL CORD	Dickinson, R.G. Harland, R.C. Lynn, R.K. Smith, B. Gerber, N. 1979 Journal of Pediatrics 94(5):832-835

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
226 Milk	Inhalation Ingestion	NA	5	0.5-1.2 ng/g dry wt	Not given	Total body pool is estimated at 106 ug, based on organ weight of the ICRP Reference Man (10 kg bone at 3 ug/g, 5 kg blood at < or = 0.2, 28 kg muscle at 0.5, 15 kg fat at 0.7, 1.8 kg liver at 10, 1.4 kg brain at 0.7, 1 kg lung at 30, 0.3 kidney at 5). Vanadium, generally considered essential for growth in mammals, is usually low in foodstuffs. The low level in milk, eggs, and some other tissues imply that its requirement for growth is minimal and probably less than previously estimated. METALS; VANADIUM; URINE; FECES; HAIR; BONES; TEETH; KIDNEYS; LIVER; BRAIN; THYROID GLANDS; HEART; ADIPOSE TISSUE; MUSCLES; SPLEEN; PANCREAS; LUNGS; BLOOD	Byrne, A.E. Kosta, L. 1978 Science of the Total Environment 10:17-30

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
227 Milk		AAS	50	0.14-3.95 ug/ml	1.62 ug/ml	Since most observed variances were accounted for by variations among mothers, a representative estimate could probably be obtained from analysis of one sample. Samples from Pennsylvania mothers. 42 subjects were between the ages of 20 and 30, while 8 were over 30. All subjects had healthy, full-term infants. COPPER; IRON; ZINC; METALS; MINERALS; METABOLISM; LACTATION; DIETS; MILK; NEWBORN; PENNSYLVANIA	Picciano, H.F. Guthrie, H.A. 1976 American Journal of Clinical Nutrition 29:242-254
228 Milk		AAS	a) 28 b) 39 c) 23 d) 13 e) 28 f) 30	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 1.60 ± or - 0.23 ug/ml b) 1.05 ± or - 0.15 ug/ml c) 0.75 ± or - 0.11 ug/ml d) 0.63 ± or - 0.09 ug/ml e) 0.69 ± or - 0.18 ug/ml f) 0.60 ± or - 0.19 ug/ml	a) 1-3 no lactation b) 4-6 no lactation c) 7-9 no lactation d) 10-12 no lactation e) 13-18 no lactation f) 19-31 no lactation White women, 19-42 yr age, 22 primiparae and 16 multiparae. BLOOD SERUM; MILK; HAIR; METALS; LACTATION; CALCIUM; MAGNESIUM; MANGANESE; IRON; COPPER; ZINC	Vaughan, L.A. Weber, C.W. Kemberling, S.R. 1979 American Journal of Clinical Nutrition 32:2301-2306
229 Milk		AAS	a) 76 b) 77 c) 23 d) 79 e) 25	a) Not given b) Not given c) Not given d) Not given e) Not given	a) 5.32 ug/ml b) 2.00 ug/ml c) 1.16 ug/ml d) 2.0 ug/ml e) 2.5 ug/ml	a) Colostrum, high and low income groups b) After lactation 1-3 months, high and low income groups c) After lactation > or = 13 months, high and low income groups d) After lactation 1-3 months, low income group e) After lactation 1-3 months, high income group Significant difference between income groups at 1-3 months but not at 4-6 months. Additional data available. Women from urban and rural India. METALS; TRACE ELEMENTS; COPPER; MAGNESIUM; ZINC; MILK; COMPARATIVE EVALUATIONS; URBAN AREAS; RURAL AREAS; INDIA	Rajalakshmi, K. Srikantia, S.G. 1980 American Journal of Clinical Nutrition 33:664-669
230 Milk	Ingestion					Review. Profile of healthy subjects. Baseline data for determining changes in nutritional status from industrial food poisoning techniques. NEW ZEALAND; ADULTS; FETUS; INFANTS; BLOOD SERUM; HAIR; KIDNEYS; LIVER; MILK; REVIEW; DIETS; FOODS; SOILS; VEGETATION; CADMIUM; COPPER; MANGANESE; METALS; TRACE ELEMENTS; ZINC	Guthrie, S.E. Robinson, H.F. 1978 New Zealand Medical Journal 87(603):3-8

1,3,4-Metheno-1H-cyclobuta (cd) pentalene, 1, 1a, 2, 2, 3, 3a, 4, 5, 5, 5a, 5b, 6-dodecachlorooctahydro-
2385-85-5
C10-C12
MW 545.6, MP 485 C, VP 6X10(E-6) mm Hg at 50 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
231 Milk, fat		HPLC MS GC-EC	14	a) 6.4-21.5 ng/g fat b) 2.3-11.1 ng/g fat	a) Not given b) Not given	a) Mass spectrometric method (MS) b) Gas chromatographic method (GC) Poor agreement between MS and GC results. Data from GC are questionable. Mirex in 3 of 14 samples analyzed. 14 human milk samples (5 from Ontario, 2 from Eastern, 3 from Central and 4 from the Western region) MILK; FATS; PESTICIDES; ULTRAVIOLET RADIATION; CHLORINATED HYDROCARBONS; CANADA; BREAST	Has, J. Davies, D.J. Siles, W. 1978 Bulletin of Environmental Contamination and Toxicology 19:564-573

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
232 Milk		GC TLC	1	Not applicable	21.8 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539
233 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) Not detected b) 0-0.090 ppm c) 0-0.090 ppm d) Not given	a) Not detected b) 0.004 ppm c) 0.002 ppm d) 0.00004 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteaache, A. Polo Villar, L.H. Lopez-Gomez, R. Jodral Villarejo, R. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35(206):93-110
234 Milk		GC-EC	154	a) 0-0.74 mg/kg fat b) Not given c) Not given	a) 0.041 +or- 0.068 mg/kg fat b) 0.03 +or- 0.03 mg/kg fat c) 0.05 +or- 0.10 mg/kg fat	a) 0.001 +or- 0.003 mg/kg whole milk, all samples b) Rural residents, 19 samples c) Urban residents, 51 samples 3-6 days postpartum. 3% exceeded Codex Alimentarius Commission limits. No correlation with age or place of residence. 18-38 yr olds, Canada ALDRIN; CANADA; AGE; MILK; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; POLYCHLORINATED BIPHENYLS; POPULATION EXPOSURE; RURAL AREAS; SMOKING; URBAN AREAS	Dillon, J.C. Martin, G.B. O'Brien, H.T. 1981 Food and Cosmetics Toxicology 19:437-442

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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, BP 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
235 Milk, whole		GC TLC	25	0.0045-0.1811 ppm	0.0298 +or- 0.0094 ppm S.E.	24 hr after parturition 19-35 yr old mothers, no history of exposure to pesticides. India DDT; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, M.C. Bharqava, A.K. Seth, T.D. Krishna Murti, C.R. Katty, D. 1981 Environmental Research 24:24-32

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, BP 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
236 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 0.16-0.47 ppm b) 0-2.67 ppm c) 0-1.25 ppm	a) 0.2891 ppm b) 0.9056 ppm c) 0.4590 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy Malignant tissue, adjacent to apparently normal glandular and adipose tissues of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCYCLOHEXANE; DDD; HEPTACHLOR EPOXIDE	Vassermann, H. Nogueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cocos, S. Vassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
237 Milk		GC-EC	57	Trace-0.05 ppm	0.012 ppm	Residue levels were below instrument sensitivity and could not be confirmed. Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; BIOACCUMULATION; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; PLACENTA; ARKANSAS; MISSISSIPPI	Strassman, S.C. Kutz, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
238 Milk		CC GC-EC	6	a) Not detectable-0.25 ppm b) Not detectable-0.012 ppm	a) 0.05 ppm b) 0.003 ppm	a) Values for milk fat b) Values for whole milk Samples from residents of Hawaii collected from 1964-1973 PESTICIDES; HAWAII; FETUS; FETAL MEMBRANES; MILK; UMBILUS; BLOOD SERUM; DDT; DDE; DIELDRIN	Klenner, H.W. Budy, A.M. Takahashi, V. Malay, T.J. 1977 Clinical Toxicology 11(1):71-82

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
 2,7:3,6-Dimethanonaphth(2,3-b) oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
 60-57-1
 C12-H8-Cl6-O
 MV 380.93, BP 176-177 C, VP 7.78X10 (E-7) mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
239 Milk		TLC GC	a) 59 b) 15 c) 97	a) 0.9-2.6 ug/kg b) 0.8-1.8 ug/kg c) 0.4-1.3 ug/kg	a) 1.4 ug/kg b) 1.1 ug/kg c) 0.7 ug/kg	a) Nov 1971-Dec 1972 b) June-Nov 1974 c) Mar 1976-Mar 1977 Each case represents a pooled sample from 10-20 mothers. Samples from women in Stockholm, Sweden PESTICIDES; SWEDEN; MILK; BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; CHLOROBENZENES; POLYCHLORINATED BIPHENYLS; DIELDRIN; DDT; DDE; HEXACHLOROCYCLOHEXANE	Nestoo, G. Noren, K. 1978 Ambio 7(2):62-64
240 Milk		GC	2	0.10-0.13 ug	0.12 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Res, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
241 Milk		GC-EC	a) 5 b) 5	a) Not given b) Not given	a) 1 gamma/day b) <0.001 ppa (trace)	a) Breast-feeding mothers with one child b) Breast-feeding mothers with twins Data for 1974 Two groups of breast-feeding mothers, one group feeding one infant and the other group feeding twins. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; BREAST; INFANTS; FOODS	Adanovic, V.V. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285
242 Milk			57	Trace-0.05 ppa	<0.01 ppa	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, P.W. Strassman, S.C. Yohn, A.B. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
243 Milk		GC TLC	6 of 50	0.3-3.6 ppb	2.75 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.F. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539

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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)oxirane, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha) - (9 CI)
 60-57-1
 C12-H8-Cl6-O
 MW 380.93, MP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
244 Milk		GC	2 of 51	Not given	0.014 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Ararbruster, J. Kettelhut, L.L. Drucker, S. 1977 American Journal of Clinical Nutrition 30:1106-1109
245 Milk		GC	a) 20 b) 12 c) 40 d) 38 e) 19 f) 20 g) 19	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given g) Not given	a) 0.1 ppm, fat basis b) 0.15 ppm, fat basis c) 0.17 ppm, fat basis d) 0.18 ppm, fat basis e) 0.20 ppm, fat basis f) 0.1 ppm, fat basis g) 0.14 ppm, fat basis	a) 1971 b) 1972 c) 1973 d) 1974 e) 1975 f) 1976 g) 1977 Estimated from graph Mothers in Osaka Prefecture BIPHENYL COMPOUNDS; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; JAPAN; MILK; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66
246 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-6 ng/g	a) 2 ng/g b) 1 ng/g c) 2/ ng/g d) 1 ng/g e) 2 ng/g f) 2 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
247 Milk		GC	a) 27 b) 10 c) 10 d) 40	a) 0-0.010 ppm b) Not given c) Not given d) 0.001-0.015 ppm	a) 0.002 ppm b) 0.005 ppm c) 0.070 ppm d) 0.005 ppm	a) Cotton, corn, and sesame-growing area b) Banana area c) Cotton area d) Coffee-growing area, El Salvador a)-c) in Guatemala. Highest use of pesticides on cotton. Mothers from low-income families in Guatemala and El Salvador, areas chosen to represent different degrees of use of pesticides. Overuse of pesticides a particular problem in tropical countries. Prevalence of malnutrition may contribute to health effects. AGRICULTURE; CHLORINE ORGANIC COMPOUNDS; CROP DUSTING; DDT; DIELDRIN; EL SALVADOR; FOOD CONTAMINATION; GUATEMALA; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; INSECTICIDES; MILK; NUTRITIONAL DEFICIENCIES; PESTICIDES; PESTICIDE RESIDUES	de Campos, S. Olszyna-Harzys, A.E. 1979 Archives of Environmental Contamination and Toxicology 8:43-58

(NEXT PAGE)

1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
 2,7:3,6-Dimethanonaphth(2,3-b)oxirane, 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, BP 176-177 C, VP 7.78X10⁻⁷ mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
248 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.384 ppm b) 0-0.112 ppm c) 0-0.381 ppm d) Not given	a) 0.031 ppm b) 0.010 ppm c) 0.020 ppm d) 0.0005 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Martache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, N. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35(206):93-110
249 Milk		GC	1436	97.9-242.3 ppb	164.2 + or - 436.2 ppb	Computed on fat adjusted basis Range of means for all geographic regions Nursing mothers, U.S.A. UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, P.N. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 133(4):413-422
250 Milk			a) 48 b) 34 c) 19	a) <0.01-0.25 ppm b) <0.01-0.17 ppm c) <0.01-0.08 ppm	a) 0.09 ppm b) 0.04 ppm c) 0.04 ppm	a) 1969-70 b) 1971-72 c) 1973-74 Sampling periods Level of exposure unknown Ontario residents, mean age 24-28 yr INDUSTRIAL CHEMICALS; CANADA; AGE; AUTOPSIES; ADIPOSE TISSUE; MILK; CHLORINE ORGANIC COMPOUNDS; CHLOROBIPHENYLS; DDT; DIELDRIN; HEPTACHLOROBIPHENYL; PESTICIDES; POLYCHLORINATED BIPHENYLS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Holdrinet, E.V.H. Braun, H.E. Frank, R. Stopps, G.J. Smout, H.S. McVade, J.W. 1977 Canadian Journal of Public Health 68:74-80
251 Milk						Review. Data indicate a decline in residue levels in environmental substrates since the mid-1960s, but no corresponding decline in human tissue levels. Residents of the U.S., Canada, United Kingdom, The Netherlands, 1963-1976 CANADA; NETHERLANDS; UNITED KINGDOM; UNITED STATES; ADIPOSE TISSUE; MILK; REVIEWS; PESTICIDES; AGRICULTURE; AIR POLLUTION; BIOACCUMULATION; DRINKING WATER; FOOD CONTAMINATION; PESTICIDE RESIDUES; POPULATION EXPOSURE; WATER POLLUTION	Ackerman, L. 1980 Pesticides Monitoring Journal 14(2):64-69
252 Milk			1,436 samples	a) Not given b) Not given	a) 97.9 ppb b) 242.3 ppb	a) Northeast b) Southeast, highest level 12,300 ppb Levels >1,750 ppb found in Southeast, North, South, and Midwest UNITED STATES; MILK; DIELDRIN; HEPTACHLOR EPOXIDE; OXYCHLORDANE; PESTICIDE RESIDUES	Aron 1977a Pesticide & Toxic Chemical News 5(8):10-11

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-6,7-epoxy-1,4,4a,5,6,7,8,8a-octahydro-, endo,exo- (8 CI)
 2,7:3,6-Dimethanonaphth(2,3-b) oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
 60-57-1
 C12-H8-Cl6-O
 MW 380.93, BP 176-177 C, VP 7.78x10 (E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
253 Milk		GC	50	0-95 ppb	42 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, V. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
254 Milk; fat		GC-EC	a) 53 b) 33	a) Not detectable-4.66 ppm b) Not detectable-0.081 ppm	a) 0.180 ppm b) 0.025 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.B. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
255 Milk, fat		GC-EC	a) 34 b) 6	a) 0.04-0.62 ppm b) 0.03-0.17 ppm	a) 0.15 ppm b) 0.120 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.V. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
256 Milk, fat		GC-EC		a) Not given b) Not given c) Not given d) Not given e) Not given	a) 0.086 + or - 0.063 ppm b) 0.095 + or - 0.072 ppm c) 0.050 + or - 0.040 ppm d) 0.062 + or - 0.024 ppm e) 0.052 + or - 0.025 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. PESTICIDES; DIELDRIN; ORGANIC CHLORINE COMPOUNDS; JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, H. 1979 International Archives of Occupational and Environmental Health 43:1-15

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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,2alpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
 60-57-1
 C12-H8-Cl6-0
 MW 380.93, BP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
257 Milk, whole		TLC GC/MS GC-EC	57	Trace-0.05 ppm	<0.01 ppm	28.1% positive samples Samples from lactating women in selected areas of Arkansas and Mississippi. PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.V. Strassman, S.C. Yobs, A.R. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)
258 Milk, whole		GC-EC	155	0.005-0.021 ppm	Not given	Portuguese women. Dieldrin detected in 11 cases. Samples taken in 1972. PESTICIDES; DDT; DDE; DIELDRIN; MILK; PORTUGAL	Graca, I. Fernandes, A.M.S.S. Mourao, H.C. 1974 Pesticides Monitoring Journal 8(3):148-156
259 Milk, whole		GC-EC	22	0.003-0.011 ppm	0.004 ppm	Survey, Western Australia, 1970-1971 22 nursing mothers, wt 46-66 kg, living within a 30 mi radius of Perth, Western Australia MILK; PESTICIDES; AUSTRALIA; DDT; DDE; DIELDRIN; HEXACHLOROBENZENE	Stacey, C.I. Thomas, B.W. 1975 Pesticides Monitoring Journal 9(2):64-66

4,7-Methano-1H-indene, 1,2,3,4,5,6,7,8,8-nonachloro-2,3,3a,4,7,7a-hexahydro-, (1alpha,2beta,3alpha,3aalpha,4beta,7beta,7aalpha)-
 39765-80-5
 C10-H5-Cl9
 MW 444.23

73

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
260 Milk		GC	2	0.08-0.16 ug	0.12 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCHLOROXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	See, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
261 Milk			57	Trace-0.01 ppm	<0.01 ppm	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCHLOROXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.V. Strassman, S.C. Yobs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg

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4,7-Methano-18-indene, 1,2,3,4,5,6,7,8,8-nonachloro-2,3,3a,4,7,7a-hexahydro-, (1alpha,2beta,3alpha,3aalpha,4beta,7beta,7aalpha)-
 39765-80-5
 C10-H5-Cl9
 MW 444.23

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
262 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-2 ng/g	a) 1 ng/g b) 1 ng/g c) 1 ng/g d) 1 ng/g e) 1 ng/g f) 1 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hex, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
263 Milk		GC	50	0-150 ppb	81 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
264 Milk, whole		GC-EC	57	Trace-0.01 ppm	0.010 ppm	Residue levels were below instrument sensitivity and could not be confirmed. Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; BIOACCUMULATION; MISSISSIPPI; ARKANSAS; PLACENTA	Strassman, S.C. Kutz, F.V. 1977 Pesticides Monitoring Journal 10(4):130-133
265 Milk, whole		TLC GC/MS GC-EC	57	Trace-0.01 ppm	<0.01 ppm	14.1% positive samples Samples from residents of Arkansas and Mississippi PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.V. Strassman, S.C. Yobs, A.R. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)

4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-1,2-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-Methano-2H-indeno(1,2-b)oxirene, 1a,2,3,4,5,6a,7,7-octachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 26880-88-8
 C10-H8-Cl8-O
 HW 423.77

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
266 Milk		GC	2	0.09-0.17 ug	0.13 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
267 Milk			57	Trace-0.02 ppa	<0.01 ppa	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg
268 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-2 ng/g	a) 1 ng/g b) 1 ng/g c) 1 ng/g d) 1 ng/g e) 1 ng/g f) 1 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387
269 Milk		GC	1436	75.4-116.3 ppb	95.8 + or - 195.1 ppb	Computed on fat adjusted basis Range of means for all geographic regions UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, F.H. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 133(8):413-422
270 Milk			1,436 samples	a) Not given b) Not given c) 13.2-5700 ppb	a) 80 ppb b) 116 ppb c) Not given	a) Northeast & Midwest, U.S. b) Southeast, U.S., highest level reported was 1858.3 ppb c) Nationwide, highest level from the Southwest region UNITED STATES; MILK; DIELDRIN; HEPTACHLOR EPOXIDE; OXYCHLORDANE; PESTICIDE RESIDUES; PESTICIDES	Anon 1977a Pesticide & Toxic Chemical News 5(8):10-11

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4,7-Methanoindan, 1,2,4,5,6,7,8-octachloro-1,2-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-Methano-2H-indeno(1,2-b)oxirene, 1a,2,3,4,5,6a,7,7-octachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 26880-48-8
 C10-H4-Cl8-O
 MW 423.77

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
271 Milk		GC	50	11-160 ppb	59 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCHLORHEXAN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, W. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
272 Milk, fat		GC-EC	a) 34 b) 6	a) 0.03-0.70 ppm b) 0-0.12 ppm	a) 0.13 ppm b) 0.050 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCHLORHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
273 Milk, whole		GC-EC	57	Trace-0.02 ppm	0.012 ppm	Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; BIOACCUMULATION; MISSISSIPPI; ARKANSAS; PLACENTA	Strassman, S.C. Kutz, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
274 Milk, whole		TLC GC/MS GC-EC	57	Trace-0.02 ppm	<0.01 ppm	45.6 positive samples Samples from residents of Arkansas and Mississippi PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yohn, A.R. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)

4,7-Methanoindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-Methano-2H-indeno(1,2-b)oxirane, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 1024-57-3
 C10-H5-C17-O
 MW 389.32

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
275 Mammary gland		GC-EC	a) 5 b) 9 c) 9	a) 0-0.59 ppm b) 0-1.61 ppm c) 0-0.51 ppm	a) 0.2336 ppm b) 0.3506 ppm c) 0.1282 ppm	a) Control b) Malignant c) Breast tissue adjacent to malignancy "Hexachlor" epoxide, name used in table, while heptachlor is used in text. Malignant tissue, adjacent to apparently normal glandular and adipose tissue of nine women with adenocarcinoma of the breast, obtained from the A.C. Camargo Hospital in Sao Paulo. Mammary gland and adjacent adipose tissue from 5 healthy women who died accidentally used for controls. BREAST; MAMMARY GLANDS; NEOPLASMS; ADIPOSE TISSUE; CARCINOMAS; PESTICIDES; LIPIDS; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; BIOACCUMULATION; BIPHENYL COMPOUNDS; DIELDRIN; POLYCHLORINATED BIPHENYLS; DDT; DDE; HEXACHLOROCHLOROCYCLOHEXANE; DDE; HEPTACHLOR EPOXIDE	Hassermann, H. Moqueira, D.P. Tomatis, L. Mirra, A.P. Shibata, H. Arie, G. Cucos, S. Hassermann, D. 1976 Bulletin of Environmental Contamination and Toxicology 15(4):478-484
276 Milk		GC-EC	57	Trace-0.03 ppm	0.012 ppm	Residue levels were below instrument sensitivity and could not be confirmed. Samples from 17 Negroes and 40 Caucasians in hospitals in Arkansas and Mississippi. PESTICIDES; PESTICIDE RESIDUES; MILK; BIOACCUMULATION; POPULATION EXPOSURE; MAMMARY GLANDS; LACTATION; PLACENTA; ARKANSAS; MISSISSIPPI	Strassman, S.C. Kutz, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
277 Milk		GC	2	0.05-0.10 ug	0.08 ug	Amounts varied for different feedings. Values are daily total. Samples from donors at various times of breast feeding and at different times of the day. MILK; PESTICIDES; PESTICIDE RESIDUES; POLYCHLORINATED BIPHENYLS; BIOACCUMULATION; HEXACHLOROCHLOROCYCLOHEXANE; DDT; HEXACHLOROCHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
278 Milk			57	Trace-0.03 ppm	<0.01 ppm	Lactating women in selected areas of Arkansas and Mississippi. MILK; PESTICIDES; ADIPOSE TISSUE; METABOLITES; CHLORINE ORGANIC COMPOUNDS; CHLORINATED HYDROCARBONS; LACTATION; OXYCHLORDANE; DDT; NONACHLOR; HEPTACHLOR EPOXIDE; DIELDRIN; HEXACHLOROCHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.R. 1976 International Workshop on Biological Specimen Collection, April, 1976, Luxembourg

(NEXT PAGE)

4,7-Methanoindan, 1,4,5,6,7,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-Methano-2H-indeno(1,2-b)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 1024-57-3
 C10-H5-Cl7-O
 MW 389.32

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
279 Milk		GC	29	Not given	0.0091 ppm	Higher percentages of organochlorine insecticides and PCB's in milk of mothers 20-29 years than 30-39, although the former had lower levels in plasma. Overweight women had lower levels than women of normal weight. Residues concentrated in extracted lipids of plasma and milk. Israeli women 2-4 days after normal delivery. PESTICIDES; BLOOD PLASMA; MILK; POPULATION EXPOSURE; ISRAEL; CHLORINATED HYDROCARBONS; LIPIDS; AGE; DDT; DDD; DDE; POLYCHLORINATED BIPHENYLS; HEPTACHLOR EPOXIDE; HEXACHLOROCYCLOHEXANE	Polishuk, Z.W. Bon, H. Wassermann, H. Cucos, S. Wassermann, D. Lewesch, C. 1977 Pesticides Monitoring Journal 10 (4): 121-129
280 Milk		GC TLC	18	0.6-2.6 ppb	1.57 ppb	Milk samples, hospitals in urban Oslo. 4 samples from Hallingdal, a valley in southern Norway. No occupational exposure. MILK; INSECTICIDES; LACTATION; CHLORINATED HYDROCARBONS; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; NORWAY	Bakken, A.P. Seip, H. 1976 Acta Paediatrica Scandinavica 65:535-539
281 Milk		GC	12 of 51	Not given	0.0027 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Armbruster, J. Kettelhut, L.L. Drucker, B. 1977 American Journal of Clinical Nutrition 30:1106-1109
282 Milk		GC/MS	a) 10 b) 25 c) 35 d) 10 e) 20 f) Not given	a) Not given b) Not given c) Not given d) Not given e) Not given f) 1-3 ng/g	a) 1 ng/g b) 1 ng/g c) 1 ng/g d) 1 ng/g e) 2 ng/g f) 1 ng/g	a) Eastern Canada b) Quebec c) Ontario d) Central Canada e) Western Canada f) National average, samples above 1 ng/g National Survey, 1975 BIPHENYL COMPOUNDS; CANADA; CHLORINE ORGANIC COMPOUNDS; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; HEXACHLOROCYCLOHEXANE; MILK; NONACHLOR; OXYCHLORANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hew, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387

(NEXT PAGE)

4,7-methanoindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-methano-2H-indeno(1,2-b)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 1024-57-3
 C10-H5-Cl7-O
 MW 389.32

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
283 Milk		GC	a) 27 b) 10 c) 10 d) 40	a) 0-0.008 ppm b) 0-0.21 ppm c) Not given d) 0.001-0.004 ppm	a) 0.007 ppm b) 0.003 ppm c) 0.002 ppm d) 0.003 ppm	a) Cotton, corn, and sesame-growing area b) Corn area c) Banana area d) Coffee-growing area, El Salvador a)-c) in Guatemala. Highest use of pesticides on cotton Women from low income families in Guatemala and El Salvador, chosen to represent different degrees of use of pesticides. Overuse of pesticides a particular problem in tropical countries. Prevalence of malnutrition may contribute to health effects. AGRICULTURE; CHLORINE ORGANIC COMPOUNDS; CROP DUSTING; DDT; DIELDRIN; EL SALVADOR; FOOD CONTAMINATION; GUATEMALA; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; INSECTICIDES; MILK; NUTRITIONAL DEFICIENCIES; PESTICIDES; PESTICIDE RESIDUES	de Campos, N. Olszyna-Barzys, A.E. 1979 Archives of Environmental Contamination and Toxicology 8:43-58
284 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.296 ppm b) 0-1.002 ppm c) 0-1.002 ppm d) Not given	a) 0.017 ppm b) 0.051 ppm c) 0.035 ppm d) 0.0003 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN: ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Marteneche, A. Polo Villar, L.E. Lopez-Gisenez, R. Jodral Villarejo, N. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35(206):93-110
285 Milk		GC	1436	66.1-128 PPB	91.4 ± or - 125.2 PPB	Computed on fat adjusted basis Range of means for all geographic regions Nursing mothers, U.S.A. UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, P.E. Goss, E.A. Ford, S.A. 1981 American Journal of Epidemiology 133(4):413-422
286 Milk			1,436	a) Not given b) Not given c) 15.2-2050 ppb	a) 66.1 ppb b) 128 ppb c) Not given	a) Northwest, U.S. b) Southeast, U.S. c) Nationwide sample, highest level from the Southeast region UNITED STATES; MILK; DIELDRIN; HEPTACHLOR EPOXIDE; OXICHLORDANE; PESTICIDE RESIDUES; POPULATION EXPOSURE	Anon 1977a Pesticide & Toxic Chemical News 5(8):10-11

(NEXT PAGE)

4,7-Methanotindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI)
 2,5-Methano-2H-indeno(1,2-b)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
 1024-57-3
 C10-H5-Cl7-o
 MW 389.32

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TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
287 Milk		GC	50	1-67 ppb	35 ppb	Extracted lipids, Jan 1979 to Feb 1980, 3-46 days postpartum. No significant correlation with residence, age, weight, number of children previously nursed, household use of non-persistent pesticides, or occupation of spouse. Higher, but nonsignificant levels in women with higher frequency of meat consumption, and in those in homes with pest control treatment. Healthy 18-37 yr old Hawaiians ADULTS; AGE; HAWAII; MILK; CHLORINATED HYDROCARBONS; DDE; DDT; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; LINDANE; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; DIETS; LACTATION; PESTICIDE RESIDUES; POPULATION EXPOSURE	Takahashi, M. Saidin, D. Takei, G. Wong, L. 1981 Bulletin of Environmental Contamination and Toxicology 27:506-511
288 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-0.060 ppm b) Not detectable-0.113 ppm	a) 0.002 ppm b) 0.028 ppm	a) 1966-1970 study b) 1977-1978 study 1966-70 patients (University of Alberta Hospital), 2-10 days postpartum. 1977-78 patients (public health offices of Alberta), 17-309 days postpartum. Residences, Edmonton or Alberta. MILK; PESTICIDES; HEXACHLOROCYCLOHEXANE; DDD; DDE; DDT; DIELDRIN; HEPTACHLOR EPOXIDE; HEXACHLOROBENZENE; CANADA; POLYCHLORINATED BIPHENYLS; COMPARATIVE EVALUATIONS	Currie, R.A. Kadin, V.W. Breithreits, W.E. Cunningham, G.B. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
289 Milk, fat		GC-EC	a) 34 b) 6	a) 0.02-0.37 ppm b) 0.01-0.08 ppm	a) 0.08 ppm b) 0.050 ppm	a) High pesticide usage area b) Low pesticide usage area Women living in Starkville, Mississippi (low pesticide usage) and Delta area (high pesticide usage). Samples in 1973-1975. MILK; PESTICIDES; DDE; DDD; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, R.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51
290 Milk, whole		TLC GC/MS GC-EC	57	Trace-0.03 ppm	<0.01 ppm	25.1% positive samples. Samples from lactating women in selected areas of Arkansas and Mississippi. PESTICIDES; ADIPOSE TISSUE; MILK; URINE; BIOACCUMULATION; BIPHENYL COMPOUNDS; CHLORINATED HYDROCARBONS; ARKANSAS; MISSISSIPPI	Kutz, P.W. Strassman, S.C. Tobin, A.R. 1977 Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London, (pp. 523-539)

4,7-Methanoindene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (8 CI)
 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (9 CI)
 76-84-8
 C10-85-C17
 MW 373.35, MP 95-96 C, VP 3X10 (8-4) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
291 Milk		GC	3 of 51	Not given	0.019 ppm	Random subjects of greater St. Louis, MO, metropolitan area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Araburster, J. Kettelhut, L.L. Drucker, S. 1977 American Journal of Clinical Nutrition 30:1106-1109
292 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0.405-10.823 ppm b) 0.615-11.686 ppm c) 0.405-11.686 ppm d) Not given	a) 2.556 ppm b) 2.462 ppm c) 2.505 ppm d) 0.0390 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, R. Herrera Bartheche, A. Polo Villar, L.S. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatría 35 (206):93-110

5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-(2-(1H-tetrazol-1-yl)acetamido)- (8 CI)
 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-((1H-tetrazol-1-yl)acetyl)amino)-, (6R-trans)- (9 CI)
 25953-19-9
 C14-H14-N8-O4-S3
 MW 454.5, MP 198-200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
293 Milk	Injection	Microbiological	20	1.16-1.51 ug/ml	Not given	2-4 hr after injection of 2 g. Peak at 3 hr. Lactating women in Japan ANTIBIOTICS; DRUGS; DRUG THERAPY; ADULTS; JAPAN; BLOOD SERUM; MILK; LACTATION	Yoshioka, H. Cho, K. Takimoto, S. Haruyama, S. Shimizu, T. 1979 Journal of Pediatrics 94 (1):151-152

Acetanilide, 4'-hydroxy- (8 CI)
 Acetanilide, 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
294 Milk	Ingestion	HS	3	26.5-29.1 u mol/l	27 u mol/l	Peak level within 2 hr after 500 mg, fasting. Mean area under concentration-time curve, 115.0 $\pm$ or- 29.3 umol hr/l Breast feeding need not be discontinued with conventional doses Lactating women, ages 24, 29, and 31 yr ADULTS; BLOOD PLASMA; MILK; ANALGESICS; ANTIPYRETICS; DRUG THERAPY; DRUGS; LACTATION	Bitzen, P.-O. Gustafsson, S. Jostell, K.G. Helander, A. Wahlén-Boll, E. 1981 European Journal of Clinical Pharmacology 20:123-125

Caffeine (8 CI)
 1R-Purine-2,6-dione, 3,7-dihydro-1,3,7-triethyl- (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
295 Milk	Ingestion	FLC 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, S.F. Welch, S.N. Findlay, J.N. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

Estradiol (8 CI)
 Estradiol-1,3,5(10)-triene-3,17-diol, (17beta)- (9 CI)
 50-28-2
 C18-H24-O2
 MW 272.42, MP 173-179 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
296 Milk	Vaginal	RIA	a) 3 b) 3	a) 27-1000 pg/ml b) 40-250 pg/ml	a) Not applicable b) Not applicable	a) 50 mg suppository. Peaks at 3-11 hr b) 100 mg suppository. Peaks at 3-6 hr Range of observed values up to 23 hr after dose. Healthy lactating volunteers. STEROIDS; HORMONES; MILK; LACTATION; MEASUREMENT METHODS; HEALTH HAZARDS	Hilsson, S. Nygren K-G. Johansson, E.D.B. 1978 American Journal of Obstetrics and Gynecology 132(6):653-657

Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (8 CI)
 1R-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
297 Mammary gland	Ingestion	HPLC	1	3-42 ug/g	Not applicable	1 and 4.3 hr after normalized dose of 1 g/kg 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, H.I. Riley, P.J. Hauck, J. Bennett, H.N. Stratford, H.R.L. Hinchinson, A.I. 1981 British Journal of Cancer 43:344-349

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
298 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, E.G. Fleiss, P.H. 1981 Journal of Clinical Pharmacology 21:110-113

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
299 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, H.F. Welch, R.H. Findlay, J.H. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

p-Acetophenetidine (8 CI)
 Acetanide, N-(4-ethoxyphenyl)- (9 CI)
 62-48-2
 C10-H13-N-O2
 MW 179.21, BP 134-135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
300 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, R.F. Welch, R.H. Findlay, J.H. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

Pyridoxol (8 CI)
 3,4-Pyridinedimethanol, 5-hydroxy-6-methyl- (9 CI)
 65-23-6
 C8-H11-N-O3
 MW 169.18, BP 160 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
301 Milk	Ingestion	Microbiological	a) 6 b) 8 c) 5	a) 67-177 ug/l b) 189-348 ug/l c) 256-454 ug/l	a) 129 + or - 39 ug/l b) 239 + or - 51 ug/l c) 314 + or - 52 ug/l	a) < 2.5 mg B-6/day b) 2.5-5.0 mg B-6/day c) > 5.0 mg B-6/day No effect of stage of lactation. Healthy, lactating 24-42 yr olds. MILK; INDIANA; VITAMINS; DIETS; LACTATION	West, K.D. Kirksey, A. 1976 American Journal of Clinical Nutrition 29:961-969

Salicylic acid (8 CI)
 Benzoic acid, 2-hydroxy- (9 CI)
 69-72-7
 C7-H6-O3
 MW 138.12, BP 157-159 C, BP about 211 C at 20 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
302 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, R.F. Welch, R.H. Findlay, J.H. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

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
303 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 acetylsalicylic 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; ANTIPIRENETICS; DRUGS; LACTATION; METABOLITES	Janali, F. Keshavarz, E. 1981 International Journal of Pharmacetics 8:285-290

Salicylic acid, 5-((p-(2-pyridylsulfamoyl)phenyl)azo)- (8 CI)
Benzoic acid, 2-hydroxy-5-((p-((2-pyridinylamino)sulfonyl)phenyl)azo)- (9 CI)
599-79-1
C18-H14-N4-O5-S
MW 398.39, MP 240-245 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
304 Milk	Ingestion		3	a) Not given b) Not given c) Not given d) Not given	a) 2.7 ± or - 1.8 ug/ml b) 10.3 ± or - 1.6 ug/ml c) 1.4 ± or - 0.7 ug/ml d) 0.8 ± or - 1.0 ug/ml	a) Sulphasalazine b) Total sulphapyridine c) Acetylated sulphapyridine d) Acetylated sulphapyridine glucuronide Measured 1 wk after delivery. Dose, 0.5 g 4x/day during pregnancy and puerperium. Patients with ulcerative colitis who became pregnant while on therapy. AMNIOTIC FLUID; BLOOD SERUM; GASTROINTESTINAL SYSTEM; MILK; UMBILICAL CORD; DRUG THERAPY; DRUGS; METABOLISM; METABOLITES; PREGNANCY; LACTATION	Khan, A.K.A. Trumble, S.C. 1979 British Medical Journal 2(6204):1553

Sulfanilamide, N(1)-(3,4-dimethyl-5-isoxazolyl)- (8 CI)
Benzenesulfonamide, 4-amino-N-(3,4-dimethyl-5-isoxazolyl)- (9 CI)
127-69-5
C11-H13-N3-O3-S
MW 267.30, MP 194 C (also reported 195-198 C, 192-195 C)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
305 Milk	Ingestion		6	a) Not given b) Not given c) Not given d) Not given	a) 18 ± or - 8.4 mg b) 0.45 ± or - 0.21% c) 22.8 ± or - 11.5% d) 77.1 ± or - 11.5%	a) Total sulfisoxazole b) % of maternal dose c) % of total sulfisoxazole recovered as sulfisoxazole d) % of total sulfisoxazole recovered as N4-acetyl sulfisoxazole Dose 1.0 g every 6 hr for 24 hr, 48 hr collection period Caucasians, ages 19-27 yr SULFONAMIDES; BIOACCUMULATION; LACTATION; METABOLITES; METABOLISM; ADULTS; MILK; DRUGS	Kauffman, E.E. O'Brien, C. Gilford, P. 1980 Pediatrics 97(5):839-841

Theobromine (8 CI)
 1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl- (9 CI)
 83-67-0
 C7-H8-N4-O2
 MW 180.17, MP 357 C, BP 290 C (sublimes)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
306 Milk	Ingestion	HPLC	6	3.7-7.5 ug/l	5.3 ug/l	After 113 g milk chocolate containing 280 mg theobromine and 16 mg caffeine. Peaks at 2.1-3.3 hr. Caucasians, ages 21-36 yr, wt 55-70 kg, nursing their infants 3-37 wk. Slight nausea in 3 mothers, no adverse effects on infants. BLOOD PLASMA; MILK; SALIVA; DRUGS; LACTATION; INFANTS; FOODS	Resman, B.H. Blumenthal, H.P. Jusko, W.J. 1977 Journal of Pediatrics 91(3):477-480

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
307 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. Nenthorn, T. Morito, Y. Atkinson, A.J., Jr. Patterson, S. 1980 Clinical Pharmacology and Therapeutics 28(3):404-408

Uracil, 6-propyl-2-thio- (8 CI)
 4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thio- (9 CI)
 51-52-5
 C7-H10-N2-O-S
 MW 170.25

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
308 Milk	Ingestion	Radionetry	1	0.0003-0.0001% radioactive dose/ml	Not given	6 and 24 hr after 100 mg propylthiouracil containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 0.55. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	SEAF	GENERAL INFORMATION	REFERENCE
309 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 ug/kg/day. Serum levels 83.3-102.2 ug/ml b) 5-29 days pn. Dose 10.1 ug/kg/day. Serum, 4.74-96.3 ug/ml c) 3-25 days pn. Dose 9.6 ug/kg/day. Serum, 10.2-32.8 ug/ml d) 38-47 days pn. Dose 9.5 ug/kg/day. Serum 7.6-26.8 ug/ml e) 4-12 days pn. Dose 26.7 ug/kg/day, plus 7.4 primidone/kg/day. Serum 33.3-44.6 ug/ml f) 7-82 days pn. Dose 25.8 ug/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 wall. 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

1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)-9H-thioxanthen-9-ylidene)propyl-, (3)-
 53772-82-0
 C23-H25-F3-N2-O-S
 MW 434.54

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	SEAF	GENERAL INFORMATION	REFERENCE
310 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

1,2-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-H3-04
 HW 187.18

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
311 Mammary gland	Ingestion	HPLC	1	23-33 ug/g	Not applicable	1 and 4 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, H.I. Piley, P.J. Hauck, J. Bennett, H.H. Stratford, H.R.L. MacChinton, A.I. 1981 British Journal of Cancer 43:344-349

18,19-Dinor-17alpha-pregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (+)- (8 CI)
 18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17alpha)-(+)- (9 CI)
 6533-00-2
 C21-H28-O2
 HW 312.44, MP 238-242 C (+ form), 239-241 C (- form)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
312 Milk	Ingestion	RIA	15	a) 0.16-1.50 ug/ml b) 0.29-2.50 ug/ml c) 0.08-0.45 ug/ml d) 0.16-0.63 ug/ml e) 0.11-0.66 ug/ml f) 0.22-1.10 ug/ml g) 0.06-0.20 ug/ml h) 0.10-0.30 ug/ml i) None detected j) None detected	a) 0.51 ug/ml b) 1.05 ug/ml c) 0.22 ug/ml d) 0.38 ug/ml e) 0.34 ug/ml f) 0.54 ug/ml g) 0.11 ug/ml h) 0.17 ug/ml i) Not applicable j) Not applicable	a) Prem nursing, 3 hr after 250 ug + 50 ug ethinyl estradiol b) Post nursing, 3 hr after 250 ug + 50 ug ethinyl estradiol c) Prem nursing, 23 hr after 250 ug + 50 ug ethinyl estradiol d) Post nursing, 23 hr after 250 ug + 50 ug ethinyl estradiol e) Prem nursing, 3 hr after 150 ug + 30 ug ethinyl estradiol f) Post nursing, 3 hr after 150 ug + 30 ug ethinyl estradiol g) Prem nursing, 23 hr after 150 ug + 30 ug ethinyl estradiol h) Post nursing, 23 hr after 150 ug + 30 ug ethinyl estradiol i) Prem nursing, 3 hr after 30 ug j) Post nursing, 3 hr after 30 ug Milk expressed before and after feeding time Lactating females in Sweden SWEDEN; ADULTS; BLOOD PLASMA; MILK; PROGESTOGENS; COMPARATIVE EVALUATIONS; LACTATION	Hilsson, S. Nygren, K. Johansson, E.O.B. 1977 American Journal of Obstetrics and Gynecology 129:178-184

3-Heptanone, 6-(diethylamino)-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
313 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. Interrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621

4-Imidazole-1-carboxylic acid, 3-methyl-2-thioxo-, ethyl ester (8 CI)
1H-Imidazole-1-carboxylic acid, 2,3-dihydro-3-methyl-2-thioxo-, ethyl ester (9 CI)
22232-54-8
C7-H10-N2-O2-S
MW 186.23, MP 122-125 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
314 Milk	Ingestion	Radiometry	1	0.003-0.0006% radioactive dose/ml	Not given	1 and 24 hr after 10 mg carbimazole containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 1.05. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, I.C.K. Lang, J. Alexander, V.D. 1979 Lancet 2(8150):1011

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
C18-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
315 Milk	Ingestion		6	0.10-0.81 ug/ml	Not given	1 and 5 hr after 1 g. Final measurement, 0.60 ug/ml at 6 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIMIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-7-(((2-amino-4-thiazolyl) (methoxyimino) acetyl) amino)-8-oxo -, (6R-trans)-
60846-21-1
C16-H17-N5-O7-S2
MW 455.20

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
316 Milk	Injection	Microbiological	12	0.32-0.13 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.15 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(2-thienyl) acetamido)- acetate (ester) (8 CI)
5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-(((2-thienylacetyl) amino)-, (6R-trans)- (9 CI)
153-61-7
C16-H16-N2-O6-S2
MW 396.44

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
317 Milk	Injection	Microbiological	6	0.47-0.16 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.27 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(4-pyridylthio) acetamido)-, acetate (ester) (8 CI)
5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-(((4-pyridinylthio) acetyl) amino)-, (6R-trans)- (9 CI)
21593-23-7
C17-H17-N3-O6-S2
MW 423.49

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
318 Milk	Injection	Microbiological	6	0.43-0.16 ug/ml	Not given	2 and 6 hr after 1 g. Initial measurement, 0.26 ug/ml at 0.5 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 7-((amino (4-hydroxyphenyl) acetyl) amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*))) -
50370-12-2
C16-H17-N3-O5-S
MW 363.42

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
319 Milk	Ingestion	Microbiological	6	0.10-1.64 ug/ml	Not given	1 and 6 after 1 g. Final measurement, 1.16 ug/ml at 8 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetzis, D.A. Siafas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 7-(2-amino-2-phenylacetamido)-3-methyl-8-oxo-, D- (8 CI)
 5-Thia-1-azabicyclo (4.2.0) oct-2-ene-2-carboxylic acid, 7-((aminophenylacetyl) amino)-3-methyl-8-oxo-, (6R-[6 α],7 β a(R*)))- (9 CI)
 15686-71-2
 C16-H17-N3-O4-S
 MW 347.4

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
320 Milk	Ingestion	Microbiological	6	0.20-0.50 ug/ml	Not given	1 and 4 hr after 1 g. Fecal measurement 0.32 ug/ml at 6 hr Range of means ADULTS; BLOOD SERUM; MILK; ANTIBIOTICS; DRUGS; LACTATION	Kafetris, D.A. Sifas, C.A. Georgakopoulos, P.A. Papadatos, C.J. 1981 Acta Paediatrica Scandinavica 70:285-288

5H-Dibenz (b,f) azepine-5-carboxamide
 298-86-4
 C15-H12-N2-O
 MW 236.26, MP 204-206 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
321 Milk			1	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 7.5 u mol/l b) 2.6 u mol/l c) 5.5 u mol/l d) 1.8 u mol/l e) 7.5 u mol/l f) 4.4 u mol/l	a) Carbamazepine, 2nd day b) 10,11-epoxy carbamazepine (metabolite), 2nd day c) Carbamazepine, 3rd day d) 10,11-epoxy carbamazepine, 3rd day e) Carbamazepine, 30th day f) 10,11-epoxy carbamazepine, 30th day Patient took 8 mg/kg carbamazepine and 6 mg/kg diphenylhydantoin daily during gestation and lactation. DRUGS; BLOOD; LACTATION; NEWBORN; METABOLITES; MILK	Pynnönen, S. Sillanpaa, M. 1975 Lancet 2(7934):563

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INDICES

CAS Preferred Name, page 103
CAS Registry Number, page 107
Chemical Synonym Name, page 109
Keyword, page 122

CAS Preferred Name Index

Acetanilide, 4'-hydroxy- (8 CI); Acetanilide, N-(4-hydroxyphenyl)- (9 CI) 294

Arochlor 1254 1

Benzene, chloro- 2

Benzene, dichloro- 3

Benzene, hexachloro- 4-14

Benzene, pentachloro- 15

Benzenesulfonamide, 2-chloro-5-(1-hydroxy-3-oxo-1H-indol-1-yl)- (8 CI); Benzenesulfonamide, 2-chloro-5-(2,3-dihydro-1-hydroxy-3-oxo-1H-indol-1-yl)- (9 CI) 16

BHC, Total (No postings in CHEMLINE). 17-21

Biphenyl, chloro (8 CI); 1,1'-Biphenyl, chloro deriva (9 CI) 22-46

Cadmium 47

Caffeine (8 CI); 1H-Purine-2,6-dione, 3,7-dihydro-1,3,7-trimethyl- (9 CI) 48, 295

Calcium 49, 50

Chlorodane 51

Chloroform (8 CI); Methane, trichloro- (9 CI) 52

Chromium 53, 54

Copper 55-59

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) 60-65

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) 66-78

Cyclohexane, 1,2,3,4,5,6-hexachloro-, delta- (8 CI); Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3alpha,4beta,5alpha,6beta)- (9 CI) 79, 80

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) 81-91

DDT, Total (No postings in CHEMLINE). 92-104

Digoxin (8 CI); Card-20 (22)-enolide, 3-((0-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-0-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy)-12,14-dihydroxy-, (3beta,5beta,12beta)- (9 CI) 107, 108

Estradiol (8 CI); Estr-1,3,5(10)-triene-3,17-diol, (17beta)- (9 CI) 296

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) 109, 110

Ethane, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI); Benzene, 1,1'-(2,2-dichloroethylidene)bis(4-chloro- (9 CI) 111-118

Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI); Benzene, 1-chloro-2-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)- (9 CI) 119-125

Ethane, 1,1,1-trichloro-2,2-bis(p-chlorophenyl)- (8 CI); Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro- (9 CI) 126-155

Ethylene, tetrachloro- (8 CI); Ethene, tetrachloro- (9 CI) 156

Ethylene, 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI); Benzene, 1-chloro-2-(2,2-dichloro-1-(4-chlorophenyl)ethenyl)- (9 CI) 157-159

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI); Benzene, 1,1'-(dichloroethenyldiene)bis(4-chloro- (9 CI) 160-190

Fluoride 191, 192

Hexachlorobenzol (No postings in CHEMLINE). 193

Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (8 CI); 1H-Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (9 CI) 297

Iodide 194

Iron 195-198

L-Ascorbic acid 199

L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)- 298

Magnesium 200, 201

CAS Preferred Name Index

Manganese 202-204

Mercury 205-209

Methylsulfone PCB (No postings in CHEMLINE). 210

Morphinan-6 α -ol, 7,8-didehydro-4,5 α -epoxy-3-methoxy-17-methyl- (8 CI); Morphinan-6-ol, 7,8-didehydro-4,5-epoxy-3-methoxy-17-methyl-, (5 α ,6 α)- (9 CI) 299

Nicotine (8 CI); Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- (9 CI) 211

p-Acetophenetidine (8 CI); Acetamide, N-(4-ethoxyphenyl)- (9 CI) 300

Phenol, 2,2'-methylenebis(3,4,6-trichloro- 212

Polybrominated biphenyls (No postings in CHEMLINE). 213-216

Polychlorinated quaterphenyls (No postings in CHEMLINE). 217

Pyridoxol (8 CI); 3,4-Pyridinedimethanol, 5-hydroxy-6-methyl- (9 CI) 301

Salicylic acid (8 CI); Benzoic acid, 2-hydroxy- (9 CI) 302

Salicylic acid, ion(1-) (8 CI); Benzoic acid, 2-hydroxy-, ion(1-) (9 CI) (VAN) 303

Salicylic acid, 5-((p-(2-pyridylsulfamoyl)phenyl)azo)- (8 CI); Benzoic acid, 2-hydroxy-5-((4-((2-pyridinylamino)sulfonyl)phenyl)azo)- (9 CI) 304

Selenium 218-220

Sodium, ion (Na(1+)) 221

Sulfanilamide, N(1)-(3,4-dimethyl-5-isoxazolyl)- (8 CI); Benzenesulfonamide, 4-amino-N-(3,4-dimethyl-5-isoxazolyl)- (9 CI) 305

Technetium, isotope of mass 99 222

Theobromine (8 CI); 1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl- (9 CI) 306

Theophylline (8 CI); 1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- (9 CI) 307

Tocopherol 223

Uracil, 6-propyl-2-thio- (8 CI); 4(1H)-Pyrimidinone, 2,3-dihydro-6-propyl-2-thio- (9 CI) 224, 308

Valeric acid, 2-propyl- (8 CI); Pentanoic acid, 2-propyl- (9 CI) 225, 309

Vanadium 226

Zinc 227-230

1-Piperazineethanol, 4-(3-(2-(trifluoromethyl)-9H-thioxanthen-9-ylidene)propyl-, (Z)- 310

1,2-Propanediol, 3-(2-nitroimidazol-1-yl)- (8 CI); 1,2-Propanediol, 3-(2-nitro-1H-imidazol-1-yl)- (9 CI) 311

1,3,4-Metheno-1H-cyclobuta(c,d)pentalene, 1,1a,2,2,3,3a,4,5,5a,5b,6-dodecachlorooctahydro- 231

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-, (1 α ,4 α ,4 β ,5 α ,8 α ,8 β)- (9 CI) 232-2351,4:5,8-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-, (1 α ,2 β ,2 α ,3 α ,6 β ,6 α ,7 β ,7 α)- (9 CI) 236-25918,19-Dinor-17 α -pregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (+)- (8 CI); 18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17 α)-(-)- (9 CI) 312

3-Heptanone, 6-(dimethylamino)-4,4-diphenyl- 313

4-Imidazoline-1-carboxylic acid, 3-methyl-2-thio-, ethyl ester (8 CI); 1H-Imidazole-1-carboxylic acid, 2,3-dihydro-3-methyl-2-thio-, ethyl ester (9 CI) 314

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-(2 α ,5 α ,6 β (S*))) (9 CI) 3154,7-Methano-1H-indene, 1,2,3,4,5,6,7,8,8-nonachloro-2,3,3a,4,7,7a-hexahydro-, (1 α ,2 β ,3 α ,3 α ,4 β ,7 β ,7 α)- 260-265

4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-1,2-epoxy-3a,4,7,7a-tetrahydro- (8 CI); 2,5-Methano-2H-indeno(1,2-b)oxirene, 1a,2,3,4,5,6a,7,7-octachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI) 266-274

4,7-Methanoindan, 1,4,5,6,7,8,8-heptachloro-2,3-epoxy-3a,4,7,7a-tetrahydro- (8 CI); 2,5-Methano-2H-indeno(1,2-b)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI) 275-290

4,7-Methancindene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (8 CI); 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (9 CI) 291, 292

CAS Preferred Name Index

- 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-(2-(1H-tetrazol-1-yl)acetamido)- (8 CI); 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((5-methyl-1,3,4-thiadiazol-2-yl)thio)methyl)-8-oxo-7-((1H-tetrazol-1-ylacetyl)amino)-, (6R-trans)- (9 CI) 293
- 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)- 316
- 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(2-thienyl)acetamido)-acetate (ester) (8 CI); 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-((2-thienylacetyl)amino)-, (6R-trans)- (9 CI) 317
- 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(hydroxymethyl)-8-oxo-7-(2-(4-pyridylthio)acetamido)-acetate (ester) (8 CI); 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-((acetyloxy)methyl)-8-oxo-7-((4-pyridylthio)acetyl)amino)-, (6R-trans)- (9 CI) 318
- 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((amino(4-hydroxyphenyl)acetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*))) - 319
- 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-(2-amino-2-phenylacetamido)-3-methyl-8-oxo-, D- (8 CI); 5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-((aminophenylacetyl)amino)-3-methyl-8-oxo-, (6R-(6alpha,7beta(R*))) - (9 CI) 320
- 5H-Dibenz(b,f)azepine-5-carboxamide 321

CAS Registry Number Index

1024-57-3	275-290	60-57-1	236-259
103-90-2	294	608-93-5	15
108-90-7	2	60846-21-1	316
11097-69-1	1	62-44-2	300
118-74-1	4-14	62571-86-2	298
127-18-4	156	63-36-5	303
127-69-5	305	65-23-6	301
12789-03-6	51	6533-00-2	312
1336-36-3	22-46	67-66-3	52
13551-87-6	297	69-72-7	302
13551-92-3	311	70-30-4	212
1406-66-2	223	72-54-8	111-118
14133-76-7	222	72-55-9	160-190
153-61-7	317	7439-89-6	195-198
15686-71-2	320	7439-95-4	200, 201
16984-48-8	191, 192	7439-96-5	202-204
17341-25-2	221	7439-97-6	205-209
20461-54-5	194	7440-43-9	47
20830-75-5	107, 108	7440-47-3	53, 54
21593-23-7	318	7440-50-8	55-59
22232-54-8	314	7440-62-2	226
2385-85-5	231	7440-66-6	227-230
25321-22-6	3	7440-70-2	49, 50
25953-19-9	293	76-44-8	291, 292
26787-78-0	315	76-57-3	299
26880-48-8	266-274	76-99-3	313
298-46-4	321	77-36-1	16
309-00-2	232-235	7782-49-2	218-220
319-84-6	60-65	789-02-6	119-125
319-85-7	66-78	83-67-0	306
319-86-8	79, 80	99-66-1	225, 309
3424-82-6	157-159		
39765-80-5	260-265		
50-28-2	296		
50-29-3	92-106, 126-155		
50-81-7	199		
50370-12-2	319		
51-52-5	224, 308		
53-19-0	109, 110		
53772-82-0	310		
54-11-5	211		
58-08-2	48, 295		
58-55-9	307		
58-89-9	19-21, 81-91		
599-79-1	304		

Chemical Synonym Index

- (+)-Norgestrel 312
 (-)-Nicotine 211
 Aahepta 291, 292
 Aalindan 81-91
 Aavero-extra 126-155
 Abensanil 294
 Acasol 294
 Acet-p-phenetidin 300
 Acetagesic 294
 Acetalgin 294
 Acetaminofen 294
 Acetaminophen 294
 Acetic acid, dipropyl- 225, 309
 Acetophenetidin 300
 Acetophenetidine 300
 Acetophenetin 300
 Acigena 212
 Adenex 199
 Adermin 301
 Aficide 81-91
 Agritan 126-155
 Agrocerae 291, 292
 Agrocide 81-91
 Agrocide III 81-91
 Agrocide WP 81-91
 Aldocit 232-235
 Aldrin 232-235
 Aldrin Epoxide 236-259
 Alert-Pep 48, 295
 Algetropyl 294
 Algovetin 313
 Allbri Natural Copper 55-59
 Allercorb 199
 Alsedern 212
 alpha-Benzene hexachloride 60-65
 alpha-BHC 60-65
 alpha-Flupenthixol 310
 alpha-HCH 60-65
 alpha-Hexachloran 60-65
 alpha-Hexachlorane 60-65
 alpha-Hexachlorocyclohexane 60-65
 alpha-Hexachlorocyclohexane 60-65
 alpha-Lindane 60-65
 alpha-Norgestrel 312
 alpha-1,2,3,4,5,6-Hexachlorocyclohexane 60-65
 alpha, alpha-Bis(p-chlorophenyl)-beta, beta, beta-trichlorethane 126-155
 Alphazole 305
 Altrad 296
 Alvedon 294
 Alvit 55 236-259
 Amadil 294
 Anatin 4-14
 Ameisennittel merk 81-91
 Ameisentod 81-91
 Amidon 313
 Amidone 313
 Amidoral 305
 Anisia-mottenschutz 3
 Amoxicillin 315
 Amoxil 315
 Amoxycillin 315
 Anac 110 55-59
 Anafion 294
 Anelix 294
 Ankilostin 156
 Anticarie 4-14
 Antisal 1 156
 Antiscorbic vitamin 199
 Antiscorbutic vitamin 199
 Apamid 294
 Apamide 294
 APAP 294
 Aparasin 81-91
 Aphtiria 81-91
 Aplidal 81-91
 Aquadiol 296
 Arbitex 81-91
 Arkotine 126-155
 Araco iron 195-198
 Archlor 1254 1
 Arwood copper 55-59
 Ascoltin 199
 Ascorbajen 199
 Ascorbic acid 199
 Ascorbutina 199
 Ascorin 199
 Ascortéal 199
 Ascorvit 199

Chemical Synonym Index

- AT 7 212
 Athyromaxole 314
 Azopyrin 304
 Azopyrine 304
 Azotox M-33 126-155
 Azulfidine 304
 B 32 212
 Ba 2796 194
 Bardiol 296
 Basolest 314
 BEH 81-91
 Belt 51
 Ben-Hex 81-91
 Ben-u-ron 294
 Bentox 10 81-91
 Benzosulfa 304
 beta-Benzene hexachloride 66-78
 beta-BHC 66-78
 beta-Estradiol 296
 beta-BCH 66-78
 beta-Hexachlorobenzene 66-78
 beta-Hexachlorocyclohexane 66-78
 beta-Lindane 66-78
 beta-Pyridyl-alpha-N-methylpyrrolidine 211
 beta-1,2,3,4,5,6-Hexachlorocyclohexane 66-78
 Bexol 81-91
 Bezatin 301
 BHC 81-91
 BHC, total 17-21
 Bickie-mol 294
 Bilevon 212
 Biphenyl, chlorinated 22-46
 Bis(2-hydroxy-3,5,6-trichlorophenyl) methane 212
 Bis(3,5,6-trichloro-2-hydroxyphenyl) methane 212
 BL-S 578 319
 BLF 1410 315
 Blue powder 227-230
 Bosan supra 126-155
 Bovidermol 126-155
 BRL 2333 315
 Bunt-cure 4-14
 Bunt-no-more 4-14
 C.G. 1 314
 C.I. Pigment Metal 2 55-59
 C.I. 77180 47
 C.I. 77400 55-59
 C.I. 77805 218-220
 C-Quin 199
 C-Vimin 199
 Cadmium 47
 Cafeina 48, 295
 Caffein 48, 295
 Caffeine 48, 295
 Cafipel 48, 295
 Calcium 49, 50
 Calpol 294
 Cantan 199
 Cantaxin 199
 Captopril 298
 Carbamazepen 321
 Carbamazepine 321
 Carbazepine 321
 Carbethoxymethimazole 314
 Carbinazol 314
 Carbinazole 314
 Catavin C 199
 CB 313 109, 110
 CD-68 51
 CDA 101 55-59
 CDA 102 55-59
 CDA 110 55-59
 CDA 122 55-59
 Ce-Bi-Lin 199
 Ce-Vi-Sol 199
 Cebicure 199
 Cebion 199
 Cebione 199
 Cecon 199
 Cefadroxil 319
 Cefalexin 320
 Cefalotin 317
 Cefaloto 320
 Cefamezin 293
 Cefamezine 293
 Cefazolin 293
 Cefazoline 293
 Cefotaxime 316
 Cegiolan 199
 Ceglion 199
 Celanex 81-91

Chemical Synonyms Index

- Celaskan 199
 Celin 199
 Cenagyl 199
 Cenetone 199
 Cephalalexin 320
 Cephalosporanic acid 318
 Cephalothin 317
 Cephalotin 317
 Cephapirin 318
 Cephezolin 293
 Cephezoline 293
 Ceporex 320
 Ceporexine 320
 Cereon 199
 Cergona 199
 Cescorbat 199
 Cetadol 294
 Cetamid 199
 Cetesican 199
 Cevalin 199
 Cevatine 199
 Cevex 199
 Cevinin 199
 Cevital 199
 Cevitamic acid 199
 Cevitamin 199
 Cevitan 199
 Cevitex 199
 CEZ 293
 CG-1283 231
 Chemouag 305
 Chloditan 109, 110
 Chlodithane 109, 110
 Chlor Kil 51
 Chlcrdan 51
 Chlordane 51
 Chlordane (Technical) 51
 Chloresene 81-91
 Chlorinated diphenyl 22-46
 Chlorobenzene 2
 Chloroformic digitalin 107, 108
 Chlorophenothane 126-155
 Chlorothalidone 16
 Chlorphenothan 126-155
 Chlorphenotoxum 126-155
 Chlorphtahlidolone 16
 Chlorphthalidone 16
 Chlortalidone 16
 Chlorthalidon 16
 Chlorthalidone 16
 Chromium 53, 54
 Ciamin 199
 Cipca 199
 cis-(Z)-Flupenthixol 310
 cis-Estradiol 296
 cis-Flupenthixol 310
 cis-Flupentixol 310
 Citor 126-155
 Clamoxyl 315
 Clixodyne 294
 Clofenotan 126-155
 Clofenotane 126-155
 Co-op Hexa 4-14
 Codechine 81-91
 Codeine 299
 Coffeine 48, 295
 Colascor 199
 Colloidal manganese 202-204
 Compound 118 232-235
 Compound 497 236-259
 Concemn 199
 Condicept 299
 Copper 55-59
 Copper # 1 55-59
 Copper powder 55-59
 Cordioxil 107, 108
 Corodane 51
 Corpagen 296
 Cotofilm 212
 CT 317
 Cu #3 55-59
 CuEP 55-59
 CuEPP 55-59
 Cutaval 202-204
 D-(-)-alpha-Amino-p-hydroxybenzyl penicillin 315
 D-(alpha-Amino-p-hydroxybenzyl)penicillin 315
 D-2-Amino-2-(4-hydroxyphenyl)acetamidopenicillanic acid 315
 d-3,17beta-Estradiol 296
 Davitanor C 199

Chemical Synonym Index

- Davoxin 107, 108
 DBH 81-91
 DCE 3
 DCuPI 55-59
 DDD 111-118
 DDE 160-190
 DDT 126-155
 DDT, total 92-106
 Dechlorane 231
 Dechlorane Plus 231
 Dechlorane Plus 515 231
 Dechlorane 4070 231
 Dechlorane 515 231
 delta-(aeeee)-1,2,3,4,5,6-Hexachlorocyclohexane 79, 80
 delta-Benzene hexachloride 79, 80
 delta-BHC 79, 80
 delta-HCH 79, 80
 delta-Hexachlorocyclohexane 79, 80
 delta-Lindane 79, 80
 delta-1,2,3,4,5,6-Hexachlorocyclohexane 79, 80
 Demethylmisonidazole 311
 Deoval 126-155
 Depakine 225, 309
 Desmethylnisonidazole 311
 Detsol-Extrakt 81-91
 Detox 126-155
 Detoxan 126-155
 Devoran 81-91
 Dial-a-gesic 294
 Dianinon 313
 Dibovin 126-155
 Dichlorobenzene 3
 Dichlorodiphenyl dichloroethane 111-118
 Dichlorodiphenyltrichloroethane 126-155
 Dicophane 126-155
 Didakene 156
 Dieldrex 236-259
 Dieldrin 236-259
 Dielmoth 236-259
 Dietary calcium 49, 50
 Digacin 107, 108
 Digitalis glycoside 107, 108
 Dihydrofollicular hormone 296
 Dihydrofolliculin 296
 Dihydromenformon 296
 Dihydrotheelin 296
 Dihydroxyestria 296
 Dildrin 236-259
 Dilene 111-118
 Dimenformon 296
 Diogyn 296
 Diogynets 296
 Dipropylacetic acid 225, 309
 Dirox 294
 Distodin 212
 Diurobromine 306
 Dixina 107, 108
 dl-Morgestrel 312
 Dodat 126-155
 Dodecachlorooctahydro-1,3,4-metheno-2H-cyclobuta (cd) pentalene 231
 Dol Granule 81-91
 Dolophin 313
 Dorsulfan Warthausen 305
 Dorytox 236-259
 DPA 225, 309
 Drilltox-Spezial Aglakon 81-91
 Dykol 126-155
 Dymadon 294
 E 3314 291, 292
 E-Cu57 55-59
 Elixophyllin 307
 Elixophylline 307
 Elzogram 293
 Eneril 294
 ENT 15,152 291, 292
 ENT 15,949 232-235
 ENT 25,584 275-290
 ENT 25,719 231
 ENT 7,796 81-91
 ENT-1506 126-155
 ENT-16225 236-259
 Entomoxan 81-91
 Entusil 305
 Entusul 305
 ZO5A 195-198
 Epoxyheptachlor 275-290
 Ergenyl 225, 309
 Estonate 126-155
 Estra-1,3,5(10)-triene-3,17-beta-diol 296

Chemical Synonyms Index

- Estra-1,3,5(10)-triene-3,17-diol, (17 β) - 296
 Estra-1,3,5-triene 296
 Estrol 296
 Estrovite 296
 Ethane, 1,1,1-trichloro-2,2-bis(4-chlorophenyl) 126-155
 Ethyl-3-methyl-2-thioimidazoline-1-carboxylate 314
 Ethylene tetrachloride 156
 Exofene 212
 Febrilix 294
 Febro-Gesic 294
 Fetrolin 294
 Pedal-Un 156
 Fenestral 296
 Fenogen 296
 Fendon 294
 Fenidina 300
 Fenina 300
 Ferrovac E 195-198
 Fesia-sin 212
 FH 122-A 312
 Finisol 294
 Finlepsin 321
 Fluoride 191, 192
 Fluoride ion 191, 192
 Fluorine ion (1-) 191, 192
 Flux saag 211
 Follicyclin 296
 Forst-Nexen 81-91
 Fostril 212
 G 11 212
 G 32883 321
 G 33182 16
 Gamma benzene hexachloride 81-91
 gamma-Benzene hexachloride 81-91
 gamma-BHC 81-91
 gamma-HCH 81-91
 gamma-Hexachloran 81-91
 gamma-Hexachlorane 81-91
 gamma-Hexachlorobenzene 81-91
 gamma-Hexachlorocyclohexane 81-91
 gamma-Lindane 81-91
 gamma-1,2,3,4,5,6-Hexachlorocyclohexane 81-91
 Gannater 81-91
 Gancphen 212
 Gamophene 212
 Gantrisin 305
 Gantrisona 305
 Gantrosan 305
 GC 1283 231
 Geigy 32883 321
 Germa-Medica 212
 Gemafid 126-155
 Gesarol 126-155
 Gexane 81-91
 Ginosedol 296
 GPKh 291, 292
 Guaranine 48, 295
 Gyncestryl 296
 Gynergon 296
 HCB 4-14
 HCC 81-91
 HCCB 81-91
 HCE 275-290
 HCH 81-91
 HCH, total 17-21
 Heclotox 81-91
 Hedex 294
 HEOD 236-259
 Hepta 291, 292
 Heptachlor 291, 292
 Heptachlor epoxide 275-290
 Heptachlorane 291, 292
 Heptadone 313
 Heptanon [pharmaceutical] 313
 Hexa 81-91
 Hexablan 212
 Hexachloran 81-91
 Hexachlorane 81-91
 Hexachlorobenzene 4-14
 Hexachlorobenzol 193
 Hexachlorocyclopentadiene dimer 231
 Hexachlorofen 212
 Hexachlorophen 212
 Hexachlorophene 212
 Hexafen 212
 Hexavern 81-91
 Hexicide 81-91
 Hexophene 212
 Hexosan 212

Chemical Synonyms Index

- Jeryclan 81-91
 HGI 81-91
 HHDN 232-235
 Hnacclan 294
 Homolle's digitalin 107, 108
 Hortex 81-91
 Hungaria L 7 81-91
 Hybrin 199
 Hydriodic acid, ion(1-) 194
 Hydrofluoric acid, ion (1-) 191, 192
 Hygroton 16
 IDO-C 199
 Igroton 16
 Illoxol 236-259
 Insectlack 236-259
 Intox 51
 Intox [insecticide] 51
 Iodide anion 194
 Iodide ion 194
 Iodide(1-) 194
 Iodide-127 194
 Iodide, ion (I(1-)) 194
 Iron 195-198
 Isoren 16
 Isoxamin 305
 Ivoran 126-155
 Jacutin 81-91
 Julin's carbon chloride 4-14
 Kafar copper 55-59
 Kalsin 300
 Karbamazepin 321
 Reflex 320
 Keforla 320
 Ketalgin 313
 Koffein 48, 295
 Kokotine 81-91
 Kombi-Albertan 236-259
 Kortofil 232-235
 Kwell 81-91
 Kypchlor 51
 L-(*)-Ascorbic acid 199
 L-Lyxoscorbic acid 199
 L-Nicotine 211
 L-threo-Hex-2-enonic acid 199
 L-Xyloscorbic acid 199
 L-3-Ketothreohexuronic acid 199
 Landiol 296
 Lanicor 107, 108
 Lanicordin 107, 108
 Lanophyllin 307
 Lanoxin 107, 108
 Larixin 320
 Laroscorbine 199
 Lasasorb 199
 Lendine 81-91
 Lentox 81-91
 Lestep 294
 Lexibiotico 320
 Lidenal 81-91
 Lilly 66873 320
 Lindane 81-91
 Lindatox 81-91
 Lindex 81-91
 Lindonep 81-91
 Lintox 81-91
 Linvur 81-91
 Liguagesic 294
 Liqui-Cee 199
 Liguophylline 307
 Loha 195-198
 Lonarid 294
 Lorexane 81-91
 Lysodren 109, 110
 Lyteca 294
 Lyteca syrup 294
 M 1 55-59
 M 3 55-59
 M 4 55-59
 Macrodiol 296
 Madlexin 320
 Magnesium 200, 201
 Manganese 202-204
 Mateina 48, 295
 MCB 2
 Mecodin 313
 Mercury 205-209
 Methadone 313
 Methymorphine 299
 Methylsulfone PCB 210
 Methyltheobromine 48, 295

Chemical Synonym Index

- Mel700 111-118
 Mello1 49 81-91
 Mirex 231
 Misonidazole 297
 Mitotan 109, 110
 Mitctane 109, 110
 Monochlorobenzene 2
 Monovar 312
 Morphine monomethyl ether 299
 Morphine-3-methyl ether 299
 Moth Snub D 236-259
 Mott-Ex 3
 Mottenschutzmittel Evau P 3
 Mszycol 81-91
 Multin 294
 Mutoxan 126-155
 M1 [copper] 55-59
 M2 [copper] 55-59
 M3 [copper] 55-59
 M3S 55-59
 M31 55-59
 M4 [copper] 55-59
 N(1)-(3,4-Dimethyl-5-isoxazolyl)sulfanilamide 305
 N-(4-Hydroxyphenyl)acetamide 294
 N-Acetyl-p-aminophenol 294
 N-Acetyl-p-phenetidine 300
 N-acetyl-4-aminophenol 294
 n-Dipropylacetic acid 225, 309
 Nabac 212
 NAPA 294
 Napafen 294
 NAPAP 294
 Naprinol 294
 Natriuran 16
 Neazolin 305
 Nema 156
 Neo-Scabicide1 81-91
 Neo-Thyreostat 314
 Neocid 126-155
 Neocidol 126-155
 Neolexina 320
 Neomercazole 314
 Neosept V 212
 Neoxazol 305
 Neurotol 321
 Nexen PS 81-91
 Nexit 81-91
 Nexit-stark 81-91
 Nexol-E 81-91
 Nicrochloran 81-91
 Nicotine 211
 No Bunt 4-14
 No Bunt Liquid 4-14
 No Bunt 40 4-14
 No Bunt 80 4-14
 No-Doz 48, 295
 Nobedon 294
 Nordicol 296
 Norgestrel 312
 Norilgan-S 305
 NSC 261036 311
 NSC 261037 297
 NSC-38721 109, 110
 o-Hydroxybenzoate 303
 o-Hydroxybenzoic acid 302
 o,p'-DDD 109, 110
 o,p'-DDE 157-159
 o,p'-DDT 119-125
 o,p'-Dichlorodiphenyldichloroethane 109, 110
 o,p'-TDE 109, 110
 Octa-Klor 51
 Octachlor epoxide 266-274
 Octalene 232-235
 Octalox 236-259
 Oestergon 296
 Oestra-1,3,5(10)-triene-3,17beta-diol 296
 Oestradiol 296
 Oestroglandol 296
 OFHC Cu 55-59
 Omnitox 81-91
 Optiphyllin 307
 Oradil 16
 Ovadziak 81-91
 Ovahormon 296
 Ovasterol 296
 Ovasterol 296
 Ovez [tablets] 296
 Ovocylin 296
 Ovocylin 296
 Ovadziak 81-91

Chemical Synonym Index

- Orychlordan 266-274
 Orychlordan 266-274
 p-(Acetylasino)phenol 294
 p-Acetamidophenol 294
 p-Ethoxyacetanilide Pertonal 300
 p-Hydroxyacetanilide 294
 p-Hydroxyaspicillin 315
 p,p'-DDD 111-118
 p,p'-DDE 160-190
 p,p'-DDT 126-155
 p,p'-Dichlorodiphenyl-2,2-dichloroethylene 111-118
 p,p'-Dichlorodiphenyldichloroethane 111-118
 p,p'-Dichlorodiphenyldichloroethylene 160-190
 p,p'-Dichlorodiphenyltrichloroethane 126-155
 p,p'-TDE 111-118
 Paecmo 294
 Panadol 294
 Pancid 305
 Panets 294
 Paracetamol 294
 Paracetamole 294
 Parachlorocidus 126-155
 Parkophyllin 307
 Parmol 294
 PEB 213-216
 PCB 22-46
 PCB 1254 1
 PEB1 126-155
 Pedraczak 81-91
 Pedric 294
 Pentachlorin 126-155
 Pentachlorobenzene 15
 Pentachlorophenyl chloride 4-14
 Penticidus 126-155
 Perchlorethylene 156
 Perchlorobenzene 4-14
 Perchlorodihomocubane 231
 Perchloroethylene 156
 Perchloropentacyclo(5.2.1.0(2,6).0(3,9).0(5,8))decane 231
 Perchloropentacyclodecane 231
 Perclene 156
 Perfluoride 191, 192
 Perlatanol 296
 PerSec 156
 Pflanzol 81-91
 Phenacetin 300
 Phenacetine 300
 Phenadone 313
 Phenazetin 300
 Phendon 294
 Phenedina 300
 Phenidin 300
 Phenin 300
 Phenol-2-carboxylic acid 302
 Phenyl chloride 2
 pHisoHex 212
 Phthalanodine 16
 Phthalanudine 16
 Physeptone 313
 Pirivitol 301
 Planavit C 199
 Polamidone 313
 Polybrominated biphenyls 213-216
 Polychlorinated quaterphenyls 217
 Polyiodide 194
 Praval 49, 50
 Primofol 296
 Procamil 224, 308
 Profoliel 296
 Progynon 296
 Progynon-DH 296
 Propacil 224, 308
 Propycil 224, 308
 Propyl-Thiorist 224, 308
 Propyl-Thyracil 224, 308
 Propylthiorit 224, 308
 Propylthiouracil 224, 308
 Proscorbin 199
 Prothiucil 224, 308
 Prothiurone 224, 308
 Prothycil 224, 308
 Prothyran 224, 308
 Protinural 224, 308
 Pseudotheophylline 307
 Psoriacid-S-Stift 302
 PTU 224, 308
 PTU [thyreostatic] 224, 308
 Pyridoxin 301
 Pyridoxine 301

Chemical Synonym Index

- Pyrimazine 294
 PZh-1M3 195-198
 PZh-2 195-198
 PZh1M1 195-198
 PZh2M 195-198
 PZh2M1 195-198
 PZh2M2 195-198
 PZh3 195-198
 PZh3M 195-198
 PZh4M 195-198
 Quellada 81-91
 Quicksilver 205-209
 R 20 52
 R 20 [refrigerant] 52
 Raney copper 55-59
 Red Shield 236-259
 Redoxon 199
 Refresh'n 48, 295
 Renon 16
 Renosulfan 305
 Retarder W 302
 Reupirin 304
 Rhodiachlor 291, 292
 Rhothane 111-118
 Rikena 199
 Ritosept 212
 Ro 5-9963 311
 Ro 7-0582 297
 Rotamott 3
 Rougoxin 107, 108
 Roxosul tablets 305
 Rutranex 302
 S 6437 320
 Salazopyridin 304
 Salazopyrin 304
 Salazosulfapyridin 304
 Salazosulfapyridine 304
 Salicylate 303
 Salicylate anion 303
 Salicylate ion 303
 Salicylazosulfapyridine 304
 Salicylic acid 302
 Salicylic acid colloidon 302
 Salisulf 304
 Salcnil 302
 Saluretin 16
 Sang-gamma 81-91
 Sanocide 4-14
 Santheose 306
 SC 15090 306
 Scorbu-C 199
 SD 2794 232-235
 SD 34 17 236-259
 Secorbate 199
 Seedrin 232-235
 Selenium 218-220
 Sencephalin 320
 Septisol 212
 Septofen 212
 SH 70850 312
 Sh 850 312
 Sniectotex 4-14
 Sodium (Na(1+)) 221
 Sodium (1+) 221
 Sodium cation 221
 Sodium ion 221
 Sodium ion (Na(1+)) 221
 Sodium ion(1+) 221
 Sodium(1+) ion 221
 Solomin 307
 Sosol 305
 Soxisol 305
 Soxo 305
 Soromide 305
 Spritz-Rapidin 81-91
 Spruehpflanzol 81-91
 SQ 14225 298
 SR 1354 297
 SR 1530 311
 SRI 1354 297
 Stansin 305
 Steral 212
 Steraskin 212
 Stim 48, 295
 Streunex 81-91
 Sulbio 305
 Sulfadimethylisoxazole 305
 Sulfafurazol 305
 Sulfafurazole 305
 Sulfagan 305

Chemical Synonyms Index

- Sulfaisoxazole 305
 Sulfalar 305
 Sulfasalazin 304
 Sulfasalazine 304
 Sulfasol 305
 Sulfazin 305
 Sulfisoxazole 305
 Sulfisoxazol 305
 Sulfisoxazole 305
 Sulfisoxazole dialamine 305
 Sulfoxol 305
 Sulphafurazole 305
 Sulphasalazine 304
 Sulsoxin 305
 Surgi-Cen 212
 Surofene 212
 SUY B-2 195-198
 Syndiol 296
 Tabalgin 294
 Tafidex 126-155
 Tap 85 81-91
 Tatuzinho 232-235
 TDE 111-118
 Technetium-99 222
 Technical Chlordane 51
 Tegretal 321
 Tegretol 321
 Teltlen 156
 Teslo 294
 Tespanal 294
 Tespra 294
 Teobromin 306
 Teofyllamin 307
 Teraseptic 212
 Ternitox 236-259
 Testascorbic 199
 Tetracap 156
 Tetrachlorethylene 156
 Tetrachlorodiphenyl ethane 111-118
 Tetrachloroethene 156
 Tetrachloroethylene 156
 Tetraguer 156
 Tetraleno 156
 Tetropil 156
 Theal tabl. 307
 Theelin, dihydro- 296
 Thein 48, 295
 Theine 48, 295
 Theocin 307
 Theofol 307
 Theograd 307
 Theolair 307
 Theolix 307
 Theophyllin 307
 Theophylline 307
 Theosalvose 306
 Theostene 306
 Thesal 306
 Thiasin 305
 Thiuragyl 224, 308
 Thyreostat II 224, 308
 Tipula 232-235
 Tocopherol 223
 Torichlor 51
 Tralgon 294
 trans-Monachlor 260-265
 Tri-6 81-91
 Trichlorobis(4'-chlorophenyl) ethane 126-155
 Trichloroform 52
 Trichloromethane 52
 Trichlorophene 212
 Tussapap 294
 Tylenol 294
 Tyrazol 314
 Unexan-Koeder 51
 Unisulf 305
 Uritrisin 305
 V-Sul 305
 Valadol 294
 Valgesic 294
 Valproic acid 225, 309
 Vanadium 226
 Vanadium-51 226
 Velsicol 104 291, 292
 Velsicol 1068 51
 Velsicol 53-CS-17 275-290
 Vicelat 199
 Vicin 199
 Viforcit 199
 Viscorin 199

Chemical Synonyms Index

- Vitace 199
 Vitaceae 199
 Vitacimin 199
 Vitacin 199
 Vitamin B-6 301
 Vitamin C 199
 Vitaminin 199
 Vitascorbol 199
 Viton 81-91
 Wy 3707 312
 Xitix 199
 Xylascorbic acid, L- 199
 Zambesil 16
 Zerdane 126-155
 Zinc 227-230
 1-(2-Hydroxy-3-methoxypropyl)-2-nitroimidazole 297
 1-(2-Nitro-1-imidazolyl)-3-methoxy-2-propanol 297
 1-Ethoxycarbonyl-3-methyl-2-thio-4-imidazoline 314
 1-Keto-3-(3'-sulfamyl-4'-chlorophenyl)-3-hydroxyisindoline 16
 1-Methyl-2-(3-pyridyl)pyrrolidine 211
 1-Methyl-3-carbethoxy-2-thioglyoxalone 314
 1-oxo-3-(3-sulfamyl-4-chlorophenyl)-3-hydroxyisindoline 16
 1,1-Bis(p-chlorophenyl)-2,2-dichloroethane 111-118
 1,1-Bis(p-chlorophenyl)-2,2,2-trichloroethane 126-155
 1,1-Bis(4-chlorophenyl)-2,2-dichloroethane 111-118
 1,1-Dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)ethylene 157-159
 1,1-Dichloro-2,2-bis(p-chlorophenyl)ethane 111-118
 1,1-Dichloro-2,2-bis(p-chlorophenyl)ethylene 160-190
 1,1-Dichloro-2,2-bis(4-chlorophenyl)ethane 111-118
 1,1-Dichloro-2,2-di(p-chlorophenyl)ethylene 160-190
 1,1,1-Trichloro-2,2-bis(p-chlorophenyl)ethane 126-155
 1,1,1-Trichloro-2,2-bis(4,4'-dichlorodiphenyl)ethane 126-155
 1,1,2,2-Tetrachloroethylene 156
 1,2,3,4,5-pentachlorobenzene 15
 1,2,3,4,5,6-Hexachlorocyclohexane 81-91
 1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-hexahydro-4,7-methanoindene 51
 1,2,4,5,6,7,8,8-Octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan 51
 1,2,4,5,6,7,8,8-Octachloro-4,7-methane-3a,4,7,7a-tetrahydroindane 51
 1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-, dimer 231
 1,3-Dimethylxanthine 307
 1,3,7-Trimethyl-2,6-dioxopurine 48, 295
 1,3,7-Trimethylxanthine 48, 295
 17beta-Estradiol 296
 17beta-Oestradiol 296
 1721 Gold 55-59
 2-(2-Chlorophenyl)-2-(4-chlorophenyl)-1,1-dichloroethane 109, 110
 2-(2-chlorophenyl)-2-(4-chlorophenyl)-1,1-dichloroethylene 157-159
 2-(2-chlorophenyl)-2-(4-chlorophenyl)-1,1,1-trichloroethane 119-125
 2-Hydroxybenzoic acid 302
 2-Propylpentanoic acid 225, 309
 2-Propylvaleric acid 225, 309
 2-thio-4-oxo-6-propyl-1,3-pyrimidine 224, 308
 2-thio-6-propyl-1,3-pyrimidin-4-one 224, 308
 2,2-bis(2-chlorophenyl)-2-(4-chlorophenyl)-1,1-dichloroethane 109, 110
 2,2-Bis(p-chlorophenyl)-1,1,1-trichloroethane 126-155
 2,2-Bis(4-chlorophenyl)-1,1-dichloroethane 111-118
 2,2-Bis(4-chlorophenyl)-1,1-dichloroethylene 160-190
 2,2'-Dihydroxy-3,3',5,5',6,6'-hexachlorodiphenylmethane 212
 2,2'-Dihydroxy-3,5,6,3',5',6'-tetrachlorodiphenylmethane 212
 2,2'-Methylenebis(3,4,6-trichlorophenol) 212
 2,2',3,3',5,5'-Hexachloro-6,6'-dihydroxydiphenylmethane 212
 2,4'-DDT 119-125
 2,4'-Dichlorodiphenyldichloroethane 109, 110
 3-(N-Methylpyrrolidino)pyridine 211
 3-(2-Nitroimidazol-1-yl)-1,2-propanediol 311
 3-(4'-chloro-3'-sulfamoyl-phenyl)-3-hydroxyphthalimidine 16
 3-Carbethoxymercapto-1-methylimidazole 314
 3-Carbethoxythio-1-methylglyoxaline 314
 3-Carbethoxythio-1-methyliminiazole 314
 3-Chlorochlordene 291, 292
 3-Hydroxy-3-(4-chloro-3-sulfamylphenyl)phthalimidine 16
 3-Oxo-L-gulofuranolactone 199
 3,17-Epidihydroxyestratriene 296
 3,17beta-Dihydroxyestra-1,3,5(10)-triene 296
 3,17beta-Dihydroxyestra-1,3,5-triene 296
 3,17beta-Estradiol 296
 3,4-Dimethyl-5-sulfanilaisoisoazole 305
 3,4-Dimethyl-5-sulfonamidoisoxazole 305
 3,7-Dimethylxanthine 306
 3keto-L-Gulofuranolactone 199
 4-Acetamidophenol 294

Chemical Synonym Index

- 4-Acetaminophenol 294
- 4-Ethoxyacetanilide 300
- 4-Heptanecarboxylic acid 225, 309
- 4-Hydroxyacetanilide 294
- 4,4'-DDD 111-118
- 4,4'-DDE 160-190
- 4,4'-Dichlorodiphenyltrichloroethane 126-155
- 4'-Ethoxyacetanilide 300
- 4'-Hydroxyacetanilide 294
- 5-(p-(2-Pyridylsulfamoyl)phenylazo)salicylic acid 304
- 5-(p-(2-Pyridylsulfamyl)phenylazo)salicylic acid 304
- 5-(p-Aminobenzenesulfonamido)-3,4-dimethylisoxazole 305
- 5-(p-Aminobenzenesulphonamido)-3,4-dimethylisoxazole 305
- 5-(4-Aminophenylsulfonamido)-3,4-dimethylisoxazole 305
- 5-Carbamoyl-5H-dibenz(b,f)azepine 321
- 5-Sulfanilamido-3,4-dimethylisoxazole 305
- 6-(D-(-)-p-Hydroxy-alpha-aminobenzyl)penicillin 315
- 6-n-Propyl-2-thiouracil 224, 308
- 6-n-Propylthiouracil 224, 308
- 6-Propyl-2-thio-2,4(1H,3H)pyrimidinedione 224, 308
- 6-Propyl-2-thiouracil 224, 308
- 6-Propylethiouracil 224, 308
- 666 81-91
- 7-(-1-(1H)-tetrazolylacetamido)-3-[2-(5-methyl-1,3,4-thiadiazolyl)thiomethyl]-delta(3)-cephem-4-carboxylic acid 293
- 7-(L-alpha-aminophenylacetamido)desacetoxycephalosporanic acid 320
- 7-(D-2-amino-2-phenylacetamido)-3-methyl-delta(3)-cephem-4-carboxylic acid 320
- 7-(Thiophene-2-acetamido)cephalosporin 317
- 7-(2-(2-Thienyl)acetyl-amido)cephalosporanic acid 317
- 7-(2-(4-pyridylthio)acetamido)- 318
- 7-(2-(4-Pyridylthio)acetamido)cephalosporanic acid 318
- 7-(2-Thienylacetamido)cephalosporanic acid 317

Keyword Index

- ADOLESCENTS 198, 199
- ADULTS 2, 3, 9, 11, 20, 21, 31-34, 37, 39-42, 45, 47, 48, 51, 52, 59, 76, 86, 91, 106-108, 115, 118, 139-141, 143, 148, 155, 156, 174, 176, 178, 179, 184, 190, 192, 198, 199, 204, 213, 215, 217, 220, 230, 233, 235, 248, 249, 253, 256, 263, 269, 271, 284, 285, 287, 292-295, 297-300, 302, 303, 305, 309, 311, 312, 315-320
- AGE 10, 11, 20, 26, 35, 38, 40, 83, 87, 97, 101, 102, 110, 113, 121, 133, 142, 143, 158, 168, 177, 178, 198, 199, 234, 250, 253, 263, 271, 279, 287
- AGRICULTURE 19, 51, 86, 100, 115, 141, 176, 233, 247, 248, 251, 283, 284, 292
- AIR POLLUTION 29, 251
- ALASKA 205
- ALDRIN 38, 87, 102, 142, 177, 234
- ANALGESICS 294, 295, 299, 300, 302, 303
- ANEMIA 198
- ANIMAL POPULATIONS 213, 214
- ANTIBIOTICS 293, 315-320
- ANTICONVULSANTS 225, 309
- ANTIHYPERTENSIVE AGENTS 298
- ANTIPYRETICS 294, 303
- ARIZONA 218
- ARKANSAS 44, 68, 77, 78, 96, 104, 132, 150, 151, 167, 185, 186, 237, 242, 257, 261, 264, 265, 267, 273, 274, 276, 278, 290
- AUSTRALIA 14, 108, 153, 188, 259
- AUSTRIA 175
- AUTONOMIC DRUGS 307
- AUTOPSIES 9, 10, 31, 35, 37, 101, 140, 217, 250
- BENZENES 2, 3, 52, 156, 179
- BIOACCUMULATION 1, 6, 8, 15, 21, 22, 25, 32, 44, 46, 54, 62, 67, 72, 76-78, 81, 91-94, 103-106, 109, 111, 114, 118, 119, 126, 127, 130, 138, 139, 145, 148, 150, 151, 154, 155, 157, 160, 161, 165, 173, 174, 181, 184-186, 189, 190, 198, 208, 213, 215, 235-237, 240, 251, 256, 257, 260, 264-266, 273-277, 290, 305
- BIPHENYL COMPOUNDS 4, 7, 22, 24, 27, 28, 42, 45, 60, 66, 70, 71, 78, 81, 82, 92-94, 104, 109, 111, 119, 123, 126, 129, 136, 137, 151, 157, 160, 163, 171, 172, 186, 216, 236, 239, 245, 246, 257, 262, 265, 268, 274, 275, 282, 290
- BROMINATED HYDROCARBONS 213
- BROMINE ORGANIC COMPOUNDS 213
- BULGARIA 175
- CALIFORNIA 139, 174, 218
- CANADA 1, 7, 10, 13, 28, 35, 38, 41, 43, 48, 64, 71, 74, 87, 89, 101, 102, 107, 116, 123, 124, 127, 137, 142, 146, 161, 172, 177, 182, 231, 234, 246, 250, 251, 254, 262, 268, 282, 288
- CARCINOGEN 29
- CARCINOMAS 22, 81, 92-94, 109, 111, 119, 126, 157, 160, 236, 275, 297, 311
- CARDIOVASCULAR DISEASES 107
- CASE HISTORIES 107
- CENTRAL NERVOUS SYSTEM DISEASES 309
- CHEMOTHERAPY 297, 311
- CHILDREN 37, 198, 199, 213, 217
- CHLORINATED HYDROCARBONS 1-3, 8, 9, 11, 15, 17, 20, 22, 26, 31, 40, 52, 61, 62, 68, 69, 72, 78, 79, 81, 83, 84, 92-97, 99, 104, 109-114, 119-122, 126, 127, 131-134, 138, 140, 143, 149, 151, 156-161, 166-169, 173, 178, 179, 186, 193, 212, 231, 232, 236, 241-243, 253, 257, 261, 263, 265, 267, 271, 274, 275, 278-280, 287, 290
- CHLORINE ORGANIC COMPOUNDS 1, 4, 7, 8, 10, 15-19, 22-24, 27, 28, 35, 37-39, 42, 45, 51, 60-62, 66, 68-72, 79, 81, 82, 84-87, 92-96, 99-102, 109, 111, 112, 114, 115, 119, 120, 122, 123, 126, 127, 129, 131, 132, 134-138, 141, 142, 157, 159-161, 163, 166, 167, 169-173, 175-177, 193, 210, 217, 232-234, 236, 239, 241-250, 261, 262, 267-269, 275, 278, 280-285, 291, 292
- CHLOROBENZENES 2-5, 8, 10, 15, 24, 35, 52, 60, 62, 66, 72, 82, 101, 114, 129, 138, 156, 163, 164, 173, 179, 239, 250
- COLORADO 33, 218
- COMPARATIVE EVALUATIONS 9, 12, 13, 18, 31, 37, 43, 48, 53, 57, 64, 65, 74, 75, 85, 89, 90, 116, 117, 124, 125, 135, 140, 146, 147, 170, 182, 183, 201, 217, 223, 229, 244, 249, 254, 255, 269, 272, 281, 285, 288, 289, 291, 297, 311, 312
- CONNECTICUT 218
- CROP DUSTING 19, 100, 247, 283
- CZECHOSLOVAKIA 63, 73, 80, 88, 144, 180
- DENMARK 224
- DIETS 11, 20, 40, 47, 50, 54, 55, 59, 143, 178, 195, 198, 199, 204, 205, 207, 209, 220, 223, 227, 230, 253, 263, 271, 287, 301
- DISEASES 37, 217
- DIURETICS 16, 307
- DRINKING WATER 208, 251
- DRUG THERAPY 48, 107, 108, 225, 293, 294, 297, 298, 304, 308-311, 313, 314
- DRUG THERAPY 313, 314
- DRUGS 16, 48, 107, 108, 192, 199, 211, 212, 224, 225, 293-295, 297-300, 302-311, 313-321
- EL SALVADOR 19, 100, 247, 283
- FARMS 213
- FATS 41, 63, 73, 80, 88, 144, 180, 231
- FECES 226
- FETUS 42, 45, 47, 58, 59, 129, 162, 203, 204, 207-209, 219, 225, 230, 238, 309
- FINLAND 53, 54
- FIRE RETARDANTS 32, 213-215
- FISHES 205
- FLUORINE COMPOUNDS 192
- FOOD ADDITIVES 198
- FOOD CONTAMINATION 19, 23, 32, 37, 54, 100, 208, 213-215, 217, 247, 251, 283
- FOODS 32, 47, 59, 95, 112, 120, 131, 166, 198, 199, 204, 205, 215, 220, 230, 241, 306
- FRANCE 48
- FUNGICIDES 12
- GASTROINTESTINAL SYSTEM 304
- GEORGIA 218
- GERMANY 175
- GUATEMALA 19, 100, 149, 247, 283
- GUINEA PIGS 199
- HAWAII 11, 20, 40, 128, 143, 162, 178, 238, 253, 263, 271, 287
- HEALTH HAZARDS 12, 29, 34, 37, 39, 175, 217, 224, 296
- HEXACHLOROCYCLOHEXAN 271
- HORMONES 296
- ILLINOIS 220
- INDIA 21, 57, 91, 106, 118, 155, 175, 190, 201, 229, 235
- INDIANA 301
- INDUSTRIAL AREAS 2, 3, 34, 52, 156, 179
- INDUSTRIAL CHEMICALS 2, 3, 10, 35, 41, 52, 101, 156, 179, 250
- INDUSTRIAL EMISSIONS 2, 3, 52, 156, 179
- INFANTS 23, 32, 37, 39, 42, 45, 47, 48, 50, 53, 59, 95, 108, 112, 120, 131, 166, 192, 198, 199, 204, 205, 208, 211, 215, 217, 220, 223, 225, 230, 241, 306
- INHALATION 208
- INSECTICIDES 17, 19, 61, 69, 79, 84, 99, 100, 122, 134, 149, 159, 169, 193, 232, 243, 247, 280, 283

Keyword Index

- IOWA 206, 208, 218
 IRAQ 208
 ISRAEL 26, 83, 97, 110, 113, 121, 133, 158, 168, 175, 279
 JAPAN 27, 30, 32, 37, 42, 45, 46, 70, 76, 136, 148, 171, 175, 184, 207-209, 215, 217, 245, 256, 293
 KANSAS 305
 LACTATION 1-3, 8, 11, 15, 17, 20, 30, 32, 39, 40, 44, 46, 49, 52-56, 61, 62, 68, 69, 72, 76, 77, 79, 84, 86, 99, 107, 114, 122, 127, 132, 134, 138, 139, 143, 148-150, 156, 159, 161, 167, 169, 173, 174, 178, 179, 184, 185, 193, 195, 196, 198-200, 202, 206, 208, 212, 215, 220, 222, 224, 225, 227, 228, 232, 237, 242, 243, 249, 253, 256, 261, 263, 264, 267, 269, 271, 273, 276, 278, 280, 285, 287, 293-296, 298-306, 308-310, 312-321
 LIPIDS 22, 26, 81, 83, 92-94, 97, 109-111, 113, 119, 121, 126, 133, 157, 158, 160, 168, 236, 275, 279
 LOUISIANA 2, 3, 52, 156, 179
 MEASUREMENT METHODS 2, 3, 41, 52, 65, 75, 90, 117, 125, 147, 156, 179, 183, 255, 272, 289, 296
 MELANOMAS 297, 311
 MENSTRUATION 198, 199
 MENTAL RETARDATION 208
 METABOLISM 55, 195, 227, 304
 METABOLITES 48, 68, 96, 132, 167, 192, 199, 210, 242, 261, 267, 278, 303-305, 309, 321
 METAL POISONING 208
 METALS 47, 49, 53-59, 191, 194-198, 200-209, 218-222, 226-230
 METHYL MERCURY COMPOUNDS 207, 209
 MICHIGAN 34, 39, 214, 216
 MINERALS 55, 195, 227
 MISSISSIPPI 44, 65, 68, 75, 77, 78, 90, 96, 104, 117, 125, 132, 147, 150, 151, 167, 183, 185, 186, 237, 242, 255, 257, 261, 264, 265, 267, 272-274, 276, 278, 289, 290
 MISSOURI 18, 85, 135, 170, 218, 244, 281, 291
 MONTANA 218
 NARCOTICS 295, 299, 300, 302, 313
 NECROPLASMS 22, 81, 92-94, 109, 111, 119, 126, 157, 160, 175, 236, 275
 NETHERLANDS 175, 251
 NEUROMUSCULAR DISEASES 48, 225
 NEW JERSEY 2, 3, 52, 156, 179
 NEW MEXICO 208
 NEW YORK 192, 218, 313
 NEW ZEALAND 47, 59, 204, 230
 NEWBORN 9, 21, 30, 31, 48, 55, 58, 91, 106, 107, 118, 140, 155, 190, 195, 203, 205, 219, 223, 225, 227, 235, 309, 310, 313, 321
 NORTH CAROLINA 36
 NORWAY 9, 17, 31, 61, 69, 79, 84, 99, 122, 134, 140, 159, 169, 193, 232, 243, 280
 NUTRITIONAL DEFICIENCIES 19, 50, 58, 100, 203, 219, 223, 247, 283
 NUTRITIONAL DISORDERS 223
 OCCUPATIONAL HAZARDS 175, 210
 OHIO 218, 222
 OKLAHOMA 218
 ORAL CONTRACEPTIVES 199
 ORAL DISEASES 199
 OREGON 218, 225
 ORGANIC CHLORINE COMPOUNDS 46, 76, 148, 184, 256
 PAKISTAN 175
 PENNSYLVANIA 2, 3, 52, 55, 98, 156, 179, 195, 218, 227
 PESTICIDE RESIDUES 2, 3, 6, 10, 11, 19-21, 25, 35, 40, 44, 52, 67, 77, 91, 100, 101, 106, 118, 130, 143, 150, 155, 156, 165, 178, 179, 185, 190, 235, 237, 240, 247, 250-253, 260, 263, 264, 266, 270, 271, 273, 276, 277, 283, 286, 287
 PESTICIDES 1, 4-11, 13-15, 17-20, 22, 24-26, 28, 31, 35, 40, 42-46, 51, 60-69, 71-86, 88-90, 92-101, 103-105, 109-117, 119-135, 137-141, 143-154, 157-170, 172-176, 178, 180-189, 193, 231-233, 236-244, 246-251, 253-285, 287-292
 PIGS 198
 POLAND 175
 POLYBROMINATED BIPHENYLS 32, 213-215
 POLYCHLORINATED BIPHENYLS 1, 4, 6, 7, 9-11, 13, 20, 22, 24-43, 45, 46, 60, 64, 66, 67, 70, 71, 74, 76, 81-83, 87, 89, 92-94, 97, 101, 102, 109-111, 113, 116, 119, 121, 123, 124, 126, 127, 129, 130, 133, 136, 137, 140, 142, 143, 146, 148, 157, 158, 160, 161, 163, 165, 168, 171, 172, 177, 178, 182, 184, 210, 215, 217, 234, 236, 239, 240, 245, 246, 250, 253, 254, 256, 260, 262, 263, 266, 268, 271, 275, 277, 279, 282, 287, 288
 POLYCHLORINATED QUATERPHENYLS 37, 217
 POLYCHLORINATED TERPHENYLS 7, 28, 71, 123, 137, 172, 246, 262, 268, 282
 POPULATION EXPOSURE 10-12, 20, 26, 29, 32, 33, 35, 38, 40, 44, 77, 83, 87, 97, 101-103, 105, 110, 113, 121, 133, 142, 143, 145, 150, 154, 158, 168, 175, 177, 178, 181, 185, 189, 215, 234, 237, 250, 251, 253, 263, 264,
 POPULATION EXPOSURE 271, 273, 276, 279, 286, 287
 PORTUGAL 152, 187, 258
 PREGNANCY 16, 30, 107, 198, 199, 205, 208, 304, 309, 310, 313
 PROGESTOGENS 312
 RADIOISOTOPES 198, 199, 222
 RATS 198
 REVIEW 29, 32, 39, 47, 58, 59, 175, 198, 199, 203, 204, 208, 214, 215, 219, 230, 251
 RURAL AREAS 8, 12, 15, 33, 38, 51, 57, 62, 72, 86, 87, 102, 114, 115, 138, 141, 142, 173, 176, 177, 201, 213, 229, 233, 234, 248, 284, 292
 RUSSIA 175
 SCOTLAND 308, 314
 SEX 199
 SKIN DISEASES 32, 199, 215
 SMOKING 38, 87, 98, 102, 142, 177, 199, 211, 234
 SOILS 47, 59, 204, 230
 SOLVENTS 2, 3, 52, 156, 179
 SOUTH DAKOTA 218
 SPAIN 12, 51, 86, 115, 141, 176, 233, 248, 284, 292
 STEROIDS 296
 SULFONAMIDES 305
 SWEDEN 4, 24, 60, 66, 82, 103, 105, 129, 145, 154, 163, 175, 181, 189, 197, 208, 239, 312
 TENNESSEE 208
 TEXAS 218
 THEOPHYLLINES 48
 TRACE ELEMENTS 47, 57-59, 197, 201, 203, 204, 219, 229, 230
 TRANQUILIZERS 310
 ULTRAVIOLET RADIATION 231
 UNITED KINGDOM 50, 58, 191, 194, 203, 219, 221, 251
 UNITED STATES 36, 175, 249, 251, 252, 269, 270, 285, 286
 URBAN AREAS 2, 3, 12, 38, 51, 52, 57, 86, 87, 102, 115, 141, 142, 156, 176, 177, 179, 201, 207, 209, 218, 229, 233, 234, 248, 284, 292
 UTAH 218
 VEGETATION 47, 59, 204, 230
 VITAMINS 223, 301
 WATER POLLUTION 29, 251
 WEST VIRGINIA 2, 3, 52, 156, 179
 WYOMING 218

Keyword Index

YUGOSLAVIA 8, 15, 62, 72, 114,
138, 173

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