United States
Environmental Protection
Agency

Office of
Pesticides and Toxic Substances
Washington, DC 20460

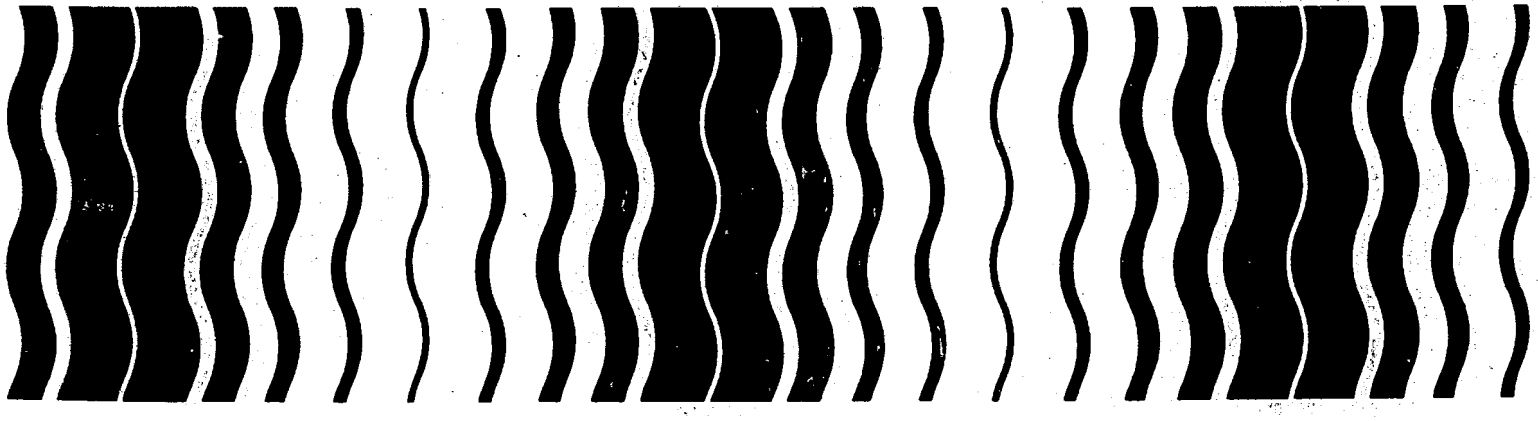
EPA 560/5-83-005
October 1983

Pesticides and Toxic Substances

EPA

Chemicals Identified in Human Breast Milk

A Literature Search



This report is available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161.

EPA 560/5-83-009
October 1983

CHEMICALS IDENTIFIED IN HUMAN BREAST MILK, A LITERATURE SEARCH

Compiled by
M. Virginia Cone, Margaret F. Baldauf,
Dennis M. Opresko and Mary S. Uziel

Chemical Effects Information Center
Information Center Complex/Information Division
Oak Ridge National Laboratory
Oak Ridge, Tennessee 37830

EPA/DOE IAG# DW930139-01-1

Cindy Stroup, EPA Project Officer
Joseph Breen and Janet Remmers, FSB Task Managers
Design and Development Branch
Field Studies Branch
Exposure Evaluation Division
Office of Pesticides and Toxic Substances
401 M Street, S.W.
Washington, D.C. 20460

DISCLAIMER

TABLE OF CONTENTS

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 Carcinogensis (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 Enviromental 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
Washington, DC 20460
Telephone (202) 382-3891

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) perferred 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 avaliable 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 avaliable, 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	Musial, C.J. Hutzinger, O. Zitko, V. Crocker, J. 1976 Bulletin of Environmental Contamination and Toxicology 12(3):258-267

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, 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.

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
3 Milk		GC/MS	82	a) 0.2-66 ng/ml b) 0.9-68 ng/ml c) 0.2-8.9 ng/ml d) 0.2-44 ng/ml e) 0.04-26 ng/ml f) 0.04-68 ng/ml	a) 19.37 +or- 25.54 ng/ml b) 24.48 +or- 31.69 ng/ml c) 1.71 +or- 2.41 ng/ml d) 8 +or- 13.98 ng/ml e) 4.30 +or- 8.25 ng/ml f) 9.15 +or- 17.3 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies vicinity of chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Toner, K.B. Waddell, P.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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	Westoo, 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.M. 1978 Bulletin of Environmental Contamination and Toxicology 19:281-286

(NEXT PAGE)

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

(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; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; 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; 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
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, H. Smit, Z. Olic, 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) Porsgrunn, non-industrialized fishing community 1976 survey. Significant difference ($P < 0.05$) between sampling sites: Bergen > Oslo > Harstad, Porsgrunn Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63

(NEXT PAGE)

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

(CONTINUED)

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.H. Braun, H.E. Frank, R. Stopps, G.J. Smout, M.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 Hawaiins 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
12 Milk		GC-EC	a) 21 b) 24 c) 45	a) 0.161-10.388 ppm b) 1.146-9.845 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 Barteache, A. PozoLora, R. Lopez Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 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.M. Breitkreitz, W.E. Cunningham, G.B. Bruns, 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. Smit, 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-Cl-N2-O4-S
MW 338.78, MP 224-226 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Mould, J.J. Siddle, N.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.F. 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 lindane. 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

(NEXT PAGE)

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

(CONTINUED)

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 DDD; 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

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		CC 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. 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
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	Westoo, 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; NONACHLOR; DDE; DIELDRIN	Hes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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.W. Ron, M. Wassermann, M. Cucos, S. Wassermann, D. Lemesch, 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. Kuwabara, 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; NONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Mes, 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

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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) Porsgrunn, non-industrialized fishing community 1976 survey. Significant increase (P < 0.05) in Oslo, Bergen, and Harstad samples compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
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, R.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. Malberg, 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.M. 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, M.V.H. Braun, H.E. Frank, R. Stoppa, G.J. Smout, M.S. McWade, J.W. 1977 Canadian Journal of Public Health 68:74-80

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
36 Milk			80	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

(NEXT PAGE)

Biphenyl, chloro (8 Cl)
1,1'-Biphenyl, chloro deriva (9 Cl)
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	Nes, 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	Masuda, Y. Kagawa, R. Kuroki, H. Kuratsune, M. Yoshimura, T. Taki, I. Kusuda, M. Yamashita, F. Hayashi, M. 1978 Food and Cosmetics Toxicology 16:543-546
43 Milk, fat		GC-EC	33	Not detectable-0.751 ppm	0.085 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. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55

(NEXT PAGE)

Biphenyl, chloro (6 Cl)
1,1'-Biphenyl, chloro derivs (9 Cl)
1336-36-3
EXACT COMPOSITION UNKNOWN OR UNDETERMINED

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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.W. 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	Masuda, Y. Kagawa, F. Kuroki, H. Kuratsune, M. Yoshimura, T. Taki, I. Kusuda, M. Yamashita, F. 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. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 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 mg/l	Not given	Only 6 of 28 samples exceeded detectable amounts of > or = 0.5 mg/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. Porthault, M. Bethenod, M. Frederich, A. Aranda, J.V. 1979 Journal of Pediatrics 94(6):988-993

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 mo lactation e) 13-18 mo lactation f) 19-31 mo 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 mg/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 Marteache, A. Polo Villar, L.M. Lopez-Jimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 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 +or- 0.48 ng/ml b) 23.34 +or- 24.3 ng/ml c) 1.53 +or- 1.74 ng/ml d) 3.09 +or- 6.34 ng/ml e) 7.21 +or- 3.55 ng/ml f) 5.57 +or- 10.9 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies near chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Toner, K.B. Waddell, B.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
53 Milk		AAS		a) 0.23-0.66 ng/ml b) 0.14-0.45 ug/day c) 0.19-0.69 ng/ml d) 0.13-0.44 ug/day	a) 0.43 + or - 0.13 ng/ml b) 0.27 + or - 0.10 ug/day c) 0.39 + or - 0.21 ng/ml d) 0.26 + or - 0.14 ug/day	a) 10 mothers, 8-18 days lactation b) 10 infants, 8-18 days old c) 5 mothers, 47-54 days lactation d) 5 infants, 47-54 days old Mothers and their breast-fed infants in Finland. MILK; LACTATION; FINLAND; CHROMIUM; METALS; COMPARATIVE EVALUATIONS; INFANTS	Kumpulainen, J. Vuori, E. 1980 American Journal of Clinical Nutrition 33:2299-2302
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. Makinen, S. Kara, R. 1980 British Journal of Nutrition 44:257-263

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 foran 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, M.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 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 months lactation e) 13-18 mo lactation f) 19-31 mo 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

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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.F. 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	Westoo, G. Noren, K. 1978 Ambio 7(2):62-64

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, alpha- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5beta,6beta)- (9 CI)
319-84-6
C6-H6-Cl6
MW 290.83, MP 159.5-160 C, BP 288 C, VP 0.02 mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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-Smit, M. Smit, 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. Hadaric, 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. Braitkreitz, 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)
319-85-7
C6-H6-Cl6
MW 290.83, MP 314-315 C (sublimes), BP 60 C at 0.58 mm Hg, VP 0.005 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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; HEXACHLOROCYCLOHEXANE	Westoo, 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; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Mes, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
68 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; HEXACHLOROCYCLOHEXANE; 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, M. 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 ppm, fat basis b) 6.2 ppm, fat basis c) 5.0 ppm, fat basis d) 4.9 ppm, fat basis e) 3.1 ppm, fat basis f) 5.0 ppm, fat basis g) 4.9 ppm, fat basis h) 3.4 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. Kuwabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 ng/g	a) 1 ng/g b) 1 ng/g c) 3 ng/g d) 2 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
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, M. Smit, Z. Olic, K. 1980 Pesticides Monitoring Journal 14(1):1-2
73 Milk, fat				Not given	0.49 ng/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. Maderic, 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. Kadis, V.W. Breitkreitz, H.E. Cunningham, G.B. Bruns, 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, B.W. D'Ercole, A.J. Cain, J.D. Arthur, R.D. 1979 Pesticides Monitoring Journal 13(2):47-51

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 ppm b) 3.25 + or - 1.59 ppm c) 4.54 + or - 2.73 ppm d) 4.78 + or - 2.85 ppm e) 3.10 + or - 1.51 ppm f) 2.47 + or - 1.00 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-181 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; PESTICIDES; ORGANIC CHLORINE COMPOUNDS; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15
77 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; 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 ppm	<0.01 ppm	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. Tobs, A.R. 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, MP 141.5-142.0 C, BP 60 C at 0.34 mm Hg, VP 0.02 mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Saip, S. 1976 Acta Paediatrica Scandinavica 65:535-539

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
80 Milk, fat				Not given	0.10 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	Szokolay, A. Kosival, L. Vanak, J. Radaric, 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, MP gamma-isomer crystals 112.5 C, BP 323.4 C, 176.2 C at 10 mm Hg, VP 0.14 mm Hg at 40 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
81 Mammary gland		CC 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, M. Bogusira, B.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
82 Milk		TLC 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	Westoo, G. Noren, K. 1978 Ambio 7(2):62-64

(NEXT PAGE)

Cyclohexane, 1,2,3,4,5,6-hexachloro-, gamma- (8 CI)
Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha,3beta,4alpha,5alpha,6beta)- (9 CI)
58-89-9
C6-H6-Cl6
MW 290.85, MP gamma-isomer crystals 112.5 C, BP 323.4 C, 176.2 C at 10 mm Hg, VP 0.16 mm Hg at 40 C
(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
83 Milk		GC	29	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. Ron, 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; 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
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, R. Herrera Barteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110

(NEXT PAGE)

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
87 Milk		GC-EC	154	a) 0-1.56 mg/kg fat b) Not given c) Not given	a) 0.087 +or- 0.131 mg/kg fat b) 0.04 +or- 0.07 mg/kg fat c) 0.03 +or- 0.03 mg/kg fat	a) 0.002 +or- 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.B. 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	Szokolay, A. Rosival, L. Uhnak, J. Hadaric, A. 1977 Ecotoxicology and Environmental Safety 1:349-359
89 Milk, fat		GC-EC	a) 53 b) 33	a) Not detectable-0.380 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.E. 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, B.W. 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 +or- 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; NEWBORN	Siddiqui, M.K.J. Saxena, M.C. Bhargava, A.K. Seth, T.D. Krishna Murti, C.R. Kutty, D. 1981 Environmental Research 26:26-32

DDT, Total (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
92 Mammary gland	*	CC GC-EC	a) 5 b) 9 c) 9	a) 8.29-18.30 ppm b) 9.07-29.39 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

(NEXT PAGE)

DDT, Total (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
98 Mammary gland		CC 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; 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
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.M. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285
96 Milk			57	0.02-2.76 ppm	0.38 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
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; 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

(NEXT PAGE)

DDT, Total (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 6:161-163
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) 98.0 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 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
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, M. 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 t 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.H. Braun, H.E. Frank, R. Stopps, G.J. Smout, M.S. McWade, J.W. 1977 Canadian Journal of Public Health 68:74-80

(NEXT PAGE)

DDT, Total (No postings in CHEMLINE).
50-29-3
C14-H9-Cl5
MW 354.50

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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	Westoo, 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. Tobs, 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	Westoo, 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, M.C. Bhargava, 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-((O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-beta-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-beta-D-ribo-hexopyranosyl)oxy)-12,14-dihydroxy-, (3beta,5beta,12beta)- (9 CI)
20830-75-5
C41-H64-O14
MW 780.92, MP about 265 C (decomp)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, N.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-H10-Cl4
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	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

(NEXT PAGE)

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
MW 320.05, MP 76-78 C

(CONTINUED)

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-chlorphenyl)- (8 CI)
Benzene, 1,1'-(2,2-dichloroethylidene)bis(4-chloro- (9 CI)
72-54-8
C14-H10-C14
MW 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) 0.5893 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. Tonatis, 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. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285

(NEXT PAGE)

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

(CONTINUED)

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.W. Ron, M. Wassermann, M. Cucos, S. Wassermann, 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. Olic, 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 Marteache, A. Polo Villar, L.M. 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. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
117 Milk, fat		GC-EC	a) 38 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, B.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 DDC; DDE; DDT; HEXACHLOROCYCLOHEXANE; LINDANE; BIOACCUMULATION; PESTICIDE RESIDUES; BLOOD; MILK; INDIA; ADULTS; NEWBORN	Siddiqui, M.K.J. Saxena, N.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
MW 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, 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

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
Benzene, 1-chloro-2-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)- (9 CI)
789-02-6
C14-H9-Cl5
MW 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, M-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, M. Wassermann, M. Cucos, S. Wassermann, D. Lemesch, 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.F. Seip, M. 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 TERPHENYLS	Hes, J. Davies, D.J. 1979 Bulletin of Environmental Contamination and Toxicology 21:381-387

(NEXT PAGE)

Ethane, 1,1,1-trichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)- (8 CI)
Benzene, 1-chloro-2-(2,2,2-trichloro-1-(4-chlorophenyl)ethyl)- (9 CI)
789-02-6
C14-H9-Cl5
MW 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 postpartus. 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
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.W. 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
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
126 Mammary gland		CC GC-EC	a) 5 b) 9 c) 9	a) 1.58-8.24 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, M. 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

(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
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	Klemmer, H.W. 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	Westoo, 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; NONACHLOR; DDE; DIELDRIN	Hea, 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, 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
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. Yobs, 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 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 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
138 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.F. 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. Armbruster, J. Kettelhut, L.L. Drucker, 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. 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

(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
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. Olic, 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) Porsgrunn, non-industrialized fishing community 1976 survey. Significant decrease at all sampling locations compared to a 1969/70 survey. Norwegian mothers, ages 25-28 yr. ADIPOSE TISSUE; MILK; COMPARATIVE EVALUATIONS; NORWAY; ADULTS; AUTOPSIES; NEWBORN; DDT; CHLORINATED HYDROCARBONS; DDT; PESTICIDES; POLYCHLORINATED BIPHENYLS	Brevik, E.M. Bjerk, J.E. 1978 Acta Pharmacologica et Toxicologica 43(1):59-63
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, E. Herrera Barteache, A. Polo Villar, L.M. Lopez-Gimenez, E. 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-C15
MW 354.50, MP 108.5-109 C, BP 260 C, VP 1.5X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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) 0.14 +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, M. Saidin, 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; FATS; CZECHOSLOVAKIA; HEXACHLOROCYCLOHEXANE; DDT; DDE; HEXACHLOROBENZENE	Szokolay, 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	Westoo, 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, BP 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. Kadis, V.W. Breitkreitz, W.E. Cunningham, G.P. Bruns, G.W. 1979 Pesticides Monitoring Journal 13(2):52-55
147 Milk, fat		GC-EC	a) 34 b) 6	a) 0.38-18.45 ppm b) 0.26-0.53 ppm	a) 8.25 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, B.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) 0.45 + or - 0.22 ppm b) 0.42 + or - 0.46 ppm c) 0.38 + or - 0.16 ppm d) 0.48 + 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. Kuaita, M. 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, M. Thomas, M. Wernick, S. Levin, S. Parvar, M.T. 1976 Bulletin of Environmental Contamination and Toxicology 16(6):652-657

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, F.W. 1977 Pesticides Monitoring Journal 10(4):130-133
151 Milk, whole		TLC. GC/MS GC-EC	57	0.01-0.9% 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, F.W. Strassman, S.C. Yobs, A.R. 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	Graca, I. Fernandes, A.M.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) 18 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	0.0072-0.113% 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 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

Ethylene, tetrachloro- (8 CI)
Ethene, tetrachloro- (9 CI)
127-18-4
C2-C14
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) 0.8->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) 8.10 +or- 8.15 ng/ml	a) Bayonne, NJ, 6 samples b) Jersey City, NJ, 5 samples c) Pittsburgh, PA, 12 samples d) Baton Rouge, LA, 10 samples e) Charleston, WV, 9 samples f) Total a)-e) Due to small sample size and nonrandom sampling, data cannot be extrapolated to entire population Study measured environmental pollutants in milk, evaluated using milk in pollutant studies near chemical manufacturing plants and/or industrial facilities. Additional data, U.S. and foreign, reviewed. For additional information contact Environmental Protection Agency, Exposure Evaluation Division, Office of Toxic Substances, Washington, DC 20461 Lactating volunteers, residing in area >12 mo, no travel out of area during preceding wk LOUISIANA; NEW JERSEY; PENNSYLVANIA; WEST VIRGINIA; ADULTS; MILK; MEASUREMENT METHODS; BENZENES; CHLORINATED HYDROCARBONS; CHLOROBENZENES; DDE; INDUSTRIAL AREAS; INDUSTRIAL EMISSIONS; LACTATION; PESTICIDE RESIDUES; URBAN AREAS; INDUSTRIAL CHEMICALS; SOLVENTS	Erickson, M.D. Harris, B.S.H., III Pellizzari, E.D. Tomer, K.B. Waddell, B.D. Whitaker, D.A. 1980 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	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

(NEXT PAGE)

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

(CONTINUED)

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, M. Wassermann, M. Cucos, S. Wassermann, D. Lenesch, C. 1977 Pesticides Monitoring Journal 10(8):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.F. Seip, M. 1976 Acta Paediatrica Scandinavica 65:535-539

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

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

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Hutzinger, 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 1968-1973 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	Westoo, 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.M. 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; OXYCHLORDANE; 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.M. Sokic, B. Smiljanski, M-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MP 88.8 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, M. Wassermann, M. 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.F. Seip, M. 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, metropoliton 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
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. Kuwabara, K. Yoshida, S. Hori, S. Fukushima, S. Kashimoto, T. Koyama, K. Kunita, N. 1979 Archives of Environmental Contamination and Toxicology 8:59-66

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
C14-H8-Cl4
MW 318.02, MP 88.8 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) 38 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 Maitonal 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.T. 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; BLOOD PLASMA; BLOOD SERUM; ERYTHROCYTES; LEUKOCYTES; MILK; URINE; REVIEW; HEALTH HAZARDS; OCCUPATIONAL HAZARDS; POPULATION EXPOSURE; NEOPLASMS; PESTICIDES; CHLORINE ORGANIC COMPOUNDS	Deichmann, W.B. MacDonald, W.E. 1977 Ecotoxicology and Environmental Safety 1:89-110

(NEXT PAGE)

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
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, M. Herrera Marteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
177 Milk		GC-EC	154	a) 0.01-6.79 mg/kg fat b) Not given c) Not given	a) 0.883 +or- 0.773 mg/kg fat b) 0.58 +or- 0.35 mg/kg fat c) 0.99 +or- 0.99 mg/kg fat	a) 154 samples, 0.032 +or- 0.028 mg/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, M. 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, M.D. Harris, B.S.H., III Pellizzari, E.D. Turner, K.B. Waddell, R.D. Whitaker, D.A. 1980 EPA 560/13-80-029, 153 pp.

(NEXT PAGE)

Ethylene, 1,1-dichloro-2,2-bis(p-chlorophenyl)- (8 CI)
Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro- (9 CI)
72-55-9
$C_{14}H_8Cl_4$
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 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	Szokolay, A. Kosival, L. Uhnak, J. Hadaric, 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 mg/kg b) 1.7 mg/kg c) 1.9 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
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; 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
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; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, H.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) 1.98 + or - 1.04 ppm d) 1.92 + or - 0.79 ppm e) 2.02 + or - 0.99 ppm f) 1.60 + or - 0.68 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 100-181 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

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Sample 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.R. 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) 58	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.M.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.W. 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 mg/kg b) 0.052 mg/kg c) 0.059 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
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, M.C. Bhargava, A.K. Seth, T.D. Krishna Murti, C.R. Kutty, D. 1981 Environmental Research 24:28-32

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.N. 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. Saip, 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
Atw 55.847, MP 1535 C (pure), 1000-1300 C (cast), 1500 C (wrought), 1300 C (steel), BP 3000 C, VP 1 mm Hg at 1787 C, 10 mm Hg at 2040 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 mo lactation e) 13-18 mo lactation f) 19-31 mo 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
197 Milk		AAS	15	0.26-0.73 ug/ml	0.41 ug/ml	0.1-19 mo post partum. 15-46% bound to lipid fraction. Healthy Swedish mothers. MILK; IRON; METALS; SWEDEN; TRACE ELEMENTS	Fransson, G-B. Lonnerdal, 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	Bowering, J. Sanchez, A.M. Irwin, M.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	Irwin, M.I. Hutchins, B.K. 1976 Journal of Nutrition 106(6):823-879

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 mo lactation e) 13-18 mo lactation f) 19-31 mo 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
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 33:668-669

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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) 1.81 + or - 0.51 f) 1.99 + or - 0.86 ug/100 ml	a) 1-3 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 mo lactation e) 13-18 mo lactation f) 19-31 mo 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, H.F. 1978 New Zealand Medical Journal 87(603):3-8

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

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

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Bahns, 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 Sumida 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	Koos, B.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 Sumida 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) 0.78 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. Nakamura, A. 1979 Bulletin of Environmental Contamination and Toxicology 21:111-115

Nicotine (8 CI)
Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- (9 CI)
54-11-5
C10-H14-N2
MW 162.23, MP <-80 C, BP 247 C (partial decomp) at 745 mm Hg, 123-125 C at 17 mm Hg, VP 1 mm Hg at 61.8 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, MP 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	Dunckel, 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, R.W. Finberg, L. 1977 Journal of Pediatrics 90(3):510-512
216 Milk, fat	Ingestion		a) 53 b) 62	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-18/62 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. Anburg, 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, N. 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 0.020 ppm Se. Only 3 were in the range of 0.052 to 0.060 ppm Se. The 241 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.M. 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 +or- 4.9 ng/ml b) 21.2 +or- 17.3 ng/ml b) 15.7 +or- 4.9 ng/ml d) 16.3 +or- 4.8 ng/ml e) 14.4 +or- 1.6 ng/ml f) 15.2 +or- 3.2 ng/ml g) 14.1 +or- 3.2 ng/ml h) 15.9 +or- 3.4 ng/ml	a) 8 mothers, sampled 3x/day before nursing, at 1, 2, and 3 mo postpartum b) 6 mothers, colostrum samples from each breast, 1-4 days postpartum c) Sampled before nursing at 2 wk lactation d) Sampled after nursing at 2 wk lactation e) Sampled before nursing at 1 mo lactation f) Sampled after nursing at 1 mo lactation g) Sampled before nursing at 2 mo lactation h) Sampled after nursing at 2 mo lactation c)-h) 5 mothers sampled 2x/day a) and b), g) and h) differed, $p < 0.05$. Significant positive correlation with protein content, $r = 0.49$ Additional data presented Lactating mothers, 1 day-3 mo postpartum, IL ILLINOIS; ADULTS; INFANTS; BLOOD SERUM; MILK; METALS; SELENIUM; DIETS; FOODS; LACTATION	Smith, A.M. Picciano, M.F. Milner, J.A. 1982 American Journal of Clinical Nutrition 35:521-526

Sodium, ion (Na(1+))
17341-25-2
Na
AtW 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

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
222 Milk	Injection	Radiometry	1	a) 1 x 10(E+6) cpm [1.0% uCi]/% ml b) 1.96 x 10(E+2) cpm [2.0% x 10(E-4) uCi]/% ml	a) Not given b) Not given	a) Peak 7 hr after administration b) 48 hr after administration (slightly above background) 1.9 x 10(E+10) cpm (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; OHIO	Pittard, W.B. Bill, K. Fletcher, B.D. 1979 Journal of Pediatrics 94(4):605-607

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. Zapursky, 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 mg. 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; NEUROMUSCULAR 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 ng/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.R. 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, M.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 mo lactation b) 4-6 mo lactation c) 7-9 mo lactation d) 10-12 mo lactation e) 13-18 mo lactation f) 19-31 mo 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, H.E. Robinson, M.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-C112
MW 545.6, MP 485 C, VP 6X10(E-6) mm Hg at 50 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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	Hen, J. Davies, D.J. Miles, W. 1978 Bulletin of Environmental Contamination and Toxicology 19:568-573

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.F. 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, E. Herrera Barteache, A. Polo Villar, L.M. Lopez-Gimenez, E. Jodral Villarejo, E. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 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

(NEXT PAGE)

1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, endo,exo- (8 CI)
1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-, (1alpha,4alpha,4abeta,5alpha,8alpha,8abeta)- (9 CI)
309-00-2
C12-H8-Cl6
MW 365.93, MP 108 C, VP 6X10(E-6) mm Hg at 25 C

(CONTINUED)

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 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

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 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(6):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; UTERUS; BLOOD SERUM; DDT; DDE; DIELDRIN	Klemmer, H.W. Budy, A.M. Takahashi, W. Haley, 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
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
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) 0.8-1.3 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	Westoo, 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	Hea, 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 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. Smiljanski, S-J 1978 Bulletin of Environmental Contamination and Toxicology 20:280-285
242 Milk			57	Trace-0.05 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; HEXACHLOROCYCLOHEXANE; DDE; ARKANSAS; MISSISSIPPI	Kutz, F.W. Strassman, S.C. Yobs, A.R. 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, M. 1976 Acta Paediatrica Scandinavica 65:535-539

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
244 Milk		GC	2 of 51	Not given	0.014 ppm	Random subjects of greater St. Louis, MO, metropoliton area. PESTICIDES; CHLORINE ORGANIC COMPOUNDS; DDT; DDE; DIELDRIN; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; MILK; MISSOURI; COMPARATIVE EVALUATIONS	Jonsson, V. Liu, G.J.K. Arabruster, 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. Watanabu, 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	Mes, 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, M. Olszyna-Marzys, 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)oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha,2beta,2aalpha,3beta,6beta,6aalpha,7beta,7aalpha)- (9 CI)
60-57-1
C12-H8-Cl6-O
MW 380.93, MP 176-177 C, VP 7.78X10(E-7) mm Hg at 20 C

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
248 Milk	Ingestion	GC	a) 21 b) 24 c) 45 d) 45	a) 0-0.389 ppm b) 0-0.112 ppm c) 0-0.381 ppm d) Not given	a) 0.031 ppm b) 0.010 ppm c) 0.020 ppm d) 0.0005 ppm	a) Rural mothers, fat basis b) Urban mothers, fat basis c) All mothers, fat basis d) All mothers, whole milk basis Data for sum of all pesticides and comparisons with values of other investigators given Nursing mothers from Cordoba region, Spain SPAIN; ADULTS; MILK; CHLORINE ORGANIC COMPOUNDS; PESTICIDES; AGRICULTURE; RURAL AREAS; URBAN AREAS	Pozo Lora, E. Herrera Barteache, A. Polo Villar, L.E. Lopez-Gimenez, E. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 35(206):93-110
249 Milk		GC	1836	97.9-242.3 ppb	164.2 + or - 436.2 ppb	Computed on fat adjusted basis Range of means for all geographic regions Nursing mothers, U.S.A. UNITED STATES; ADULTS; MILK; COMPARATIVE EVALUATIONS; CHLORINE ORGANIC COMPOUNDS; DIELDRIN; PESTICIDES; LACTATION	Savage, E.P. Keefe, T.J. Tessari, J.D. Wheeler, H.W. Applehans, F.M. Goes, E.A. Ford, S.A. 1981 American Journal of Epidemiology 133(4):413-422
250 Milk			a) 48 b) 38 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; CHLOROBENZENES; DDT; DIELDRIN; HEXACHLOROBENZENE; PESTICIDES; POLICHLORINATED BIPHENYLS; PESTICIDE RESIDUES; POPULATION EXPOSURE	Holdrinet, M.V.H. Braun, H.E. Frank, R. Stopps, G.J. Smout, M.S. McWade, 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; REVIEW; 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			1,836 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	Anon 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, 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
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, W. 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-8.66 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, E.W. 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 - 0.028 ppm e) 0.052 + or - 0.025 ppm	a) 1972, 40 samples b) 1973, 38 samples c) 1974, 19 samples d) 1975, 20 samples e) 1976, 19 samples f) 1977, 20 samples 100-141 lactating women, 2 months after delivery. Residents of Osaka Prefecture, Japan, varied diets and environmental conditions. PESTICIDES; DIELDRIN; ORGANIC CHLORINE COMPOUNDS; JAPAN; ADULTS; LACTATION; MILK; BIOACCUMULATION; POLYCHLORINATED BIPHENYLS	Yakushiji, T. Watanabe, I. Kuwabara, K. Yoshida, S. Koyama, K. Kunita, N. 1979 International Archives of Occupational and Environmental Health 43:1-15

(NEXT PAGE)

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

(CONTINUED)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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.W. 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	Portugese women. Dieldrin detected in 11 cases. Samples taken in 1972. PESTICIDES; DDT; DDE; DIELDRIN; MILK; PORTUGAL	Graca, I. Fernandes, A.M.S.S. Moreno, 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

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; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; NONACHLOR; DDE; DIELDRIN	Hen, 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; HEXACHLOROCYCLOHEXANE; 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-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

(CONTINUED)

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	Hes, 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 Hawaiins 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.W. 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.W. 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)
26880-48-8
C10-H4-Cl8-O
MW 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	Hen, J. Davies, D.J. 1978 Chemosphere 7(9):699-706
267 Milk			57	Trace-0.02 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; 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	Hen, 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(4):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

(NEXT PAGE)

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

(CONTINUED)

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; HEXACHLOROCYCLOHEXAN; 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
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; HEXACHLOROCYCLOHEXANE; HEPTACHLOR EPOXIDE; OXYCHLORDANE; DIELDRIN; MISSISSIPPI; COMPARATIVE EVALUATIONS; MEASUREMENT METHODS	Barnett, B.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. Yobs, 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)oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a-hexahydro- (9 CI)
1024-57-3
C10-H5-C17-O
MW 389.32

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
275 Mammary gland		CC 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; HEXACHLOROCYCLOHEXANE; DDE; HEPTACHLOR EPOXIDE	Wassermann, M. 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
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; HEXACHLOROBENZENE; DDT; HEXACHLOROCYCLOHEXANE; 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; HEXACHLOROCYCLOHEXANE; 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, 1,4,5,6,7,8,8-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 2-8 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. Lesesch, 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.F. Seip, M. 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	Joanson, 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; MONACHLOR; OXYCHLORDANE; PESTICIDES; POLYCHLORINATED BIPHENYLS; POLYCHLORINATED TERPHENYLS	Hen, 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, M. Olszyna-Marzys, 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 Hacteacho, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 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, F.M. Goen, 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; OXYCHLORDANE; PESTICIDE RESIDUES; POPULATION EXPOSURE	Anon 1977a Pesticide & Toxic Chemical News 5(8):10-11

(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
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. Kadis, V.W. Breitkreitz, 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, B.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, F.W. 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-Methanoindene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (8 CI)
4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro- (9 CI)
76-44-8
C10-H5-Cl7
MW 373.35, MP 95-96 C, VP 3X10(E-4) mm Hg at 25 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Armbruster, J. Kettelhut, L.L. Drucker, B. 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 Barteache, A. Polo Villar, L.M. Lopez-Gimenez, R. Jodral Villarejo, M. Iglesias Perez, J. 1979 Revista Espanola de Pediatria 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-ylacetyl)amino)-, (6R-trans)- (9 CI)
25953-19-9
C14-H14-N8-O4-S3
MW 454.5, MP 198-200 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, H. Haruyama, S. Shimizu, T. 1979 Journal of Pediatrics 94(1):151-152

Acetanilide, 4'-hydroxy- (8 CI)
Acetamide, N-(4-hydroxyphenyl)- (9 CI)
103-90-2
C8-H9-N-O2
MW 151.16, MP 169-170.5 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
294 Milk	Ingestion	MS	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 +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, B. Jostell, K.G. Melander, A. Wahlin-Boll, E. 1981 European Journal of Clinical Pharmacology 20:123-125

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
295 Milk	Ingestion	TLC GC	a) 1 b) 1	a) 1300-400 ng/ml b) 1600-200 ng/ml	a) Not applicable b) Not applicable	a) 1.5 and 12 hr. Initial measurement 600 ng/ml at 0.5 hr b) 3 and 48 hr. Initial measurement 1000 ng/ml at 0.5 hr Estimated from graph Dose 64 mg, plus 324 mg phenacetin, 454 mg aspirin and 60 mg codeine phosphate 30 and 32 yr old nursing mothers ADULTS; BLOOD PLASMA; MILK; ANALGESICS; DRUGS; NARCOTICS; CAFFEINE; LACTATION	Findlay, J.W.A. DeAngelis, R.L. Kearney, H.F. Welch, B.H. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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	Nilsson, 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)
1H-Imidazole-1-ethanol, alpha-(methoxymethyl)-2-nitro- (9 CI)
13551-87-6
C7-H11-N3-O4
MW 201.11

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
297 Mammary gland	Ingestion	HPLC	1	3-42 ug/g	Not applicable	1 and 4.3 hr after normalized dose of 1 g/sq m Estimated from graph. Biopsies of tumor Patient with breast carcinoma ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Hinchinton, A.I. 1981 British Journal of Cancer 43:348-349

L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)-
62571-86-2
C9-H15-N-03-S
MW 217.31

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, R.G. Fleiss, P.M. 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-03
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, M.P. Welch, R.M. Findlay, J.M. 1981 Clinical Pharmacology and Therapeutics 29(5):625-633

p-Acetophenetidide (8 CI)
Acetamide, N-(4-ethoxyphenyl)- (9 CI)
62-44-2
C10-H13-N-02
MW 179.21, MP 134-135 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, M.F. Welch, R.M. Findlay, J.M. 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-03
MW 169.18, MP 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) 256-458 ug/l	a) 129 + or - 39 ug/l b) 239 + or - 51 ug/l c) 318 + 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-H6-03
MW 138.12, MP 157-159 C, BP about 211 C at 20 mm Hg

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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, M.F. Welch, R.M. Findlay, J.M. 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 acetysalicylic acid tablets 1 hr after breakfast Peak levels Healthy nursing mothers, 24-32 yr old (mean 29 yr), 46-65 kg (mean 58 kg), 2-8 mo post-partus (mean 5 mo) ADULTS; MILK; ANALGESICS; ANTIPYRETICS; DRUGS; LACTATION; METABOLITES	Jamali, F. Kashavarz, E. 1981 International Journal of Pharmaceutics 8:285-290

Salicylic acid, 5-((p-(2-pyridylsulfamoyl)phenyl)azo)- (8 CI)
Benzoic acid, 2-hydroxy-5-((4-((2-pyridinylamino)sulfonyl)phenyl)azo)- (9 CI)
599-79-1
C18-H14-N4-O5-S
MW 398.39, MP 240-245 C (decomp)

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. Truelove, 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; KANSAS; ADULTS; MILK; DRUGS	Kauffman, R.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 mg/l	5.3 mg/l	After 113 g milk chocolate containing 240 mg theobromine and 16 mg caffeine. Peaks at 2.1-3.3 hr. Caucasians, ages 21-36 yr, wt 55-70 kg, nursing their infants 3-37 wk. Slight nausea in 3 mothers, no adverse effects on infants. BLOOD PLASMA; MILK; SALIVA; DRUGS; LACTATION; INFANTS; FOODS	Resman, B.H. Blumenthal, H.P. Jusko, W.J. 1977 Journal of Pediatrics 91(3):477-480

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. Heathorn, T. Horito, Y. Atkinson, A.J., Jr. Patterson, R. 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-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
308 Milk	Ingestion	Radiometry	1	0.0003-0.0001% radioactive dose/ml	Not given	6 and 24 hr after 100 mg propylthiouracil containing 100 uCi labelled drug Milk: serum non-protein bound S activity ratio = 0.55. Lactating mother DRUGS; DRUG THERAPY; BLOOD SERUM; MILK; LACTATION; SCOTLAND	Low, L.C.K. Lang, J. Alexander, W.D. 1979 Lancet 2(8150):1011

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
309 Milk	Ingestion	GC/MS	a) 1 b) 1 c) 1 d) 1 e) 1 f) 1	a) 2.2-5.0 ug/ml b) 0.034-4.7 ug/ml c) 0.45-0.72 ug/ml d) 0.12-1.05 ug/ml e) 1.2-1.5 ug/ml f) 0.18-1.6 ug/ml	a) Not given b) Not given c) Not given d) Not given e) Not given f) Not given	a) 4-20 days postnatal (pn). Dose 31.0 mg/kg/day. Serum levels 83.3-102.2 ug/ml b) 5-29 days pn. Dose 10.1 mg/kg/day. Serum, 4.74-96.3 ug/ml c) 3-25 days pn. Dose 9.6 mg/kg/day. Serum, 10.2-32.8 ug/ml d) 38-47 days pn. Dose 9.5 mg/kg/day. Serum 7.6-26.8 ug/ml e) 8-12 days pn. Dose 26.7 mg/kg/day, plus 7.4 primidone/kg/day. Serum 33.3-44.6 ug/ml f) 7-82 days pn. Dose 25.8 mg/kg/day plus 5.0 mg phenytoin/kg/day. Serum 15.2-73.8 ug/ml Data also given for metabolite. Epileptics 6 of 8 neonates developed icterus neonatorum. Minor abnormalities were hernias, diastasis of musculus rectus abdominis and weak abdominal walls. 2 were microcephalic ADULTS; FETUS; NEWBORN; CENTRAL NERVOUS SYSTEM DISEASES; BLOOD SERUM; MILK; ANTICONVULSANTS; DRUG THERAPY; DRUGS; LACTATION; METABOLITES; PREGNANCY	Nau, H. Rating, D. Koch, S. Hauser, I. Helge, H. 1981 Journal of Pharmacology and Experimental Therapeutics 219(3):768-777

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

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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-N3-04
MW 187.16

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 2 hr after normalized dose of 1 g/sq m, final measurement 27 ug/g at 8.5 hr Estimated from graph. Biopsies of tumor Patient with breast carcinoma ADULTS; CARCINOMAS; MELANOMAS; BLOOD PLASMA; CEREBROSPINAL FLUID; MAMMARY GLANDS; DRUG THERAPY; DRUGS; COMPARATIVE EVALUATIONS; CHEMOTHERAPY	Dische, S. Saunders, M.I. Riley, P.J. Hauck, J. Bennett, M.H. Stratford, M.R.L. Hinchinton, A.I. 1981 British Journal of Cancer 43:364-369

18,19-Dinor-17alpha-pregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (+-)- (8 CI)
18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17alpha)-(+-)- (9 CI)
6533-00-2
C21-H28-02
MW 312.44, MP 238-242 C (+ form), 239-241 C (- form)

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

3-Heptanone, 6-(dimethylamino)-4,4-diphenyl-
76-99-3
C21-H27-N-O
MW 309.49

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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. Inturrisi, C.E. Jerez, E. Wallach, R.C. 1975 American Journal of Obstetrics and Gynecology 121(5):617-621

4-Imidazoline-1-carboxylic acid, 3-methyl-2-thioxo-, ethyl ester (8 CI)
1H-Imidazole-1-carboxylic acid, 2,3-dihydro-3-methyl-2-thioxo-, ethyl ester (9 CI)
22232-58-8
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, L.C.K. Lang, J. Alexander, W.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
C16-H19-N3-O5-S
MW 365.41, MP 194 C (beta-Naphthalenesulfonate trihydrate)

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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; 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-((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-(6alpha,7beta(R*)))- (9 CI)
15686-71-2
C16-H17-N3-O4-S
MW 347.4

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

5H-Dibenz(b,f)azepine-5-carboxamide
298-46-4
C15-H12-N2-O
MW 236.26, MP 204-206 C

TISSUE	EXPOSURE ROUTE	ANALYTICAL METHOD	NUMBER OF CASES	RANGE	MEAN	GENERAL INFORMATION	REFERENCE
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 diphenylhydantion daily during gestation and lactation. DRUGS; BLOOD; LACTATION; NEWBORN; METABOLITES; MILK	Pynnonen, S. Sillanpaa, M. 1975 Lancet 2(7934):563

REFERENCES FOR THE DATA TABLE

Ackerman, L.
1980
Humans: Overview of Human Exposure to Dieldrin Residues in the Environment and Current Trends of Residue Levels in Tissue
Pesticides Monitoring Journal 14(2):64-69

Adamovic, V.M.; Sokic, B.; Sailjanski, S-J
1978
Some Observations Concerning the Ratio of the Intake of Organochlorine Insecticides Through Food and Amounts Excreted in the Milk of Breast-Feeding Mothers
Bulletin of Environmental Contamination and Toxicology 20:280-285

Anon
1977
What's in Breast Milk?
Lancet 1(8017):918

1977a
Breastfed Babies at Risk in Heavy Pesticide Use Areas, Survey Shows
Pesticide & Toxic Chemical News 5(8):10-11

1977c
PCBs and Child Bearing
Pollution 7(1):6

1978a
EPA Survey Shows Chemicals in Breast Milk of Nursing U.S. Women
Chemical Regulation Reporter 2(24):9

Bakken, A.F.; Seip, M.
1976
Insecticides in Human Breast Milk
Acta Paediatrica Scandinavica 65:535-539

Barnett, R.W.; D'Ercole, A.J.; Cain, J.D.; Arthur, R.D.
1979
Humans. Organochlorine Pesticide Residues in Human Milk Samples from Women Living in Northwest and Northeast Mississippi, 1973-1975
Pesticides Monitoring Journal 13(2):47-51

Bell, E.E.; Brown, E.J.; Milner, R.; Sinclair, J.C.; Zepursky, A.
1979
Vitamin E Absorption in Small Premature Infants
Pediatrics 63(6):830-832

Bitzen, P.-O.; Gustafsson, B.; Jostell, K.G.; Melander, A.; Wahlin-Boll, E.
1981
Excretion of Paracetamol in Human Breast Milk
European Journal of Clinical Pharmacology 20:123-125

Blinick, G.; Inturrisi, C.E.; Jerez, E.; Wallach, R.C.
1975
Methadone Assays in Pregnant Women and Progeny
American Journal of Obstetrics and Gynecology 121(5):617-621

Bory, C.; Baltassat, P.; Porthault, M.; Bethenod, M.; Frederich, A.; Aranda, J.V.
1979
Metabolism of Theophylline to Caffeine in Premature Newborn Infants
Journal of Pediatrics 94(6):988-993

Bowering, J.; Sanchez, A.M.; Irwin, M.I.
1976
A Conspectus of Research on Iron Requirements of Man
Journal of Nutrition 106(7):985-1074

Boyle, R.H.; Highland, J.H.
1979
The Persistence of PCBs
Environment 21(5):6-13,37,38

Bradt, P.T.; Herrenkohl, R.C.
1976
DDT in Human Milk - What Determines the Levels?
Science of the Total Environment 6:161-163

Brevik, E.M.
1978
Gas Chromatographic Method for the Determination of Organochlorine Pesticides in Human Milk
Bulletin of Environmental Contamination and Toxicology 19:281-286

Brevik, E.M.; Bjerk, J.E.
1978
Organochlorine Compounds in Norwegian Human Fat and Milk
Acta Pharmacologica et Toxicologica 43(1):59-63

Brilliant, L.B.; Anburg, G.V.; Isbister, J.; Humphrey, H.; Wilcox, K.; Eyster, J.; Bloomer, A.W.; Price, H.
1978
Breast-Milk Monitoring to Measure Michigan's Contamination with Polybrominated Biphenyls
Lancet 2(8091):643-646

Byrne, A.R.; Kosta, L.
1978
Vanadium in Foods and in Human Body Fluids and Tissues
Science of the Total Environment 10:17-30

Currie, R.A.; Kadis, V.W.; Breitkreitz, W.E.; Cunningham, G.B.; Bruns, G.W.
1979
Pesticide Residues in Human Milk, Alberta, Canada-1966-70, 1977-78
Pesticides Monitoring Journal 13(2):52-55

de Campos, M.; Olszyna-Marzys, A.E.
1979
Contamination of Human Milk with Chlorinated Pesticides in Guatemala and in El Salvador
Archives of Environmental Contamination and Toxicology 8:43-58

Deichmann, W.B.; MacDonald, W.E.
1977
Organochlorine Pesticides and Liver Cancer Deaths in the United States, 1930-1972
Ecotoxicology and Environmental Safety 1:89-110

Devlin, R.G.; Fleiss, P.M.
1981
Captopril in Human Blood and Breast Milk
Journal of Clinical Pharmacology 21:110-113

Dickinson, R.G.; Harland, R.C.; Lynn, R.K.; Smith, B.; Gerber, N.
1979
Transmission of Valproic Acid (Depakene) Across the Placenta: Half-life of the Drug in Mother and Baby
Journal of Pediatrics 94(5):832-835

Dillon, J.C.; Martin, G.B.; O'Brien, H.T.
1981
Pesticide Residues in Human Milk
Food and Cosmetics Toxicology 19:437-442

Dische, S.; Saunders, M.I.; Riley, P.J.; Hauck, J.; Bennett, M.H.; Stratford, M.R.L.; Hinchinton, A.I.
1981
The Concentration of Desmethylmisonidazole in Human Tumours and in Cerebrospinal Fluid
British Journal of Cancer 43:344-349

Dunckel, A.E.
1975
An Updating on the Polybrominated Biphenyl Disaster in Michigan
Journal of the American Veterinary Medical Association 167(9):838-841

Erickson, M.D.; Harris, B.S.H., III; Pellizzari, E.D.; Tomer, K.B.; Waddell, R.D.; Whitaker, D.A.
1980
Acquisition and Chemical Analysis of Mother's Milk for Selected Toxic Substances
EPA 560/13-80-029, 153 pp.

Ferguson, B.B.; Wilson, D.J.; Schaffner, W.
1976
Determination of Nicotine Concentrations in Human Milk
American Journal of Diseases of Children 130:837-839

Findlay, J.W.A.; DeAngelis, R.L.; Kearney, M.F.; Welch, R.M.; Findlay, J.M.
1981
Analgesic Drugs in Breast Milk and Plasma
Clinical Pharmacology and Therapeutics 29(5):625-633

Finley, J.P.; Harman, N.B.; Wong, P.Y.; Lickrish, G.M.
1979
Digoxin Excretion in Human Milk
Journal of Pediatrics 94(2):339-340

Franssor, G-B.; Lonnerdal, B.
1980
Iron in Human Milk
Journal of Pediatrics 96(3):380-384

Fry, B.M.; Taves, D.R.
1974
Maternal and Fetal Fluorometabolite Concentrations after Exposure to Methoxyflurane
American Journal of Obstetrics and Gynecology 119(2):199-204

Fujita, M.; Takabatake, E.
1977
Mercury Levels in Human Maternal and Neonatal Blood, Hair and Milk
Bulletin of Environmental Contamination and Toxicology 18(2):205-209

Galster, W.A.
1976
Mercury in Alaskan Eskimo Mothers and Infants
Environmental Health Perspectives 15:135-140

Graca, I.; Fernandes, A.M.S.S.; Mourao, H.C.
1978
Organochlorine Insecticide Residues in Human Milk in Portugal
Pesticides Monitoring Journal 8(3):148-156

Guthrie, B.E.; Robinson, M.F.
1978
The Nutritional Status of New Zealanders with Respect to Manganese, Copper, Zinc and Cadmium - A Review
New Zealand Medical Journal 87(603):3-8

Harrod, J.E.; Asquith, M.T.
1980
Pollutants in Breast Milk
New England Journal of Medicine 303(16):945-946

Holdrinet, M.V.H.; Braun, H.E.; Frank, R.; Stopps, G.J.; Smout, M.S.; McWade, J.W.
1977
Organochlorine Residues in Human Adipose Tissue and Milk from Ontario Residents, 1969-1974
Canadian Journal of Public Health 68:74-80

Humphrey, H.E.B.; Hayner, N.S.
1975
Polybrominated Biphenyls: An Agricultural Incident and Its Consequences. II. An Epidemiological Investigation of Human Exposure
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

Irwin, M.I.; Hutchins, B.K.
1976
A Conspectus of Research on Vitamin C Requirements of Man
Journal of Nutrition 106(6):823-879

Jamali, F.; Keshavarz, E.
1981
Salicylate Excretion in Breast Milk
International Journal of Pharmaceutics 8:285-290

Jonsson, V.; Liu, G.J.K.; Armbruster, J.; Kettelhut, L.L.; Drucker, B.
1977
Chlorohydrocarbon Pesticide Residues in Human Milk in Greater St. Louis, Missouri 1977
American Journal of Clinical Nutrition 30:1106-1109

Kafetzis, D.A.; Siafas, C.A.; Georgakopoulos, P.A.; Papadatos, C.J.
1981
Passage of Cephalosporins and Amoxicillin into the Breast Milk
Acta Paediatrica Scandinavica 70:285-288

Kampmann, J.P.; Hansen, J.M.; Johansen, K.; Helweg, J.
1980
Propylthiouracil in Human Milk. Revision of a Dogma
Lancet 1(8171):736-738

Kashimoto, T.; Miyata, H.; Kunita, N.
1981
The Presence of Polychlorinated Quaterphenyls in the Tissues of Yusho Victims
Food and Cosmetics Toxicology 19:335-340

Kauffman, R.E.; O'Brien, C.; Gilford, P.
1980
Sulfisoxazole Secretion into Human Milk
Pediatrics 97(5):839-841

Khan, A.K.A.; Truelove, S.C.
1979
Placental and Mammary Transfer of Sulphasalazine
British Medical Journal 2(6204):1553

Kirk, L.; Jorgensen, A.
1980
Concentrations of Cis(Z)-flupentixol in Maternal Serum, Amniotic Fluid, Umbilical Cord Serum, and Milk
Psychopharmacology 72:107-108

Klemmer, H.W.; Budy, A.M.; Takahashi, W.; Haley, T.J.
1977
Human Tissue Distribution of Cyclodiene Pesticides--Hawaii 1964-1973
Clinical Toxicology 11(1):71-82

Kodama, H.; Ota, H.
1980
Transfer of Polychlorinated Biphenyls to Infants from Their Mothers
Archives of Environmental Health 35(2):95-100

Kodric-Smit, M.; Smit, Z.; Olie, K.
1980
Organochlorine Contaminants in Human Milk from Slavonia Province, Yugoslavia, 1978
Pesticides Monitoring Journal 14(1):1-2

Koos, B.J.; Longo, L.D.
1976
Mercury Toxicity in the Pregnant Woman, Fetus, and Newborn Infant
American Journal of Obstetrics and Gynecology 126(3):390-409

Kumpulainen, J.; Vuori, E.
1980
Longitudinal Study of Chromium in Human Milk
American Journal of Clinical Nutrition 33:2299-2302

Kumpulainen, J.; Vuori, E.; Makinen, S.; Kara, R.
1980
Dietary Chromium Intake of Lactating Finnish Mothers: Effect on the Cr Content of Their Breast Milk
British Journal of Nutrition 44:257-263

Kutz, F.W.; Strassman, S.C.; Yobs, A.R.
1976
Survey of Pesticide Residues and Their Metabolites in the General Population of the United States
International Workshop on Biological Specimen Collection, April, 1976, Luxembourg

1977
Survey of Pesticide Residues and Their Metabolites in Humans
Pesticide Management and Insecticide Resistance, Academic Press, Inc., New York, San Francisco, London,
(pp. 523-539)

Loughnan, P.M.
1978
Digoxin Excretion in Human Breast Milk
Journal of Pediatrics 92(6):1019-1020

Low, L.C.K.; Lang, J.; Alexander, W.D.
1979
Excretion of Carbimazole and Propylthiouracil in Breast Milk
Lancet 2(8150):1011

Masuda, Y.; Kagawa, R.; Kuroki, H.; Kuratsune, M.; Yoshimura, T.; Taki, I.; Kusuda, M.; Yamashita, F.; Hayashi, H.
1978
Transfer of Polychlorinated Biphenyls from Mothers to Foetuses and Infants
Food and Cosmetics Toxicology 16:543-546

Mes, J.; Davies, D.J.
1978
Variation in the Polychlorinated Biphenyl and Organochlorine Pesticide Residues During Human Breastfeeding and Its Diurnal Pattern
Chemosphere 7(9):699-706

1979
Presence of Polychlorinated Biphenyl and Organochlorine Pesticide Residues and the Absence of Polychlorinated Terphenyls in Canadian Human Milk Samples
Bulletin of Environmental Contamination and Toxicology 21:381-387

Mes, J.; Davies, D.J.; Lau, P.-Y.
1980
The Effect of Extraction Technique on the Fat Content, Polychlorinated Biphenyl Level and Tri- to Octabiphenyl Distribution in Human Milk
Chemosphere 9:763-769

Mes, J.; Davies, D.J.; Miles, W.
1978
Traces of Mirex in Some Canadian Human Milk Samples
Bulletin of Environmental Contamination and Toxicology 19:564-570

Miller, R.W.; Finberg, L.
1977
Pollutants in Breast Milk
Journal of Pediatrics 90(3):510-512

Mulley, B.A.; Parr, G.D.; Pau, W.K.; Rye, R.M.; Mould, J.J.; Siddle, N.C.
1978
Placental Transfer of Chlorthalidone and its Elimination in Maternal Milk
European Journal of Clinical Pharmacology 13:129-131

Musial, C.J.; Hutzinger, O.; Zitko, V.; Crocker, J.
1974
Presence of PCB, DDE, and DDT in Human Milk in the Provinces of New Brunswick and Nova Scotia, Canada
Bulletin of Environmental Contamination and Toxicology 12(3):258-267

Nau, H.; Rating, D.; Koch, S.; Hauser, I.; Helge, H.
1981
Valproic Acid and Its Metabolites: Placental Transfer, Neonatal Pharmacokinetics, Transfer via Mother's Milk and Clinical Status in Neonates of Epileptic Mothers
Journal of Pharmacology and Experimental Therapeutics 219(3):768-777

Nilsson, S.; Nygren K-G.; Johansson, E.D.B.
1978
Transfer of Estradiol to Human Milk
American Journal of Obstetrics and Gynecology 132(6):653-657

Nilsson, S.; Nygren, K.; Johansson, E.D.B.
1977
d-Norgestrel Concentrations in Maternal Plasma, Milk, and Child Plasma During Administration of Oral Contraceptives to Nursing Women
American Journal of Obstetrics and Gynecology 129:178-184

Picciano, M.F.; Guthrie, H.A.
1976
Copper, Iron, and Zinc Contents of Mature Human Milk
American Journal of Clinical Nutrition 29:242-254

Pitkin, R.M.; Bahns, J.A.; Filer, L.J., Jr.; Reynolds, W.A.
1976
Mercury in Human Maternal and Cord Blood, Placenta, and Milk
Proceedings of the Society for Experimental Biology and Medicine 151:565-567

Pittard, W.B.; Bill, K.; Fletcher, B.D.
1979
Excretion of Technetium in Human Milk
Journal of Pediatrics 94(4):605-607

Polisiuk, Z.L.; Ron, M.; Wassermann, M.; Cucos, S.; Wassermann, D.; Lemesch, C.
1977
Pesticides in People
Pesticides Monitoring Journal 10(4):121-129

Polo Villar, L.M.; Herrera Marteache, A.; PozoLora, R.; Lopez Gimenez, R.; Jodral Villarejo, M.; Iglesias Perez, J.
1979
Hexachlorobenzeno (HCB) en Leches Humanas Espanolas
Revista Espanola de Pediatria 35(207-208):271-274

Pozo Lora, R.; Herrera Marteache, A.; Polo Villar, L.M.; Lopez-Gimenez, R.; Jodral Villarejo, M.; Iglesias Perez, J.
1979
Plaguicidas Organoclorados en Leches Humanas Espanolas
Revista Espanola de Pediatria 35(206):93-110

Pynnonen, S.; Sillanpaa, M.
1975
Carbamazepine and Mother's Milk
Lancet 2(7934):563

Rajalakshmi, K.; Srikantia, S.G.
1980
Copper, Zinc, and Magnesium Content of Breast Milk of Indian Women
American Journal of Clinical Nutrition 33:664-669

Resman, B.H.; Blumenthal, H.P.; Jusko, W.J.
1977
Breast Milk Distribution of Theobromine from Chocolate
Journal of Pediatrics 91(3):477-480

Savage, E.P.; Keefe, T.J.; Tessari, J.D.; Wheeler, H.W.; Applehans, F.M.; Goes, E.A.; Ford, S.A.
1981
National Study of Chlorinated Hydrocarbon Insecticide Residues in Human Milk, USA
American Journal of Epidemiology 133(4):413-422

Savage, E.P.; Tessari, J.D.; Halberg, J.W.; Wheeler, H.W.
1973
A Search for Polychlorinated Biphenyls in Human Milk in Rural Colorado
Bulletin of Environmental Contamination and Toxicology 9(4):222-226

Shaw, J.C.L.
1976
Evidence for Defective Skeletal Mineralization in Low-Birthweight Infants: The Absorption of Calcium and Fat
Pediatrics 57(1):16-25

1980
Trace Elements in the Fetus and Young Infant II. Copper, Manganese, Selenium, and Chromium
American Journal of Diseases of Children 134:74-81

Shearer, T.R.; Hadjimarkcos, D.M.
1975
Geographic Distribution of Selenium in Human Milk
Archives of Environmental Health 30(5):230-233

Siddiqui, M.K.J.; Saxena, M.C.; Bhargava, A.K.; Seth, T.D.; Krishna Murti, C.R.; Kutty, D.
1981
Agrochemicals in the Maternal Blood, Milk, and Cord Blood: A Source of Toxicants for Prenates and Neonates
Environmental Research 24:24-32

Smith, A.M.; Picciano, M.F.; Milner, J.A.
1982
Selenium Intakes and Status of Human Milk and Formula Fed Infants
American Journal of Clinical Nutrition 35:521-526

Stacey, C.I.; Thomas, B.W.
1975
Organochlorine Pesticide Residues in Human Milk, Western Australia - 1970-1971
Pesticides Monitoring Journal 9(2):64-66

Stec, G.P.; Greenberger, P.; Ruo, T.I.; Henthorn, T.; Horito, Y.; Atkinson, A.J., Jr.; Patterson, R.
1980
Kinetics of Theophylline Transfer to Breast Milk
Clinical Pharmacology and Therapeutics 28(3):404-408

Strassman, S.C.; Kutz, F.W.
1977
Insecticide Residues in Human Milk from Arkansas and Mississippi, 1973-74
Pesticides Monitoring Journal 10(4):130-133

Szokolay, A.; Rosival, L.; Uhnak, J.; Madaric, A.
1977
Dynamics of Benzene Hexachloride (BHC) Isomers and Other Chlorinated Pesticides in the Food Chain and in Human Fat
Ecotoxicology and Environmental Safety 1:349-359

Takahashi, W.; Saidin, D.; Takei, G.; Wong, L.
1981
Organochloride Pesticide Residues in Human Milk in Hawaii, 1979-80
Bulletin of Environmental Contamination and Toxicology 27:506-511

Vaughan, L.A.; Weber, C.W.; Kemberling, S.R.
1979
Longitudinal Changes in the Mineral Content of Human Milk
American Journal of Clinical Nutrition 32:2301-2306

Wassermann, M.; Nogueira, D.P.; Tomatis, L.; Mirra, A.P.; Shibata, H.; Arie, G.; Cucos, S.; Wassermann, D.
1976
Organochlorine Compounds in Neoplastic and Adjacent Apparently Normal Breast Tissue
Bulletin of Environmental Contamination and Toxicology 15(4):478-484

West, K.D.; Kirksey, A.
1976
Influence of Vitamin B6 Intake on the Content of the Vitamin in Human Milk
American Journal of Clinical Nutrition 29:961-969

West, R.W.; Wilson, D.J.; Schaffner, W.
1975
Hexachlorophene Concentrations in Human Milk
Bulletin of Environmental Contamination and Toxicology 13(2):167-169

Westoo, G.
1974
Changes in the Levels of Environmental Pollutants (Hg, DDT, Dieldrin, PCB) in Some Swedish Foods
Ambio 3(2):79-83

Westoo, G.; Noren, K.
1978
Organochlorine Contaminants in Human Milk, Stockholm 1967-1977
Ambio 7(2):62-64

Wickizer, T.M.; Brilliant, L.B.
1981
Testing for Polychlorinated Biphenyls in Human Milk
Pediatrics 68(3):411-415

Wickizer, T.M.; Brilliant, L.B.; Copeland, R.; Tilden, R.
1981
Polychlorinated Biphenyl Contamination of Nursing Mothers' Milk in Michigan
American Journal of Public Health 71(2):132-137

Winter, M.; Thomas, M.; Wernick, S.; Levin, S.; Farvar, M.T.
1976
Analysis of Pesticide Residues in 290 Samples of Guatemalan Mother's Milk
Bulletin of Environmental Contamination and Toxicology 16(6):652-657

Yakushiji, T.; Watanabe, I.; Kuwabara, K.; Yoshida, S.; Hori, S.; Fukushima, S.; Kashimoto, T.; Koyama, K.; Kunita, N.
1979
Levels of Organochlorine Pesticides and Polychlorinated Biphenyls (PCBs) in Mothers' Milk Collected in Osaka Prefecture from 1969-1976
Archives of Environmental Contamination and Toxicology 8:59-66

Yakushiji, T.; Watanabe, I.; Kuwabara, K.; Yoshida, S.; Koyama, K.; Kunita, N.
1979
Levels of Polychlorinated Biphenyls (PCBs) and Organochlorine Pesticides in Human Milk and Blood Collected in Osaka Prefecture from 1972 to 1977
International Archives of Occupational and Environmental Health 43:1-15

Yoshida, S.; Nakamura, A.
1979
Residual Status after Parturition of Methylsulfone Metabolites of Polychlorinated Biphenyls in the Breast Milk of a Former Employee in a Capacitor Factory
Bulletin of Environmental Contamination and Toxicology 21:111-115

Yoshioka, H.; Cho, K.; Takimoto, H.; Maruyama, S.; Shimizu, T.
1979
Transfer of Cefazolin into Human Milk
Journal of Pediatrics 94(1):151-152

INDICES

CAS Preferred Name Index

CAS Preferred Name Index

CAS Registry Number Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Chemical Synonym Index

Keyword Index

Keyword Index

Keyword Index

50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. EPA 560/5-83-009	2.	3. Recipient's Accession No.
4. Title and Subtitle: Chemicals Identified in Human Breast Milk, A Literature Search			5. Report Date: October 1983 6.
7. Author(s): M. Virginia Cone, Margaret F. Baldauf, Dennis M. Opresko, and Mary S. Uziel (Data Base)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address: Chemical Effects Information Center, Information Center Complex/Information Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) EPA/DOE IAG # (G) DW930139-01-1
12. Sponsoring Organization Name and Address: U.S. Environmental Protection Agency, Office of Toxic Substances, Exposure Evaluation Division, 401 M Street SW, Washington, DC 20460			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This is a computerized literature search for data on chemicals identified in human mammary gland, milk, milk fat and whole milk. It 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.

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.

17. Document Analysis a. Descriptors

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement: For release to public	19. Security Class (This Report): UNCLASSIFIED	21. No. of Pages
	20. Security Class (This Page): UNCLASSIFIED	22. Price

(See ANSI-Z39.18) See Instructions on Reverse OPTIONAL FORM 272 (4-77) (Formerly NTIS-35) Department of Commerce