ionz

SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Methoxychlor
Catalog Number : io-2640
CAS Number : 72-43-5
Identified uses : Laboratory chemicals, manufacture of chemical compounds
Company : Ionz

>> R&D Use only

2. Hazards Identification

GHS Classification:

Flammable liquid (category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

Note

>> Pictograms displayed are for 94.5% (52 of 55) of reports that indicate hazard statements. This chemical does not meet GHS hazard criteria for 5.5% (3 of 55) of reports.

Pictogram(s)

GHS Hazard Statements

>> H302+H312+H332 (30.9%): Harmful if swallowed, in contact with skin or if inhaled [Warning Acute toxicity, oral; acute toxicity, dermal; acute toxicity, inhalation]

>> H302 (92.7%): Harmful if swallowed [Warning Acute toxicity, oral]

>> H312 (30.9%): Harmful in contact with skin [Warning Acute toxicity, dermal]

>> H332 (30.9%): Harmful if inhaled [Warning Acute toxicity, inhalation]

>> H350i (29.1%): May cause cancer by inhalation [Danger Carcinogenicity]

>> H361 (30.9%): Suspected of damaging fertility or the unborn child [Warning Reproductive toxicity]

>> H371 (63.6%): May cause damage to organs [Warning Specific target organ toxicity, single exposure]

>> H373 (30.9%): May causes damage to organs through prolonged or repeated exposure [Warning Specific target organ toxicity, repeated exposure]

>> H400 (94.5%): Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

>> H410 (32.7%): Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P203, P260, P261, P264, P270, P271, P273, P280, P301+P317, P302+P352, P304+P340, P308+P316, P317, P318, P319, P321, P330, P362+P364, P391, P405, and P501

Health Hazards:

>> Toxicity is relatively low. Inhalation or ingestion causes generalized depression. (USCG, 1999)

>> Special Hazards of Combustion Products: Irritating and toxic hydrogen chloride gas may be formed in fire. (USCG, 1999)

>> Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire.

3. Composition/Information On Ingredients

Chemical name : Methoxychlor
CAS Number : 72-43-5
Molecular Formula : C16H15Cl3O2
Molecular Weight : 345.6000 g/mol

4. First Aid Measures

First Aid:

>> EYES: First check the victim for contact lenses and remove if present. Flush victim's eyes with water or normal saline solution for 20 to 30 minutes while simultaneously calling a hospital or poison control center. Do not put any ointments, oils, or medication in the victim's eyes without specific instructions from a physician. IMMEDIATELY transport the victim after flushing eyes to a hospital even if no symptoms (such as redness or irritation) develop.

>> SKIN: IMMEDIATELY flood affected skin with water while removing and isolating all contaminated clothing. Gently wash all affected skin areas thoroughly with soap and water. If symptoms such as redness or irritation develop, IMMEDIATELY call a physician and be prepared to transport the victim to a hospital for treatment.

>> INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. If symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop, call a physician and be prepared to transport the victim to a hospital. Provide proper respiratory protection to rescuers entering an unknown atmosphere. Whenever possible, Self-Contained Breathing Apparatus (SCBA) should be used; if not available, use a level of protection greater than or equal to that advised under Protective Clothing.

>> INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport the victim to a hospital. (NTP, 1992)

First Aid Measures

Inhalation First Aid

>> Fresh air, rest.

Skin First Aid

>> Remove contaminated clothes. Rinse and then wash skin with water and soap.

Eye First Aid

>> First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion First Aid

>> Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Give one or two glasses of water to drink. Refer for medical attention .

5. Fire Fighting Measures

>> Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]:

>> CAUTION: Fire involving Safety devices (UN3268) and Fire suppressant dispersing devices (UN3559) may have a delayed activation and a risk of hazardous projectiles. Extinguish the fire at a safe distance.

>> SMALL FIRE: Dry chemical, CO2, water spray or regular foam.

>> LARGE FIRE: Water spray, fog or regular foam. Do not scatter spilled material with high-pressure water streams. If it can be done safely, move undamaged containers away from the area around the fire. Dike runoff from fire control for later disposal.

>> FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks in direct contact with flames. (ERG, 2024)

>> Use water spray, powder, alcohol-resistant foam, carbon dioxide.

6. Accidental Release Measures

Isolation and Evacuation:

Isolation and evacuation measures to take when a large amount of this chemical is accidentally released in an emergency.

>> Excerpt from ERG Guide 171 [Substances (Low to Moderate Hazard)]:

>> IMMEDIATE PRECAUTIONARY MEASURE: Isolate spill or leak area in all directions for at least 50 meters (150 feet) for liquids and at least 25 meters (75 feet) for solids.

>> SPILL: Increase the immediate precautionary measure distance, in the downwind direction, as necessary.

>> FIRE: If tank, rail tank car or highway tank is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. (ERG, 2024)

Spillage Disposal:

Methods for containment and safety measures to protect workers dealing with a spillage of this chemical.

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

7. Handling And Storage

Safe Storage:

>> Separated from food and feedstuffs. Well closed. Keep in a well-ventilated room.

Storage Conditions:

>> Storage temperature: ambient

8. Exposure Control/ Personal Protection

>> Ca See Appendix A

>> 15.0 [mg/m3], total dust

PEL-TWA (8-Hour Time Weighted Average)

>> 15 mg/m³ (total dust)

>> 10.0 [mg/m3]

>> 10 mg/m

TLV-TWA (Time Weighted Average)

>> 10 mg/m³ [1992]

MAK (Maximale Arbeitsplatz Konzentration)

>> (inhalable fraction): 1 mg/m

Inhalation Risk:

>> Evaporation at 20 °C is negligible; a harmful concentration of airborne particles can, however, be reached quickly on spraying or when dispersed, especially if powdered.

Effects of Long Term Exposure:

>> Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Acceptable Daily Intakes:

An estimate of the amount of a chemical in food or drinking water that can be consumed daily over a lifetime without presenting an appreciable risk to health. It is usually expressed as milligrams of the substance per kilogram of body weight per day and applies to chemicals such as food additives, pesticide residues and veterinary drugs.

>> In 2-yr feeding study no adverse affect was observed at 200 ppm in rats. On the basis of these chronic data an ADI was calculated at 0.1 mg/kg/day.

Fire Prevention

>> NO open flames.

Exposure Prevention

>> PREVENT DISPERSION OF DUST! STRICT HYGIENE! AVOID EXPOSURE OF (PREGNANT) WOMEN!

Inhalation Prevention

>> Use local exhaust or breathing protection.

Skin Prevention

>> Protective gloves. Protective clothing.

Eye Prevention

>> Wear safety spectacles or eye protection in combination with breathing protection.

Ingestion Prevention

>> Do not eat, drink, or smoke during work. Wash hands before eating.

Exposure Control and Personal Protection

Exposure Summary

>> TIH (Toxic Inhalation Hazard) - Term used to describe gases and volatile liquids that are toxic when inhaled. Some are TIH materials themselves, e.g., chlorine, and some release TIH gases when spilled in water, e.g., chlorosilanes. [ERG 2016].

Maximum Allowable Concentration (MAK)

>> 1.0 [mg/m3], inhalable fraction[German Research Foundation (DFG)]

9. Physical And Chemical Properties

Molecular Weight:

>> 345.6

Exact Mass:

>> 344.013763

Physical Description:

>> Methoxychlor is a white crystalline solid which is often dissolved in a liquid carrier such as diesel oil. It can cause illness by inhalation, skin absorption and/or ingestion. The primary hazard is the threat to the environment. Immediate steps should be taken to limit its spread to the environment. If dissolved in a liquid carrier, it can easily penetrate the soil and contaminate groundwater and nearby streams. It is used as a pesticide.

>> COLOURLESS-TO-LIGHT-YELLOW CRYSTALS WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Colorless crystals (technical, grey powder)

Odor:

>> Slight, fruity odor

Boiling Point:

>> Decomposes (NTP, 1992)

Melting Point:

>> 187 to 190 °F (NTP, 1992)

>> 89 °C

Solubility:

>> less than 1 mg/mL at 73 °F (NTP, 1992)

>> Solubility in water: none

Density:

>> 1.41 at 77 °F (USCG, 1999) - Denser than water; will sink

>> 1.4 g/cm³

Vapor Density:

>> 12 (NTP, 1992) - Heavier than air; will sink (Relative to Air)

Vapor Pressure:

>> Very low (NTP, 1992)

>> negligible

LogP:

>> log Kow = 5.08

>> 4.68/5.08

Stability/Shelf Life:

>> Stable to UV light.

Decomposition:

>> ... When heated to decomp, it emits highly toxic fumes of /hydrogen chloride/ .

Corrosivity:

The ability of a chemical to damage or destroy other substances when it comes into contact.

>> Methoxychlor will attack some forms of plastics, rubbers, and coatings.

Odor Threshold:

>> 4.7 mg/kg in water

10. Stability And Reactivity

>> Insoluble in water.

11. Toxicological Information

Toxicity Summary:

>> Certain mono- and bis-hydroxy metabolites of methoxychlor, especially 2,2-bis(p-hydroxyphenyl)-1,1, 1-trichloroethane (HPTE), act as estrogen analogues. HPTE is an estrogen receptor alpha agonist, and also acts as an antagonist at the estrogen receptor beta and androgen receptor. This affects protein synthesis, which is believed to cause many of methoxychlor's estrogenic effects, such as decreased fertility. As methoxychlor is also a structural analogue of DDT, it is believed to have the same neurotoxic effects. This includes preventing the deactivation of the sodium gate after neuron activation and membrane depolarization, resulting in hyperexcitability of the nerve. Like DDT, methoxychlor may also inhibit neuronal adenosine triphosphatases (ATPases), particularly Na+K+-ATPase and Ca2+-ATPase, which play vital

roles in neuronal repolarization. This contributes to the reduced rate of depolarization and increases the sensitivity of neurons to small stimuli that would not elicit a response in a fully depolarized neuron. (T10, A118)

USGS Health-Based Screening Levels for Evaluating Water-Quality:

This section provides the USGS Health-Based Screening Levels for Evaluating Water-Quality data.

Chemical

>> Methoxychlor

MCL (Maximum Contaminant Levels)[µg/L]

>> 40

Reference

>> Smith, C.D. and Nowell, L.H., 2024. Health-Based Screening Levels for evaluating water-quality data (3rd ed.). DOI:10.5066/F71C1TWP

Evidence for Carcinogenicity:

Evidence that this chemical does or may cause cancer. The information here is collected from various sources by the Hazardous Substances Data Bank (HSDB).

>> Classification of carcinogenicity: 1) evidence in humans: no data; 2) evidence in animals: insufficient. Overall summary evaluation of carcinogenic risk to humans is Group 3: The agent is not classifiable as to its carcinogenicity to humans. /From table/

Carcinogen Classification:

This section provides the International Agency for Research on Cancer (IARC) Carcinogenic Classification and related monograph links. In the IARC Carcinogenic classification, chemicals are categorized into four groups: Group 1 (carcinogenic to humans), Group 2A (probably carcinogenic to humans), Group 2B (possibly carcinogenic to humans), and Group 3 (not classifiable as to its carcinogenicity to humans).

IARC Carcinogenic Agent

>> Methoxychlor

IARC Carcinogenic Classes

>> Group 3: Not classifiable as to its carcinogenicity to humans

IARC Monographs

>> Volume 20: (1979) Some Halogenated Hydrocarbons

>> Volume Sup 7: Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42, 1987; 440 pages; ISBN 92-832-1411-0 (out of print)

>> 3, not classifiable as to its carcinogenicity to humans. (L135)

Health Effects:

>> Animal studies show that methoxychlor may affect the reproductive system, causing harm to the ovaries, uterus, and mating cycle in females, and the testes and prostate in males, as well as decreased fertility in both sexes. Methoxychlor exposure may also cause EEG pattern changes. (T10. L167)

Exposure Routes:

>> The substance can be absorbed into the body by inhalation of its aerosol, through the skin and by ingestion.

>> inhalation, ingestion

Inhalation Exposure

>> See Ingestion.

Ingestion Exposure

>> Convulsions. Diarrhoea. Nausea. Vomiting.

>> In Animals: fasciculation, trembling, convulsions; kidney, liver damage; [potential occupational carcinogen]

Target Organs:

Organs that are affected by exposure to this chemical. Information in this section reflects human data unless otherwise noted.

>> Developmental (effects while organs are developing), Neurological (Nervous System), Neurological (Nervous System), Reproductive (Producing Children)

>> Developmental

Cancer Sites:

The site in which cancer develops due to exposure to this compound. Cancers are casually referred to based on their primary sites (e.g., skin, lung, breasts, prostate, colon and rectum).

>> [in animals: liver & ovarian cancer]

Adverse Effects:

An adverse effect is an undesired harmful effect resulting from a medical treatment or other intervention.

>> Occupational hepatotoxin - Secondary hepatotoxins: the potential for toxic effect in the occupational setting is based on cases of poisoning by human ingestion or animal experimentation.

>> Other Poison - Organochlorine

>> ACGIH Carcinogen - Not Classifiable.

Toxicity Data:

>> LD50: 3460 mg/kg (Oral, Rat) (L167)

Minimum Risk Level:

The minimal risk level (MRL) is an estimate of the amount of a chemical a person can eat, drink, or breathe each day without a detectable risk to health

>> Intermediate Oral: 0.005 mg/kg/day (L134)

Interactions:

>> Genistein (GE) is a prevalent phytoestrogen whose presence in human and animal foods may affect biological actions of synthetic endocrine active compounds. We have previously reported that in utero and lactational exposure to high doses of GE or the endocrine active pesticide methoxychlor (MXC) caused mammary epithelial proliferation in 21-day-old male rats. Combined exposure to GE and MXC resulted in significant feminization of the male mammary glands. The goals of the current study were to evaluate mammary responses to GE and MXC at the adult stage and investigate relevant mechanisms. Following in utero, lactational exposure (through maternal diet), and direct dietary exposure, the inguinal mammary gland of male rats (90 days of age) was found to exhibit significant morphological alterations in the groups treated with GE and/or MXC compared to the control. GE exposure (at 300 and 800 ppm concentrations) caused lobular enlargement and epithelial proliferation, whereas MXC exposure (800 ppm) led to ductal elongation and lobular enlargement. Combining the two treatments caused prominent proliferation of both ducts and alveoli; secretory material was seen in readily recognizable alveolar lumens, which are absent in untreated male mammary. We also surveyed gene expression in the mammary tissue using a cDNA microarray and evaluated relevant protein factors. The results indicated that the treatment effects are likely due to interactions between steroid hormone receptor-mediated signals and growth factor-driven cellular pathways. The distinctive responses associated with the GE+MXC combination were likely linked to enhanced actions of insulin-like growth factor 1 and related downstream pathways.

Antidote and Emergency Treatment:

>> Observation. Persons exposed to high levels of organochlorine pesticides by any route should be observed for sensory disturbances, incoordination, speech slurring, mental aberrations, and involuntary motor activity that would warn of imminent convulsions. /Solid organochlorine insecticides/

Human Toxicity Excerpts:

>> /HUMAN EXPOSURE STUDIES/ Groups of volunteers were given methoxychlor at rates of 0, 0.5, 1, and 2 mg/kg/day for 8 weeks. Even the highest dosage was without detectable effect on health, clinical chemistry, or the morphology of blood, bone marrow, liver, small intestine, or testis ...

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ ... Whether treatment with methoxychlor at low observed adverse effect level (LOAEL) would alter the activities of steroidogenic enzymes such as Delta(5)3beta-hydroxysteroid dehydrogenase (3beta-HSD) and Delta(5)17beta-hydroxysteroid dehydrogenase (17beta-HSD), the expression levels of steroidogenic acute regulatory (StAR) protein and androgen binding protein (ABP) in the testis of adult male rats /was examined/. The experimental rats were exposed to a single dose of methoxychlor (50 mg/kg body weight) orally. The rats were killed at 0, 3, 6, 12, 24 and 72 hr following treatment ... and testes were collected, processed and used to measure the activities of 3beta-HSD, 17beta-HSD, levels of hydrogen peroxide produced and the expression levels of StAR protein, and ABP. Methoxychlor administration resulted in a sequential reduction in the expression of StAR protein and activities of 3beta-HSD, 17beta-HSD with concomitant increase in the levels of hydrogen peroxide in the testis. These changes were significant between 6-12 hr following treatment. The levels of ABP declined at 6-12 hr following exposure to methoxychlor. ...

Non-Human Toxicity Values:

>> LD50 Rat oral 6000 mg/kg /Technical material/

National Toxicology Program Studies:

Reports from the National Toxicology Program, an interagency program supported by three government agencies (NIH, FDA, and CDC) within the Department of Health and Human Services. This program plays a critical role in generating, interpreting, and sharing toxicological information about chemicals of public health concerns.

>> A bioassay for possible carcinogenicity of technical grade methoxychlor was conducted using Osborne-Mendel rats and B6C3F1 mice. Methoxychlor was administered in the feed, at either two concentrations, to groups of 50 male and 50 female animals of each species. For each species, 20 animals of each sex were placed on test as controls. The time weighted avg high and low dietary concentrations of methoxychlor were, respectively, 845 and 448 ppm for male rats, 1385 and 750 ppm for female rats, 3491 and 1746 ppm for male mice, and 1994 and 997 ppm for female mice. After a treatment period of 78 wk, the rat groups were observed for an additional 34 wk and the mouse groups for an additional 15 wk. A dose related mean group body weight depression was observed in both rats and mice, but no effect on survival was detected. Under the conditions of this study, methoxychlor was not found to be carcinogenic in Osborne-Mendel rats or B6C3F1 mice of either sex. Levels of Evidence of Carcinogenicity: Male Rats: Negative; Female Rats: Negative; Male Mice: Negative; Female Mice: Negative.

TSCA Test Submissions:

Under the Toxic Substances Control Act (TSCA), EPA has broad authority to issue regulations designed to require manufacturers (including importers) or processors to test chemical substances and mixtures for health and environmental effects. This section provides information on test reports submitted for this chemical under TSCA.

>> Methoxychlor (CAS # 72-43-5) was tested in a screening study to evaluate a short-term method for assessing epidermal carcinogenicity. Four (4) Rockland All Purpose strain mice received 9 daily 100-mg (5% in benzene) applications upon clipped dorsal skin from the base of the tail to the neck. Sacrificed on Day 12, their treated dermis was harvested and examined for a reduction in number of sebaceous glands, a potential indicator of epidermal carcinogenicity. The authors noted wide variability (p = 25.72) in number of sebaceous glands per centimeter skin between mice, while there was great consistency between different sites on the same animal. Study authors also reported strong dose-related reduction in sebaceous glands in association with known epidermal carcinogens (data not provided), while average methoxychlor values (38.0 sebaceous glands/cm) were within the range of those of the benzene solvent control (averages in 4 experiments, 34.3 - 50.6 sebaceous glands/cm).

Populations at Special Risk:

>> ... Individuals who have hepatic damage or who otherwise have their O-demethylation metabolic pathway compromised may be more susceptible to the DDT-like neurotoxic effects of methoxychlor, but this has not been studied in humans.

12. Ecological Information

Resident Soil (mg/kg)

>> 3.20e+02

Industrial Soil (mg/kg)

>> 4.10e+03

Tapwater (ug/L)

>> 3.70e+01

MCL (ug/L)

>> 4.00e+01

Risk-based SSL (mg/kg)

>> 2.00e+00

MCL-based SSL (mg/kg)

>> 2.20e+00

Chronic Oral Reference Dose (mg/kg-day)

>> 5.00e-03

Volatile

>> Volatile

Mutagen

>> Mutagen

Fraction of Contaminant Absorbed in Gastrointestinal Tract

>> 1

Fraction of Contaminant Absorbed Dermally from Soil

>> 0.1

ICSC Environmental Data:

>> The substance is very toxic to aquatic organisms. Bioaccumulation of this chemical may occur in fish. This substance does enter the environment under normal use. Great care, however, should be taken to avoid any additional release, for example through inappropriate disposal.

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: Methoxychlor residues were present in suspended sediment samples collected approx every 2 wk from the Niagara River at Niagara-on-the-Lake between Apr 1979 and Apr 1980, and in three other samples collected from the Fort Erie end of the river July 1979(1). During July 1981, methoxychlor was detected in 1 of 5 suspended solids samples taken from Niagara River water at a concn of 0.015 ppb(2). Methoxychlor was detected in sediment samples from Guanting resevoir in Beijing at concn levels of 35.4-352 pg/g, with a mean concn of 48.2 pg/g(3). During 1980-81, methoxychlor was detected in 11 of 11 total surficial bed material samples collected from the Delaware River estuary at trace levels (<0.1 parts per trillion)(4). During July 1976, methoxychlor was detected in trace levels (<6 parts per trillion detected) in sediment samples taken from the James River near Hopewell, VA(5). During 1971-72, methoxychlor was detected in sediment samples taken from a tributary of Lake Michigan at concns ranging from 0.19 to 175.0 ppb(6). Methoxychlor was detected in sediment samples collected from Fiji at concns ranging from <0.17 to 1.50 ng/g dry wt (detection limit = 0.03 ng/g)(7). Concn of methoxychlor in sediments from Taiwan's Da-han River and Erh-jen River were <0.3 to 2.85 and <0.3 to 7.39 ng/g dry weight, respectively(8). Methoxychlor was detected in 2 of 45 sediment samples from creeks in Illinois in 2003, at a concn range of 1.3-1.9 ug/kg(9). Methoxychlor reached a concn of 117 and 190 ng/g dry weight in sediment samples from two water bodies with high inputs of irrigation return flow, collected in April 2003 in California's Central Valley(10). Methoxychlor was detected in 2 of 54 sediment samples collected from Sparta, IL at mean concn of 1.59 ug/kg, ranging from 1.29-1.89 ug/kg(11).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> Pesticide analyses were completed on fat and muscle samples of 750 fish collected from 11 major lakes and rivers in Alberta. Methoxychlor was frequently found in goldeye from the North Saskatchewan River but not recorded in fish from any other lake or river. Its presence in goldeye, a highly migratory species, was probably a result of biting-fly control programs in the Saskatchewan part of the river.

Animal Concentrations:

Concentrations of this compound in animals.

>> Methoxychlor was detected in fat samples from raccoons at a concn of 0.16-36.82 ppb(1). During 1982 methoxychlor was detected in 10 of 10 herring gull egg samples taken from Saginaw Bay, at a mean concn of 0.06 ppm, and was detected in 10 of 20 egg samples taken near the Detroit River at a mean concn of 0.03 ppm(2). No detectable levels of methoxychlor were found in the resident Neotropical passerine birds collected in South America(3). Methoxychlor was detected in animal tissues from Greenland between 1999-2000, at median concentrations (ranges), in ng/g lipid weight: muscle not detected (not detected-0.97), kidney not detected (not detected-0.055) of hares; liver not detected (not detected-2.8), muscle 0.036 (0.94-0.56), kidney not detected (not detected-15), blubber not detected (not detected-1.3) of lambs; liver 0.088 (0.025-0.51), muscle 0.22 (0.14-0.76), kidney 0.73 (0.31-1.8), blubber 0.038 (0.003-0.57) of caribou; liver not detected (not detected-0.070), muscle 0.57 (0.19-1.6), blubber not detected (not detected-25) of musk ox(4). Methoxychlor was detected in seabird tissues from Greenland between 1998-2001, (max concn, in ng/g lipid weight) in: liver (0.37) and muscle (5.0) of kittiwake; liver (4.0) and muscle (37) of thick-billed murre(4).

Average Daily Intake:

The average amount of the compound taken into the body through eating, drinking, or breathing.

>> FOOD INTAKE: US Food and Drug Administration (FDA) Fiscal Year (FY) 1981/1982 - 0.004 ug/kg body wt/day; FY 1980 - 0.007 ug/kg body wt/day; FY 1979 - 0.003 ug/kg body wt/ day; FY 1978 - 0.007 ug/kg body wt/day(1). FY 1982-1984 - 6-11 months old 1.7 ng/kg bw/day; 2 years old 6.3 ng/kg bw/day; 14-16 year old females 1.5 ng/kg bw/day; 14-16 year old males 2.1 ng/kg bw/day; 25-30 year old females 1.2 ng/kg bw/day; 25-30 year old males 1.4 ng/kg bw/day; 60-65 year old females 1.1 ng/kg bw/day; 60-65 year old males 1.2 ng/kg bw/day(2). AIR INTAKE: Assumed 20 m3 air respired per day; Jacksonville, 6 ng/day reported for Jacksonville, FL from spring of 1986 to winter of 1988(3). ADI values for 8 age/sex

groups estimated from 1986 to 1991 are as follows: 6-11 mo old, 0.0004; 2 yr old, 0.0009; 14-16 yr old female, 0.0003; 14-16 yr old male, 0.0004; 25-30 yr old female, 0.0003; 25-30 yr old male, 0.0003; 60-65 yr old female, 0.0001; 60-65 yr old male, 0.0002 ug/kg body wt/day(4).

13. Disposal Considerations

Spillage Disposal

>> Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT let this chemical enter the environment.

Disposal Methods

>> Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U247 and D014, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.

>> DDD is a potential candidate for incineration by rotary kiln with a temperature range of 820-1600 °C and a residence time of seconds for liquid or gas and hours for solid. /SRP: Control acid mist from exhaust gases./

>> Incineration with scrubbing is the disposal method for methoxychlor. For the disposal of small quantities of methoxychlor and empty bags, burial in non-crop land away from water supplies is the only practical and recommended method. Recommendable methods: Incineration & landfill.

14. Transport Information

DOT

Methoxychlor

Reportable Quantity of 1 lb or 0

IATA

Methoxychlor

,

15. Regulatory Information

Federal Drinking Water Standards:

Federal drinking water standards (e.g. maximum containment level (MCL)) for this chemical. These standards are legally enforceable.

>> EPA 40 ug/l

Federal Drinking Water Guidelines:

Federal drinking water guidelines (e.g. maximum containment level (MCL)) for this chemical. In general, these guidelines are recommendations and not legally enforceable.

>> EPA 40 ug/l

State Drinking Water Standards:

State drinking water standards (e.g. maximum containment level (MCL)) for this chemical. These standards are legally enforceable.

>> (CA) CALIFORNIA 30 ug/L

Clean Water Act Requirements:

The Clean Water Act (CWA) of 1972 establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under CWA, the U.S. Environmental Protection Agency (EPA) developed the Toxic Pollutant List (40 CFR Part 401.15) and the Priority Pollutant List (40 CFR Part 423, Appendix A). These lists are to be used by EPA and States to develop the Effluent Guidelines regulations and ensure water quality criteria and standards.

>> Methoxychlor is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.

16. Other Information

Toxic Combustion Products:

Toxic products (e.g., gases and vapors) produced from the combustion of this chemical.

>> Irritating & toxic hydrogen chloride gas may be formed in fire.

Other Safety Information

Chemical Assessment

>> IMAP assessments - Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-: Human health tier I assessment

>> IMAP assessments - Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-methoxy-: Environment tier I assessment

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