ionz

SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : DDE b
Catalog Number : io-2097
CAS Number : 72-55-9
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 97.9% (46 of 47) of reports that indicate hazard statements. This chemical does not meet GHS hazard criteria for 2.1% (1 of 47) of reports.

Pictogram(s)

GHS Hazard Statements

>> H301 (59.6%): Toxic if swallowed [Danger Acute toxicity, oral]

>> H302 (38.3%): Harmful if swallowed [Warning Acute toxicity, oral]

>> H311 (17%): Toxic in contact with skin [Danger Acute toxicity, dermal]

>> H315 (17%): Causes skin irritation [Warning Skin corrosion/irritation]

>> H331 (17%): Toxic if inhaled [Danger Acute toxicity, inhalation]

>> H332 (17%): Harmful if inhaled [Warning Acute toxicity, inhalation]

>> H351 (61.7%): Suspected of causing cancer [Warning Carcinogenicity]

>> H372 (59.6%): Causes damage to organs through prolonged or repeated exposure [Danger Specific target organ toxicity, repeated exposure]

>> H400 (93.6%): Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

>> H410 (76.6%): Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P203, P260, P261, P262, P264, P270, P271, P273, P280, P301+P316, P301+P317, P302+P352, P304+P340, P316, P317, P318, P319, P321, P330, P332+P317, P361+P364, P362+P364, P391, P403+P233, P405, and P501

Health Hazards:

>> SYMPTOMS: Symptoms of exposure to this compound may include liver and kidney damage. Based on data for a similar compound, symptoms may also include vomiting, headache, fatigue, malaise, numbness and partial paralysis of the extremities, moderate ataxia, exaggeration of part of the reflexes, mild convulsions, loss of porprioception and vibratory sensation of the extremities, hyperactive knee-jerk reflexes, excitement, confusion and increased respiration. It may also cause nausea and diarrhea. Other symptoms may include tremors of the head and neck muscles, cardiac and respiratory failure and even death. It may also cause paresthesias of the tongue, lips and face, irritability and dizziness. It may cause tonic and clonic convulsions. Other symptoms include apprehension and hyperesthesia of the mouth and face. It may also cause "yellow vision".

>> ACUTE/CHRONIC HAZARDS: This compound is harmful if ingested, inhaled or absorbed through the skin. It may cause irritation. There is clear evidence that this compound is an animal carcinogen. When heated to decomposition it emits very toxic fumes of carbon monoxide and carbon dioxide. It may also emit toxic fumes of hydrogen chloride gas. (NTP, 1992)

>> Flash point data for this chemical are not available. It is probably combustible. (NTP, 1992)

3. Composition/Information On Ingredients

Chemical name : DDE b
CAS Number : 72-55-9
Molecular Formula : C14H8Cl4
Molecular Weight : 318.0000 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. IMMEDIATELY call a hospital or poison control center even if no symptoms (such as redness or irritation) develop. IMMEDIATELY transport the victim to a hospital for treatment after washing the affected areas.

>> INHALATION: IMMEDIATELY leave the contaminated area; take deep breaths of fresh air. IMMEDIATELY call a physician and be prepared to transport the victim to a hospital even if no symptoms (such as wheezing, coughing, shortness of breath, or burning in the mouth, throat, or chest) develop. 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.

>> OTHER: Since this chemical is a known or suspected carcinogen you should contact a physician for advice regarding the possible long term health effects and potential recommendation for medical monitoring. Recommendations from the physician will depend upon the specific compound, its chemical, physical and toxicity properties, the exposure level, length of exposure, and the route of exposure. (NTP, 1992)

5. Fire Fighting Measures

>> Fires involving this material can be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

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)

7. Handling And Storage

Storage Conditions:

>> PRECAUTIONS FOR "CARCINOGENS": Storage site should be as close as practicable to lab in which carcinogens are to be used, so that only small quantities required for ... expt need to be carried. Carcinogens should be kept in only one section of cupboard, an explosion-proof refrigerator or freezer (depending on chemicophysical properties ...) that bears appropriate label. An inventory ... should be kept, showing quantity of carcinogen & date it was acquired ... Facilities for dispensing ... should be contiguous to storage area. /Chemical Carcinogens/

8. Exposure Control/ Personal Protection

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.

>> 0.005 MG/KG (FAO/WHO, 1973) /FROM TABLE/

9. Physical And Chemical Properties

Molecular Weight:

>> 318.0

Exact Mass:

>> 317.935061

Physical Description:

>> P,p'-dde appears as white crystalline solid or white powder. (NTP, 1992)

Color/Form:

>> White, crystalline solid

Boiling Point:

>> 601.7 °F at 760 mmHg (NTP, 1992)

Melting Point:

>> 190 to 194 °F (NTP, 1992)

Solubility:

>> less than 0.1 mg/mL at 72 °F (NTP, 1992)

Vapor Pressure:

>> 0.000006 [mmHg]

LogP:

>> log Kow = 6.51

Decomposition:

>> When heated to decomposition it emits very toxic fumes of /chlorides/.

10. Stability And Reactivity

>> Insoluble in water.

11. Toxicological Information

Toxicity Summary:

>> DDE toxicity occurs via at least four mechanisms, possibly all functioning simultaneously. DDE reduces potassium transport across the membrane. DDE inhibits the inactivation of voltaged-gated sodium channels. The channels activate (open) normally but are inactivated (closed) slowly, thus interfering with the active transport of sodium out of the nerve axon during repolarization and resulting in a state of hyperexcitability. DDE inhibits neuronal adenosine triphosphatases (ATPases), particularly Na+K+-ATPase, and Ca2+-ATPase which play vital roles in neuronal repolarization. DDE also inhibits the ability of calmodulin, a calcium mediator in nerves, to transport calcium ions that are essential for the release of neurotransmitters. All these inhibited functions reduce the rate of depolarization and increase the sensitivity of neurons to small stimuli that would not elicit a response in a fully depolarized neuron. DDE is also believed to adversely affect the reproductive system by mimicking endogenous hormones and binding to the estrogen and adrogen receptors. (T10, L85)

EPA Provisional Peer-Reviewed Toxicity Values:

This section provides the EPA Provisional Peer-Reviewed Toxicity Values (PPRTVs) and links of related assessment documents.

Chemical Substance

>> p,p\'-DDE

Reference Dose (RfD), Subchronic

>> 3 x 10^-4 mg/kg-day

PPRTV Assessment

>> PDF Document

Weight-Of-Evidence (WOE)

>> See the IRIS entry for p,p\'-DDE

Last Revision

>> 2017

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

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

Chemical

>> p,p'-DDE

Cancer HBSL [µg/L]

>> 0.09-9

Benchmark Remarks

>> listed as p,p'-Dichlorodiphenyldichloroethylene

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).

>> Cancer Classification: Group B2 Probable Human Carcinogen

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).

>> Not directly listed by IARC, but carcinogenicity studies of this DDT metabolite are discussed in connection with DDT (L2151).

Health Effects:

>> Exposure to DDT causes loss of weight and anorexia. DDT poisoning affects CNS function in humans, but pathologic changes are observed in the liver and reproductive organs. Hypertrophy of hepatocytes and subcellular organelles such as mitochondria, proliferation of smooth endoplasmic reticulum, centrolobular necrosis after exposure to high concentrations, and an increase in the incidence of hepatic tumors have been noted. (T10)

Exposure Routes:

>> Oral (L85)

>> Acute signs of DDT poisoning include paresthesia after oral ingestion. Studies have shown that a mammal poisoned with DDT-type agents displays periodic persistent tremoring and/or convulsive seizures that are suggestive of repetitive discharges in neurons. These repetitive tremors and seizures can be initiated by tactile and auditory stimuli. (T10)

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).

>> Hepatic

Adverse Effects:

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

>> Other Poison - Organochlorine

>> IARC Carcinogen - Class 3: Chemicals are not classifiable by the International Agency for Research on Cancer.

Treatment:

Treatment when exposed to toxin

>> Treatment of DDT exposure should be primarily directed towards decontamination and supportive care, as there is no specific antidote. The use of gastric lavage and activated charcoal for large ingestions may be effective. (L140)

Interactions:

>> .... The effects of the perinatal, combined exposure to 1,4-dichlorobenzene (DCB) and p,p'-DDE on the female reproductive system have been investigated in mature rat female offspring of dams ingesting 25 ppm. DCB (approximately 2 mg/kg) and 125 ppm. p,p'-DDE (approximately 10 mg/kg) during the gestational and lactational period. Sexual maturation was fully developed in the rat female offspring perinatally exposed to DCB and/or p,p'-DDE through maternal exposure. The combined effect of DCB and p,p'-DDE was observed, and the ovarian weight was seen to decrease to approximately 80% of the control rat in matured female offspring following perinatal exposure to DCB and p,p'-DDE. This alteration might lead to reproductive dysfunction in matured female offspring...

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:

>> /SIGNS AND SYMPTOMS/ Organochlorine pesticides cause liver and kidney damage. Microsomal enzyme induction has been observed and increased alkaline phosphatase and aldolase activity have also been reported. Protein synthesis, lipid synthesis, detoxification, excretion, and liver functions are all affected. /Organochlorine pesticides/

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ 16 compounds (DDT analogues) were administered ip at 100 mg/kg for 5 consecutive days to male CF-1 mice. DDT and its analogues changed the level of multifunctional oxidase enzymes (MFO) epoxidation, sulfoxidation, cytochrome P450, o-demethylation, and ring hydroxylation, but did not elevate n-demethylation activity. DDT and DDE were equally effective in elevating multifunctional oxidase enzymes.

Non-Human Toxicity Values:

>> LD50 Rat oral 880 mg/kg

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.

>> Bioassays of technical grade DDT, TDE, and p,p'-DDE for possible carcinogenicity were conducted using Osborne-Mendel rats and B6C3F1 mice. Each cmpd was admin in the feed, at either of two concn, to groups of 50 male and 50 female animals of each species. Twenty animals of each species and sex were placed on test as controls for the bioassay of each cmpd. The time weighted avg high and low dietary concn of DDT were, respectively, 642 and 321 ppm for male rats, 420 and 210 ppm for female rats, 44 and 22 ppm for male mice, and 175 and 87 ppm for female mice. The time weighted avg high and low dietary concn of TDE were, respectively, 3294 and 1647 ppm for male rats, 1700 and 850 ppm for female rats, and 822 and 411 ppm for male and female mice. The time weighted avg high and low dietary concn of DDE were, respectively, 839 and 437 ppm for male rats, 462 and 242 ppm for female rats, and 261 and 148 ppm for male and female mice. After the 78 wk dosing period there was an additional observation period of up to 35 wk for rats and 15 wk for mice. ... Under the conditions of these bioassays there was no evidence for the carcinogenicity of DDT in Osborne-Mendel rats or B6C3F1 mice, of TDE in female Osborne-Mendel rats or B6C3F1 mice of either sex, or p,p'-DDE in Osborne-Mendel rats, although p,p'-DDE was hepatotoxic in Osborne-Mendel rats. The findings suggest a possible carcinogenic effect of TDE in male Osborne-Mendel rats, based on the induction of combined follicular cell carcinomas and follicular cell adenomas of the thyroid. Because of the variation of these tumors in control male rats in this study, the evidence does not permit a more conclusive interpretation of these lesions. p,p'-DDE was carcinogenic in B6C3F1 mice, causing hepatocellular carcinomas in both sexes. Levels of Evidence of Carcinogenicity: For p,p'-DDE: Male Rats: Negative, Female Rats: Negative; Male Mice: Positive; Female Mice: Positive. For DDT: Male Rats: Negative; Female Rats: Negative: Male Mice: Negative; Female Mice: Negative. For TDE: Male Rats: Equivocal; Female Rats: Negative; Male Mice: Negative; Female Mice: Negative.

Populations at Special Risk:

>> ... Individuals with /diseases/ of the nervous system, liver, or blood /should be protected from exposure to/ organochlorine pesticides. /Organochlorine pesticides/

12. Ecological Information

Resident Soil (mg/kg)

>> 2.00e+00

Industrial Soil (mg/kg)

>> 9.30e+00

Resident Air (ug/m3)

>> 2.90e-02

Industrial Air (ug/m3)

>> 1.30e-01

Tapwater (ug/L)

>> 4.60e-02

MCL (ug/L)

>> 7.50e+01

Risk-based SSL (mg/kg)

>> 1.10e-02

Oral Slope Factor (mg/kg-day)-1

>> 3.40e-01

Inhalation Unit Risk (ug/m3)-1

>> 9.7e-05

Chronic Oral Reference Dose (mg/kg-day)

>> 5.00e-04

Volatile

>> Volatile

Mutagen

>> Mutagen

Fraction of Contaminant Absorbed in Gastrointestinal Tract

>> 1

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SEDIMENT: DDE was detected in sediment from the upper Great Lakes in 1974 at concns of 2-7 ppb(1). DDE was detected in the 10 rivers and streams from the Ohio River valley in February 1977 at concns of 1.1-4.1 ppb(2). DDE was detected in 92% of the suspended sediment samples from the Niagara River at Niagara-on-the-Lake at an avg concn of avg 23 ppb from 1978-1981(3). DDE was detected in Lake Michigan sediment at concns of 0.06-4.82 ppb in 1970-1971(4). DDE was detected in 628 out of 1,047 sediment samples in the US at a median concn of 0.1 ppb(5). The concn of DDE in sediment from Lake Orsjoen, Norway ranged from 0.0002-14 mg/kg, with the greatest concns observed in the top 2 cm of sediment and the lowest concns observed in the deepest (10-12 cm) sediment(6). DDE was detected in sediment samples of 3 coastal lagoons in the Gulf of Mexico at concns of 0.15-1.78 ug/kg(7). DDE was detected in surface sediments collected in May-June 2004 from Katonga, Simiyu and Nyando wetlands in East Africa, at mean (range) concns of 0.065 (0.060-0.070), 0.870 (0.81-0.93), 0.423 (0.402-0.444) ug/kg, respectively(8). DDE was detected in sediment samples from the Guanting reservoir in Beijing at a mean concn (range) of 854 (726-6400) pg/g(9). The concn of DDE contaminants in sediments from waterbodies in Flanders, Belgium in 2001-2002 ranged from <0.05 to 5.4 ng/g dry weight(10). From 1970 to 2001, sediment samples from 38 lakes across the United States showed the levels of p,p'-DDE were decreasing in about 50% of the lakes, and increasing in none(11). The mean concn of DDE in sediment samples from 83 European mountain lakes was 3800 pg/g(12). DDE was detected in 88% of sediment samples collected during 1997-1998 from Lake Manzala, Egypt, at mean, minimum and max concns of 21.89, 1.5 and 34.5 ng/g dry weight, respectively(13).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> DDE was detected in finfish from Maryland waters at concns of 0.01-0.33 ug/g (1976), 0.02-0.19 ug/g (1977) 0.03-0.45 ug/g (1978), 0-0.73 ug/g (1979) and 0.002-1.08 ug/g(1980)(1). DDE was detected in perch from Patapsco River, MD at concns of 0.02-0.36 ug/g in the spring of 1976(1). DDE was detected in the skin of chinook salmon caught in 1991 from the Great Lakes at concns 52.6-598.8 ppm(2). From 1964-1969, DDE was detected in 323 out of 830 domestic shellfish (mean 0.02 ppm), 17 out of 167 imported shellfish (mean <0.005 ppm), 1,425 out of 2,150 domestic fish samples (mean 0.49 ppm), and in 186 out of 378 imported fish samples (mean 0.06 ppm)(3). The concn of DDE in 2 species of fish caught in the Mexicali Valley of Baja, CA were 1,723.4 and 3,687 ng/g(4). Average concn of DDE in rainbow smelt collected from 1985-1999 at several sites in Lake Huron, Lake Superior and Lake Michigan, ranged from 132-31.6 ng/g, 29.4-11.9 ng/g, and 116-34.3 ng/g fresh weight, respectively, with the highest concn in 1985, and the lowest in 1999(5). DDE concns in pooled fish samples taken from Spider, Hat and Cat Islands in Wisconsin in 1995 were 0.15, 0.11 and 0.11 ug/g wet weight, respectively(6).

Animal Concentrations:

Concentrations of this compound in animals.

>> DDE was detected in eggs of common loons in Ontario, Canada from 1968-1980 at avg concns of 3.98-41.4 ppm (wet wt)(1). DDE was detected in 293 out of 293 dead or moribund bald eagle carcass' in the US from 1978-1981 at median concns of 2.5 ppm (1978), 2.4 ppm (1979), 3.3 ppm(1980) and 3.0 ppm (1981)(2). DDE was detected in 147 out of 147 black-capped night-heron eggs in Colorado and Wyoming (1979) at concns of 0.33-44 ppm(3). DDE was detected in starlings from Finland from 1967-1983 at avg concns of 517-7,522 ppb(4). DDE was detected in heron nestlings and frogs in the Thermaikos Gulf, Greece at concns of 0-12.65 ug/kg and 0-0.64 ug/kg, respectively(5). Mean DDE concns of 0.02-11.46 ug/g were reported for various birds from 3 agricultural valleys in northwest Mexico(6). Geometric mean concns (ranges) of DDE in 136 bald eagle eggs collected from 2000-2004 in 8 different islands in the Aleutian archipelago, Alaska, were 1.239 (0.449-2.794), 0.848 (0.447-6.66), 0.679 (0.246-2.3), 0.673 (0.228-1.917), 0.576 (0.274-

1.011), 0.534 (0.355-0.99), 0.755 (0.288-2.56), and 0.602 (0.221-1.38) ug/g wet weight(7). The mean concns of DDE in snapping turtle eggs collected from different sites along Lake Ontario, the St. Lawrence River, and connecting channels from 2001-2004, ranged from 3.75 to 152 ng/g wet weight(8). Double-crested cormorant chicks collected from two colonies in Green Bay, WI, accumulated on average 7-12 ug/day of DDE, compared to 1 ug/day at 2 reference colonies in SD and MN(9). DDE was detected in egg samples of little owls from Belgium between 1998 and 2000 at a median concn of 830 ng/g lipid(10). During 1997-1998, DDE was detected in 100% of 3 bird species muscle samples from Lake Manzala, Egypt, at mean, min and max concns of, respectively, 210.9, 65.4, 291.7 ng/g (moorhen), 14.57, 6.51, 24.52 ng/g (kingfisher), 442.5, 163.8, 721.3 ng/g wet weight (cattle egret)(11). Fulmar samples collected in 2000-2001 from the Faroe Islands in the North Atlantic, detected mean (range) concentrations (ng/g lipid weight) of DDE in Fulmar egg, adult muscle, juvenile muscle, and juvenile subcutaneous fat of 2800 (1,000-7,000), 7100 (1,700-20,000), 530 (260-1,800), and 610 (230-2,000), respectively(12).

Average Daily Intake:

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

>> FOOD INTAKE: 0.032 ug/kg body wt/day(1).

13. Disposal Considerations

Disposal Methods

>> SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal and plant life; and conformance with environmental and public health regulations.

>> PRECAUTIONS FOR "CARCINOGENS": ... Incineration may be only feasible method for disposal of contaminated laboratory waste from biological expt. However, not all incinerators are suitable for this purpose. The most efficient type ... is probably the gas-fired type, in which a first-stage combustion with a less than stoichiometric air:fuel ratio is followed by a second stage with excess air. Some ... are designed to accept ... aqueous & organic-solvent solutions, otherwise it is necessary ... to absorb soln onto suitable combustible material, such as sawdust. Alternatively, chem destruction may be used, esp when small quantities ... are to be destroyed in laboratory. /Chemical Carcinogens/

>> PRECAUTIONS FOR "CARCINOGENS": HEPA (high-efficiency particulate arrestor) filters ... can be disposed of by incineration. For spent charcoal filters, the adsorbed material can be stripped off at high temp & carcinogenic wastes generated by this treatment conducted to & burned in an incinerator. ... LIQUID WASTE: ... Disposal should be carried out by incineration at temp that ... ensure complete combustion. SOLID WASTE: Carcasses of lab animals, cage litter & misc solid wastes ... should be disposed of by incineration at temp high enough to ensure destruction of chem carcinogens or their metabolites. /Chemical Carcinogens/

>> PRECAUTIONS FOR "CARCINOGENS": ... Small quantities of ... some carcinogens can be destroyed using chem reactions ... but no general rules can be given. ... As a general technique ... treatment with sodium dichromate in strong sulfuric acid can be used. The time necessary for destruction ... is seldom known ... but 1-2 days is generally considered sufficient when freshly prepd reagent is used. ... Carcinogens that are easily oxidizable can be destroyed with milder oxidative agents, such as saturated soln of potassium permanganate in acetone, which appears to be a suitable agent for destruction of hydrazines or of compounds containing isolated carbon-carbon double bonds. Concn or 50% aqueous sodium hypochlorite can also be used as an oxidizing agent. /Chemical Carcinogens/

>> PRECAUTIONS FOR "CARCINOGENS": Carcinogens that are alkylating, arylating or acylating agents per se can be destroyed by reaction with appropriate nucleophiles, such as water, hydroxyl ions, ammonia, thiols & thiosulfate. The reactivity of various alkylating agents varies greatly ... & is also influenced by sol of agent in the reaction medium. To facilitate the complete reaction, it is suggested that the agents be dissolved in ethanol or similar solvents. ... No method should be applied ... until it has been thoroughly tested for its effectiveness & safety on material to be inactivated. For example, in case of destruction of alkylating agents, it is possible to detect residual compounds by reaction with 4(4-nitrobenzyl)-pyridine. /Chemical Carcinogens/

14. Transport Information

DOT

DDE b

Reportable Quantity of 1 lb or 0

IATA

DDE b

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15. Regulatory Information

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.

>> Toxic pollutant designated pursuant to section 307(a)(1) of the Federal Water Pollution Control Act and is subject to effluent limitations. /DDT and metabolites/

Regulatory Information

New Zealand EPA Inventory of Chemical Status

>> Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-: Does not have an individual approval but may be used under an appropriate group standard

16. Other Information

Other Safety Information

Chemical Assessment

>> IMAP assessments - Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-: Human health tier I assessment

>> IMAP assessments - Benzene, 1,1'-(dichloroethenylidene)bis[4-chloro-: Environment tier I assessment

"The information provided is believed to be accurate but is not comprehensive and should be used as a reference. It reflects our current knowledge and is intended for safety guidance related to the product. This document does not constitute a warranty of the product's properties. Ionz is not responsible for any damages resulting from handling or contact with the product incorrectly."