SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : DDT
Catalog Number : io-2098
CAS Number : 50-29-3
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)

Pictogram(s)

GHS Hazard Statements

>> H301+H311 (38%): Toxic if swallowed or in contact with skin [Danger Acute toxicity, oral; acute toxicity, dermal]

>> H301 (99%): Toxic if swallowed [Danger Acute toxicity, oral]

>> H311 (44%): Toxic in contact with skin [Danger Acute toxicity, dermal]

>> H351 (99%): Suspected of causing cancer [Warning Carcinogenicity]

>> H372 (99%): Causes damage to organs through prolonged or repeated exposure [Danger Specific target organ toxicity, repeated exposure]

>> H400 (100%): Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

>> H410 (99%): Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P203, P260, P262, P264, P270, P273, P280, P301+P316, P302+P352, P316, P318, P319, P321, P330, P361+P364, P391, P405, and P501

Health Hazards:

>> Very large doses are followed promptly by vomiting, due to local gastric irritation; delayed emesis or diarrhea may occur. With smaller doses, symptoms usually appear 2-3 hours after ingestion. These include tingling of lips, tongue, and face; malaise, headache, sore throat, fatigue, coarse tremors of neck, head, and eyelids; apprehension, ataxia, and confusion. Convulsions may alternate with periods of coma and partial paralysis. Vital signs are essentially normal, but in severe poisoning the pulse may be irregular and abnormally slow; ventricular fibrillation and sudden death may occur at any time during acute phase. Pulmonary edema usually indicates solvent intoxication. (USCG, 1999)

>> Special Hazards of Combustion Products: Toxic and irritating gases may be generated

>> Behavior in Fire: Melts and burns (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 : DDT
CAS Number : 50-29-3
Molecular Formula : C14H9Cl5
Molecular Weight : 354.5000 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. 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: 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. Generally, the induction of vomiting is NOT recommended outside of a physician's care due to the risk of aspirating the chemical into the victim's lungs. However, if the victim is conscious and not convulsing and if medical help is not readily available, consider the risk of inducing vomiting because of the high toxicity of the chemical ingested. Ipecac syrup or salt water may be used in such an emergency. IMMEDIATELY transport the victim to a hospital. 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)

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

>> Rinse mouth. Give a slurry of activated charcoal in water to drink. Rest. Refer for medical attention .

5. Fire Fighting Measures

>> Fire Extinguishing Agents: Water, foam, dry chemical, or carbon dioxide (USCG, 1999)

>> Use water spray, powder, 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 151 [Substances - Toxic (Non-Combustible)]:

>> 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. Do NOT let this chemical enter the environment. Sweep spilled substance into covered sealable, non-metallic containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

7. Handling And Storage

Safe Storage:

>> Provision to contain effluent from fire extinguishing. Separated from iron, aluminium, aluminium salts and food and feedstuffs. See Chemical Dangers.

Storage Conditions:

>> ... Should not be kept in iron containers and should not be mixed with iron and aluminum salts nor with alkaline substances. High storage temperatures should also be avoided.

8. Exposure Control/ Personal Protection

>> Ca TWA 0.5 mg/m3 See Appendix A

>> 1.0 [mg/m3]

>> 1.0 [mg/m3]

>> 1 mg/m

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 , especially if powdered.

Effects of Short Term Exposure:

>> May cause mechanical irritation. The substance may cause effects on the central nervous system. This may result in convulsions and respiratory depression. Exposure at high levels could cause death. Medical observation is indicated.

Effects of Long Term Exposure:

>> The substance may have effects on the central nervous system and liver. This substance is possibly carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

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.

>> Conditional acceptable daily intake: 0.005 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.

Eye Prevention

>> Wear safety goggles or eye protection in combination with breathing protection if powder.

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:

>> 354.5

Exact Mass:

>> 353.911739

Physical Description:

>> Odorless colorless solid. Sinks in water. (USCG, 1999)

>> COLOURLESS CRYSTALS OR WHITE POWDER. TECHNICAL PRODUCT IS WAXY SOLID.

Color/Form:

>> Biaxial elongated tablets, needles from 95% alcohol

Odor:

>> Odorless or with slight aromatic odor

Boiling Point:

>> 500 °F at 760 mmHg (NTP, 1992)

>> 260 °C

Melting Point:

>> 227 to 228 °F (NTP, 1992)

>> 109 °C

Flash Point:

>> 324 to 340 °F (NTP, 1992)

Solubility:

>> less than 1 mg/mL at 70 °F (NTP, 1992)

>> Solubility in water: poor

Density:

>> 1.56 at 59 °F (USCG, 1999) - Denser than water; will sink

>> 1.6 g/cm³

Vapor Pressure:

>> 1.5e-07 mmHg at 68 °F (NTP, 1992)

LogP:

>> log Kow = 6.91

>> 6.36

Stability/Shelf Life:

>> Resistant to destruction by light and oxidation

Decomposition:

>> Decomp at 110 °C; dehydrochlorinates in alkali or org bases when in org solvents

Corrosivity:

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

>> Should not be kept in iron containers

Odor Threshold:

>> Detection threshold in water: 0.35 ppm

10. Stability And Reactivity

>> Insoluble in water.

11. Toxicological Information

Toxicity Summary:

>> DDT toxicity occurs via at least four mechanisms, possibly all functioning simultaneously. DDT reduces potassium transport across the membrane. DDT 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. DDT inhibits neuronal adenosine triphosphatases (ATPases), particularly Na+K+-ATPase, and Ca2+-ATPase which play vital roles in neuronal repolarization. DDT 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. DDT is also believed to adversely affect the reproductive system by mimicking endogenous hormones and binding to the estrogen and adrogen receptors. (T10, L85)

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'-DDT

Noncancer HBSL (Health-Based Screening Level)[µg/L]

>> 3

Cancer HBSL [µg/L]

>> 0.09-9

Benchmark Remarks

>> listed as p,p'-Dichlorodiphenyltrichloroethane (DDT)

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).

>> Evaluation: There is inadequate evidence in humans for the carcinogenicity of DDT. There is sufficient evidence in experimental animals for the carcinogenicity of DDT. Overall evaluation: DDT is possibly carcinogenic to humans (2B).

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

>> DDT (4,4'-dichlorodiphenyltrichloroethane)

IARC Carcinogenic Classes

>> Group 2A: Probably carcinogenic to humans

IARC Monographs

>> 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)

>> Volume 53: (1991) Occupational Exposures in Insecticide Application, and Some Pesticides

>> Volume 113: (2018) DDT, Lindane, and 2,4-D

>> DDT is possibly carcinogenic to humans (Group 2B). (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:

>> The substance can be absorbed into the body by ingestion.

>> inhalation, skin absorption, ingestion, skin and/or eye contact

Inhalation Exposure

>> Cough.

Eye Exposure

>> Redness.

Ingestion Exposure

>> Tremor. Diarrhoea. Dizziness. Headache. Vomiting. Numbness. Tingling sensation. Hyperexcitability. Convulsions.

>> irritation eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]

Target Organs:

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

>> Hepatic

>> Eyes, skin, central nervous system, kidneys, liver, peripheral nervous system

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

>> [in animals: liver, lung & lymphatic tumors]

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

>> IARC Carcinogen - Class 2: International Agency for Research on Cancer classifies chemicals as probable (2a), or possible (2b) human carcinogens.

>> NTP Carcinogen - Reasonably anticipated to be a human carcinogen.

>> ACGIH Carcinogen - Confirmed Animal.

Toxicity Data:

>> LD50: 87 mg/kg (Oral, Rat) (L141) LD50: 1931 mg/kg (Dermal, Rat) (L141) LD50: 1500 mg/kg (Subcutaneous, Rat) (L141)

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

>> Acute Oral: 0.0005 mg/kg/day (L134) Intermediate Oral: 0.0005 mg/kg/day (L134)

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:

>> ... In rat, combined administration of DDT and aldrin leads to increased excretion of dieldrin. In beagles, repeated administration of DDT plus aldrin resulted in markedly augmented retention of DDT in blood and body fat. Pretreatment of rats & sheep with DDT has been shown to potentiate hepatotoxicity of carbon tetrachloride.

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/ DDT... has not ... demonstrated ... selective toxic effect on eyes. Pure DDT dissolved in purified kerosene was tested ... at 0.01% on human eye and caused no discomfort or irritation... Rare instances have been reported of ocular irritation following contamination of the eye by powders containing DDT, and in one instance chronic superficial punctate keratitis was associated with fatal poisoning from long exposure to the dust, but it is probable that constituents other than DDT were responsible, or that there was hypersensitivity.

Non-Human Toxicity Excerpts:

>> /LABORATORY ANIMALS: Acute Exposure/ Twenty-four hours after a single oral dose of DDT /to rats/ (200 mg per kg body weight), gamma-glutamyl transpeptidase (Gamma-GTP) activity increased two-fold in liver plasma membranes, followed by a return to normal values 48 hr post-exposure. In addition, serum Gamma-GTP activity doubled following acute exposure to DDT, and remained elevated for 48 hr.

Non-Human Toxicity Values:

>> LD50 Female rat percutaneous 2510 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)

>> 1.90e+00

Industrial Soil (mg/kg)

>> 8.50e+00

Resident Air (ug/m3)

>> 2.90e-02

Industrial Air (ug/m3)

>> 1.30e-01

Tapwater (ug/L)

>> 2.30e-01

MCL (ug/L)

>> 7.50e+01

Risk-based SSL (mg/kg)

>> 7.70e-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

Fraction of Contaminant Absorbed Dermally from Soil

>> 0.03

ICSC Environmental Data:

>> The substance is very toxic to aquatic organisms. This substance may be hazardous to the environment. Special attention should be given to birds. Bioaccumulation of this chemical may occur along the food chain, for example in milk and aquatic organisms. 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.

>> SOIL: DDT was detected in surface soil samples in agricultural areas in Lebanon at levels ranging from 0 to 1190 ng/g, all within the permissible limits for soil(1). During a monitoring study conducted in the Taihu Lake region, China (1999-2000), DDT was detected in 5 out of 10 samples in surface soil (0-15 cm) at concns ranging from 0.3 - 5.3 ug/kg, 6 out of 10 samples in subsoil layer (16-30 cm) ranging from 0.5 - 4.0 ug/kg, 4 out of 10 samples in deep soil layer (31-50 cm) ranging from 0 - 2.7 ug/kg(2). In the shallow subsurface soils (5-30 cm) and deep soil layers (150-180 cm) of the Beijing, China outskirts the total DDT concn (including p,p'-DDT, p,p'-DDE, p,p'-DDD, o,p'-DDT) ranged from 1.36 to 56.61 ng/g dry wt and 0.77 to 2178 ng/g dry wt, respectively(3).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> DDT was detected in zebra mussels of Pallanza Bay, Lake Maggiore, Italy from samples collected in 1997. The concns ranged from 18.5 - 134.1 ng/g dry weight(1). Four fish species (Scatophagus argus, Protosus canius, Channa striata, and Zonichthys nigrofasciata) from Lake Songkhla and the Gulf of Thailand were tested for DDT from March to April 1997. The mean concn of DDTs at different sites ranged from 0.086 - 7.7 ng/g fresh wt, which is below the recommended concn of 5,000 ng/g fresh wt for aquatic animals used for human consumption(2). DDT was detected in the muscle of fish (Channa punctatus) from the Bromti, India at mean concns ranging from 0.10 - 0.21 ng/g wet wt(3). Fish and other aquatic organisms collected in the summers of 1994 and 1995 from four locations in Greenland were analyzed for persistent organic pollutants. The geometric mean concn of DDTs (p,p'-DDT, p,p'-DDD, p,p'-DDE) were reported as follows (ug/kg dry wt): 4.0, Landlocked Arctic char muscle (n = 100); 0.39, blue mussel soft tissue (n = 44); 11, Shorthorn sculpin liver (n = 100); 36, polar cod liver (n = 16); 389, glaucous gill liver (n = 100); 607, Ringed seal blubber (n = 100)(4).

Animal Concentrations:

Concentrations of this compound in animals.

>> DDT was detected in adult harp seal, (Phagophilus groenlandicus) tissue in March 1971 at the following concns; blubber: 0.731-8.53 ppm; kidney, liver, spleen: 0.036-0.759 ppm(1). DDT was detected in eastern Canadian seals (mothers) at mean concns of 5.7 (1974), 7.5 (1976) and 2.5 ppm (1978), and in their pups at mean concns of 2.7 (1974), 2.3 (1976), 0.6 ppm (1978)(2). DDT was detected in tissues of bald eagles in the US at concns of 0.40 ppm (brain) and 25 ppm (carcass)(3). DDT was detected in 15 out of 105 ospreys, at concns of 0.10-0.75 ppm in 1966(4) and in 9 out of 26 ospreys at concns of 0.03-5.7 ppm from 1964-1973(5). DDT was detected in the eggs of 3 species of birds from Mexico at concns of 0-2.43 ug/g(6).

Average Daily Intake:

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

>> Based on dietary patterns in the US, the AVDI of DDT were given as: 0.031 mg (1964-1965); 0.041 mg (1965-1966); 0.026 mg (1966-1967); 0.019 mg (1967-1968); 0.016 mg (1968-1969)(1). A 1989 FDA study based on US dietary patterns estimated the AVDI of DDT in ug/kg body weight as follows: 0.0287 (6-11 months old); 0.0155 (14-16 year old males); 0.0079 (60-65 year old females)(2). A 1990 FDA study based on US dietary patterns estimated the AVDI of DDT in ug/kg body weight as follows: 0.077 (6-11 months old); 0.026 (14-16 year old males); 0.0103 (60-65 year old females)(3).

13. Disposal Considerations

Spillage Disposal

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

Disposal Methods

>> Generators of waste (equal to or greater than 100 kg/mo) containing this contaminant, EPA hazardous waste number U061, must conform with USEPA regulations in storage, transportation, treatment and disposal of waste.

>> DDT is a potential candidate for incineration by rotary kiln with a temperature range of 820 to 1600 °C and residence time of seconds for liquids and gases, and hours for solids.

>> Group I Containers: Combustible containers from organic or metallo-organic pesticides (except organic mercury, lead, cadmium, or arsenic compounds) should be disposed of in pesticide incinerators or in specified landfill sites. /Organic or metallo-organic pesticides/

>> Group II Containers: Non-combustible containers from organic or metallo-organic pesticides (except organic mercury, lead, cadmium, or arsenic compounds) must first be triple-rinsed. Containers that are in good condition may be returned to the manufacturer or formulator of the pesticide product, or to a drum reconditioner for reuse with the same type of pesticide product, if such reuse is legal under Department of Transportation regulations (eg 49 CFR 173.28). Containers that are not to be reused should be punctured ... and transported to a scrap metal facility for recycling, disposal, or burial in a designated landfill. /Organic or metallo-organic pesticides/

>> For more Disposal Methods (Complete) data for DDT (20 total), please visit the HSDB record page.

14. Transport Information

DOT

DDT
6.1
UN Pack Group: III
Reportable Quantity of 1 lb or 0

IATA

DDT
6.1,
UN Pack Group: III

15. Regulatory Information

State Drinking Water Standards:

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

>> (IL) ILLINOIS 50 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.

>> 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

REACH List of substances subject to POPs Regulation (POPs)

>> Substance: Clofenotane

>> EC: 200-024-3

>> Date of inclusion in the POPs Regulation: 29-Apr-2004

>> POPs Regulation Annex: Annex I, part A; Annex IV

16. Other Information

Toxic Combustion Products:

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

>> Poisonous gases are produced in fire.

Other Safety Information

Chemical Assessment

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

>> IMAP assessments - Benzene, 1,1'-(2,2,2-trichloroethylidene)bis[4-chloro-: Human health 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."