SAFETY DATA SHEET

Updated on 26/09/2024

1. Material Identification

Product Name : Ethion
Catalog Number : io-2346
CAS Number : 563-12-2
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

>> H300 (44.7%): Fatal if swallowed [Danger Acute toxicity, oral]

>> H301 (55.3%): Toxic if swallowed [Danger Acute toxicity, oral]

>> H310 (44.7%): Fatal in contact with skin [Danger Acute toxicity, dermal]

>> H312 (55.3%): Harmful in contact with skin [Warning Acute toxicity, dermal]

>> H330 (36.8%): Fatal if inhaled [Danger Acute toxicity, inhalation]

>> H370 (36.8%): Causes damage to organs [Danger Specific target organ toxicity, single exposure]

>> H372 (36.8%): 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 (100%): Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Precautionary Statement Codes

>> P260, P262, P264, P270, P271, P273, P280, P284, P301+P316, P302+P352, P304+P340, P308+P316, P316, P317, P319, P320, P321, P330, P361+P364, P362+P364, P391, P403+P233, P405, and P501

Health Hazards:

>> This material is very toxic; the probable oral lethal dose for humans is 50-500 mg/kg, which is between one teaspoonful and one ounce for a 150-lb person. (EPA, 1998)

>> Shock can shatter the container, releasing the contents. Fire may produce irritating or poisonous gases. Decomposes above 302F. When heated to decomposition it emits highly toxic fumes of oxides of sulfur and phosphorus. Hydrolyzed by acids and alkalies. Slowly oxidized in air. (EPA, 1998)

>> Combustible. Liquid formulations containing organic solvents may be flammable. Gives off irritating or toxic fumes (or gases) in a fire. Risk of fire and explosion if formulations contain flammable/explosive solvents.

3. Composition/Information On Ingredients

Chemical name : Ethion
CAS Number : 563-12-2
Molecular Formula : C9H22O4P2S4
Molecular Weight : 384.5000 g/mol

4. First Aid Measures

First Aid:

>> Warning: Effects may be delayed up to 12 hours. Caution is advised.

>> Note: Ethion is a cholinesterase inhibitor.

>> Signs and Symptoms of Ethion Exposure: Acute exposure to ethion may produce the following signs and symptoms: sweating, pinpoint pupils, blurred vision, headache, dizziness, profound weakness, muscle spasms, seizures, and coma. Mental confusion and psychosis may occur. Excessive salivation, nausea, vomiting, anorexia, diarrhea, and abdominal pain may also occur. The heart rate may decrease following oral exposure or increase following dermal exposure. Chest pain may be noted. Hypotension (low blood pressure) may be observed, although hypertension (high blood pressure) is not uncommon. Respiratory symptoms include dyspnea (shortness of breath), pulmonary edema, respiratory depression, and respiratory paralysis.

>> Emergency Life-Support Procedures: Acute exposure to ethion exposure may require decontamination and life support for the victims. Emergency personnel should wear protective clothing appropriate to the type and degree of contamination. Air-purifying or supplied-air respiratory equipment should also be worn, as necessary. Rescue vehicles should carry supplies such as plastic sheeting and disposable plastic bags to assist in preventing spread of contamination.

>> Inhalation Exposure:

>> 1. Move victims to fresh air. Emergency personnel should avoid self-exposure to ethion.

>> 2. Evaluate vital signs including pulse and respiratory rate, and note any trauma. If no pulse is detected, provide CPR. If not breathing, provide artificial respiration. If breathing is labored, administer 100% humidified oxygen or other respiratory support.

>> 3. Obtain authorization and/or further instructions from the local hospital for administration of an antidote or performance of other invasive procedures.

>> 4. Transport to a health care facility.

>> Dermal/Eye Exposure:

>> 1. Remove victims from exposure. Emergency personnel should avoid self-exposure to ethion.

>> 3. Remove contaminated clothing as soon as possible.

>> 4. If eye exposure has occurred, eyes must be flushed with lukewarm water for at least 15 minutes.

>> 5. Wash exposed skin areas three times with soap and water.

>> 6. Obtain authorization and/or further instructions from the local hospital for administration of an antidote or performance of other invasive procedures.

>> 7. Transport to a health care facility.

>> Ingestion Exposure:

>> 1. Evaluate vital signs including pulse and respiratory rate, and note any trauma. If no pulse is detected, provide CPR. If not breathing, provide artificial respiration. If breathing is labored, administer 100% humidified oxygen or other respiratory support.

>> 2. Obtain authorization and/or further instructions from the local hospital for administration of an antidote or performance of other invasive procedures.

>> 3. Vomiting may be induced with syrup of Ipecac. If elapsed time since ingestion of ethion is unknown or suspected to be greater than 30 minutes, do not induce vomiting and proceed to Step

>> 4.Ipecac should not be administered to children under 6 months of age.Warning: Ingestion of ethion may result in sudden onset of seizures or loss of consciousness. Syrup of Ipecac should be administered only if victims are alert, have an active gag-reflex, and show no signs of impending seizure or coma. If ANY uncertainty exists, proceed to Step

>> 4.The following dosages of Ipecac are recommended: children up to 1 year old, 10 mL (1/3 oz); children 1 to 12 years old, 15 mL (1/2 oz); adults, 30 mL (1 oz). Ambulate (walk) the victims and give large quantities of water. If vomiting has not occurred after 15 minutes, Ipecac may be readministered. Continue to ambulate and give water to the victims. If vomiting has not occurred within 15 minutes after second administration of Ipecac, administer activated charcoal.

>> 4. Activated charcoal may be administered if victims are conscious and alert. Use 15 to 30 g (1/2 to 1 oz) for children, 50 to 100 g (1-3/4 to 3-1/2 oz) for adults, with 125 to 250 mL (1/2 to 1 cup) of water.

>> 5. Promote excretion by administering a saline cathartic or sorbitol to conscious and alert victims. Children require 15 to 30 g (1/2 to 1 oz) of cathartic; 50 to 100 g (1-3/4 to 3- 1/2 oz) is recommended for adults.

>> 6. Transport to a health care facility. (EPA, 1998)

First Aid Measures

Inhalation First Aid

>> Fresh air, rest. Artificial respiration may be needed. Refer for medical attention.

Skin First Aid

>> Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

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!). Refer for medical attention .

5. Fire Fighting Measures

>> Move containers from fire area if it can be done without risk. Dike fire control water for later disposal, do not scatter the material. Fight fire from maximum distance. Wear positive pressure breathing apparatus and protective clothing.

>> For small fires, use dry chemical, carbon dioxide, water spray, or foam. For large fires, use water spray, fog, or foam. (EPA, 1998)

>> Use water spray, alcohol-resistant foam, powder, 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 152 [Substances - Toxic (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: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

7. Handling And Storage

Safe Storage:

>> Separated from food and feedstuffs. Well closed. Store in an area without drain or sewer access. Provision to contain effluent from fire extinguishing.

Storage Conditions:

>> DO NOT STORE ETHION 4 EC AND 8 EC AT TEMP BELOW 0 °F AND 20 °F, RESPECTIVELY.

8. Exposure Control/ Personal Protection

REL-TWA (Time Weighted Average)

>> 0.4 mg/m³

>> TWA 0.4 mg/m3 [skin]

>> none See Appendix G

>> 0.05 [mg/m3], inhalable fraction and vapor

>> 0.05 mg/m

TLV-TWA (Time Weighted Average)

>> 0.05 mg/m³ (inhalable fraction and vapor) [2000]

Inhalation Risk:

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

Effects of Short Term Exposure:

>> The substance may cause effects on the nervous system. This may result in convulsions and respiratory failure. Cholinesterase inhibition. Exposure could cause unconsciousness and death. The effects may be delayed. Medical observation is indicated.

Effects of Long Term Exposure:

>> Cholinesterase inhibition. Cumulative effects are possible. See Acute Hazards/Symptoms.

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.

>> FAO/WHO ADI: 0.006 mg/kg

Fire Prevention

>> NO open flames.

Exposure Prevention

>> PREVENT GENERATION OF MISTS! STRICT HYGIENE! AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN! IN ALL CASES CONSULT A DOCTOR!

Inhalation Prevention

>> Use ventilation, local exhaust or breathing protection.

Skin Prevention

>> Protective gloves. Protective clothing.

Eye Prevention

>> Wear face shield 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

>> Biological Exposure Indices (BEI) [ACGIH] - Acetylcholinesterase activity in red blood cells = 70% of individual's baseline; Butylcholinesterase activity in serum or plasma = 60% of individual's baseline; Sample at end of shift; [TLVs and BEIs]

9. Physical And Chemical Properties

Molecular Weight:

>> 384.5

Exact Mass:

>> 383.98761787

Physical Description:

>> Ethion is a colorless or amber colored liquid with a disagreeable odor. It is a wettable emulsifiable liquid. It is toxic by inhalation, skin absorption, and/or ingestion. It burns, but is not easily ignited. Fire may produce toxic and irritating fumes. It is used as a pesticide. May be found in the form of a dry mixture where the liquid is absorbed onto a dry carrier.

>> COLOURLESS LIQUID.

Color/Form:

>> Water-white to amber-colored liquid

Odor:

>> Odorless [Note: The technical product has a very disagreeable odor].

Boiling Point:

>> Decomposes above 302.0 °F (USCG, 1999)

Melting Point:

>> 9 to 10 °F (EPA, 1998)

>> -12 - -13 °C

Flash Point:

>> 349 °F (NIOSH, 2024)

Solubility:

>> 0.0001 % (NIOSH, 2024)

>> Solubility in water, g/100ml at 20 °C: 0.0001

Density:

>> 1.215 to 1.23 at 68 °F (EPA, 1998)

>> Relative density (water = 1): 1.2

Vapor Pressure:

>> 1.5e-06 mmHg at 77 °F (EPA, 1998)

>> Vapor pressure, Pa at 25 °C: 0.0002

LogP:

>> log Kow = 5.073

>> 5.073

Stability/Shelf Life:

>> SLOWLY OXIDIZED IN AIR

Autoignition Temperature:

>> Not flammable (USCG, 1999)

Decomposition:

>> Ethion tends to decompose rapidly with violence above 150 °C

Corrosivity:

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

>> Non-corrosive

Refractive Index:

>> INDEX OF REFRACTION: 1.530-1.542 @ 20 °C/D /TECHNICAL GRADE/

Collision Cross Section:

Collision cross section (CCS) represents the effective area for the interaction between an individual ion and the neutral gas through which it is traveling (e.g., in ion mobility spectrometry (IMS) experiments). It quantifies the probability of a collision taking place between two or more particles.

>> 176.17 Å² [M+H]+

>> 180.43 Å² [M+Na]+

10. Stability And Reactivity

>> No rapid reaction with air. No rapid reaction with water.

11. Toxicological Information

Toxicity Summary:

>> Ethion is a cholinesterase or acetylcholinesterase (AChE) inhibitor. A cholinesterase inhibitor (or 'anticholinesterase') suppresses the action of acetylcholinesterase. Because of its essential function, chemicals that interfere with the action of acetylcholinesterase are potent neurotoxins, causing excessive salivation and eye-watering in low doses, followed by muscle spasms and ultimately death. Nerve gases and many substances used in insecticides have been shown to act by binding a serine in the active site of acetylcholine esterase, inhibiting the enzyme completely. Acetylcholine esterase breaks down the neurotransmitter acetylcholine, which is released at nerve and muscle junctions, in order to allow the muscle or organ to relax. The result of acetylcholine esterase inhibition is that acetylcholine builds up and continues to act so that any nerve impulses are continually transmitted and muscle contractions do not stop. Among the most common acetylcholinesterase inhibitors are phosphorus-based compounds, which are designed to bind to the active site of the enzyme. The structural requirements are a phosphorus atom bearing two lipophilic groups, a leaving group (such as a halide or thiocyanate), and a terminal oxygen.

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

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

Chemical

>> Ethion

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

>> 3

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 E Evidence of Non-carcinogenicity for Humans

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).

>> No indication of carcinogenicity to humans (not listed by IARC).

Health Effects:

>> Acute exposure to cholinesterase inhibitors can cause a cholinergic crisis characterized by severe nausea/vomiting, salivation, sweating, bradycardia, hypotension, collapse, and convulsions. Increasing muscle weakness is a possibility and may result in death if respiratory muscles are involved. Accumulation of ACh at motor nerves causes overstimulation of nicotinic expression at the neuromuscular junction. When this occurs symptoms such as muscle weakness, fatigue, muscle cramps, fasciculation, and paralysis can be seen. When there is an accumulation of ACh at autonomic ganglia this causes overstimulation of nicotinic expression in the sympathetic system. Symptoms associated with this are hypertension, and hypoglycemia. Overstimulation of nicotinic acetylcholine receptors in the central nervous system, due to accumulation of ACh, results in anxiety, headache, convulsions, ataxia, depression of respiration and circulation, tremor, general weakness, and potentially coma. When there is expression of muscarinic overstimulation due to excess acetylcholine at muscarinic acetylcholine receptors symptoms of visual disturbances, tightness in chest, wheezing due to bronchoconstriction, increased bronchial secretions, increased salivation, lacrimation, sweating, peristalsis, and urination can occur. Certain reproductive effects in fertility, growth, and development for males and females have been linked specifically to organophosphate pesticide exposure. Most of the research on reproductive effects has been conducted on farmers working with pesticides and insecticdes in rural areas. In females menstrual cycle disturbances, longer pregnancies, spontaneous abortions, stillbirths, and some developmental effects in offspring have been linked to organophosphate pesticide exposure. Prenatal exposure has been linked to impaired fetal growth and development. Neurotoxic effects have also been linked to poisoning with OP pesticides causing four neurotoxic effects in humans: cholinergic syndrome, intermediate syndrome, organophosphate-induced delayed polyneuropathy (OPIDP), and chronic organophosphate-induced neuropsychiatric disorder (COPIND). These syndromes result after acute and chronic exposure to OP pesticides.

Exposure Routes:

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

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

Inhalation Exposure

>> Pupillary constriction, muscle cramp, excessive salivation. Sweating. Nausea. Dizziness. Laboured breathing. Convulsions. Unconsciousness.

Skin Exposure

>> MAY BE ABSORBED! See Inhalation.

Ingestion Exposure

>> Vomiting. Abdominal cramps. Diarrhoea. Further see Inhalation.

>> irritation eyes, skin; nausea, vomiting, abdominal cramps, diarrhea, salivation; headache, dizziness, lassitude (weakness, exhaustion); rhinorrhea (discharge of thin nasal mucus), chest tightness; blurred vision, miosis; cardiac irreg; muscle fasciculation; dyspnea (breathing difficulty)

Target Organs:

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

>> Neurological (Nervous System)

>> Nervous

Adverse Effects:

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

>> Other Poison - Organophosphate

>> ACGIH Carcinogen - Not Classifiable.

Treatment:

Treatment when exposed to toxin

>> If the compound has been ingested, rapid gastric lavage should be performed using 5% sodium bicarbonate. For skin contact, the skin should be washed with soap and water. If the compound has entered the eyes, they should be washed with large quantities of isotonic saline or water. In serious cases, atropine and/or pralidoxime should be administered. Anti-cholinergic drugs work to counteract the effects of excess acetylcholine and reactivate AChE. Atropine can be

used as an antidote in conjunction with pralidoxime or other pyridinium oximes (such as trimedoxime or obidoxime), though the use of '-oximes' has been found to be of no benefit, or possibly harmful, in at least two meta-analyses. Atropine is a muscarinic antagonist, and thus blocks the action of acetylcholine peripherally.

Antidote and Emergency Treatment:

>> Basic Treatment: Establish a patent airway. Suction if necessary. Aggressive airway control may be needed. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary ... . Monitor for shock and treat if necessary... . Anticipate seizures and treat if necessary ... . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline during transport ... . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal ... . /Organophosphates and related compounds/

Human Toxicity Excerpts:

>> In the present study, cytotoxic, cytostatic, and cytogenetic effects of a number of organophosphate pesticides on human lymphoid cells (LAZ-007) in culture were examined. Ethion was found to significantly increase the SCE (sister chromatid exchange) frequency.

Non-Human Toxicity Excerpts:

>> MUTAGENICITY: MUTATION RESEARCH 76: 169 (1980). ESCHERICHIA COLI WP2,UVA - REVERSE MUTATION STUDIES WITH METABOLIC ACTIVATION: NEGATIVE.

Non-Human Toxicity Values:

>> LD50 Rat oral 47 mg/kg, acute /Technical/

12. Ecological Information

Resident Soil (mg/kg)

>> 3.20e+01

Industrial Soil (mg/kg)

>> 4.10e+02

Tapwater (ug/L)

>> 4.30e+00

MCL (ug/L)

>> 2.00e+00

Risk-based SSL (mg/kg)

>> 8.50e-03

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

>> 0.1

ICSC Environmental Data:

>> The substance is very toxic to aquatic organisms. Avoid release to the environment in circumstances different to normal use.

Sediment/Soil Concentrations:

Concentrations of this compound in sediment/soil.

>> SOIL: Ethion was detected in 2 of 1486 soil samples (concentrations of 0.06 and 0.24 ppm) collected from 37 states during fiscal year 1972 as part of the National Soils Monitoring Program(1). It has been detected in marsh soils of the Holland Marsh in southern Ontario (1972-1975 monitoring) which serves as part of the drainage system from agricultural lands(3). Ethion was detected in 23 of 28 organic soils of 28 widely separated farms in southwestern Ontario in 1976 with positive concns ranging from a trace to 4.28 ppm(4). 10 soil samples from 8 agrichemical facilities sites were found positive for ethion with concns ranging from 18-6300 ug/kg, with a mean concn of 283 ug/kg and a median of 237 ug/kg(5). Ethion was not detected in loamy sand farms and silt loam farms in the Fraser Valley, British Columbia, but was detected in 2 out of 4 muck farms at concns ranging 14-256 ppb dry weight, and a mean of 135 ppb dry weight(7). SEDIMENT: Ethion was detected in 0.4% of 928 bed sediment samples collected at 174 US Geological Survey-USEPA Pesticide Monitoring Network stations between 1975-1980(2). Ethion was detected 7 times in sediment from South Florida with a highest concentration of 77 ug/kg(6).

Fish/Seafood Concentrations:

Concentrations of this compound in fish or seafood.

>> As part of the monitoring for the National Pesticides Monitoring Program for estuarine fish 1972-1976, ethion was detected in 19 of 140 juvenile fish collected in MD (mean concn of 0.169 mg/kg) and in 1 of 51 juvenile fish collected in TX (concn of 0.083 mg/kg) (1). Ethion concentrations of 0.01 to 0.05 ppm were detected in fish (carp, catfish, silver bass, whitefish) taken from Holland Marsh and Lake Ontario in 1974(2).

Animal Concentrations:

Concentrations of this compound in animals.

>> ... ETHION ... /HAS BEEN RECOVERED/ IN THE LOW-NANOGRAM RANGE FROM ... BEES & URINE.

Average Daily Intake:

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

>> FOOD: Based on monitoring of the US FDA Total Diet Study (Market Basket Survey) for fiscal years 1978-1982, the daily intake of ethion has been estimated to be 0.001 to 0.005 ug/kg per body wt/day(1).

13. Disposal Considerations

Spillage Disposal

>> Personal protection: complete protective clothing including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

Disposal Methods

>> SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

>> A potential candidate for fluidized bed incineration at a temperature range of 450 to 980 °C and residence times of seconds for liquids and gases, and longer for solids. A potential candidate for rotary kiln incineration at a temperature range of 820 to 1,600 °C and residence times of seconds for liquids and gases, and hours for solids. A potential candidate for liquid injection incineration at a temperature range of 650 to 1,600 °C and a residence time of 0.1 to 2 seconds.

>> Peer-review: Large amt, incinerate in a unit with effluent gas scrubbing. (Peer-review conclusions of an IRPTC expert consultation (May 1985))

14. Transport Information

DOT

Ethion
6.1

UN Pack Group: II
Reportable Quantity of 10 lb or 4

IATA

Ethion
6.1,
UN Pack Group: II

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.

>> Ethion 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.

>> Dangerous when heated to decomposition. Emits highly toxic fumes of oxides of sulfur and phosphorous.

Other Safety Information

Chemical Assessment

>> IMAP assessments - Phosphorodithioic acid, S,S'-methylene O,O,O',O'-tetraethylester: Environment tier I assessment

>> IMAP assessments - Phosphorodithioic acid, S,S'-methylene O,O,O',O'-tetraethylester: 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."