SAFETY DATA SHEET

1. Material Identification

Product Name	: Phosphorodithioic acid O-ethyl S,S- dipropyl ester
Catalog Number	: io-2862
CAS Number	: 13194-48-4
Identified uses	: Laboratory chemicals, manufacture of chemical compounds
Company	: lonz

>> 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 (100%): Toxic if swallowed [Danger Acute toxicity, oral]
- >> H310 (100%): Fatal in contact with skin [Danger Acute toxicity, dermal]
- >> H317 (100%): May cause an allergic skin reaction [Warning Sensitization, Skin]
- >> H330 (100%): Fatal if inhaled [Danger Acute toxicity, inhalation]
- >> 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, P261, P262, P264, P270, P271, P272, P273, P280, P284, P301+P316, P302+P352, P304+P340, P316, P320, P321, P330, P333+P317, P361+P364, P362+P364, P391, P403+P233, P405, and P501

Health Hazards:

- >> This material is extremely toxic; the probable oral lethal dose for humans is 5–50 mg/kg, or between 7 drops and 1 teaspoonful for a 150 lb. person. It is a cholinesterase inhibitor which affects the nervous system. (EPA, 1998)
- >> (Non-Specific -- Organophosphorus Pesticide, Liquid, n.o.s.) Container may explode in heat of fire. Fire and runoff from fire control water may produce irritating or poisonous gases. Stable in water. Hydrolyzed in alkali. (EPA, 1998)
- >> Combustible. Gives off irritating or toxic fumes (or gases) in a fire. Heating will cause rise in pressure with risk of bursting.

3. Composition/Information On Ingredients

Chemical name: Phosphorodithioic acid O-ethyl S,S- dipropyl esterCAS Number: 13194-48-4Molecular Formula: C8H19O2PS2Molecular Weight: 242.3000 g/mol

4. First Aid Measures

First Aid:

- >> Warning: Effects may be delayed up to 12 hours. Caution is advised.
- >> Note: Ethoprophos is a cholinesterase inhibitor.
- >> Signs and Symptoms of Ethoprophos Exposure: Acute exposure to ethoprophos 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 ethoprophos 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 ethoprophos.
- >> 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 ethoprophos.
- >> 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 ethoprophos 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 ethoprophos 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 immediately for medical attention.

Skin First Aid

>> Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer immediately for medical attention. Wear protective gloves when administering first aid.

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. Refer immediately for medical attention.

5. Fire Fighting Measures

- >> (Non-Specific -- Organophosphorus Pesticide, Liquid, n.o.s.) Stay upwind; keep out of low areas. Move containers from fire area if you can do it without risk. Fight fire from maximum distance. Dike fire control water for later disposal; do not scatter the material. Wear positive pressure breathing apparatus and special protective clothing.
- >> (Non-Specific -- Organophosphorus Pesticide, Liquid, n.o.s.) This material may burn but does not ignite readily. 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, dry powder, carbon dioxide, alcohol-resistant foam. In case of fire: keep drums, etc., cool by spraying with water. NO direct contact with water.

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. 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 let this chemical enter the environment.

7. Handling And Storage

Safe Storage:

>> Provision to contain effluent from fire extinguishing. Separated from food and feedstuffs. Store in an area without drain or sewer access. Ventilation along the floor.

8. Exposure Control/ Personal Protection

Inhalation Risk:

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

Effects of Short Term Exposure:

>> Cholinesterase inhibition. The substance may cause effects on the nervous system. This may result in convulsions and respiratory depression. Exposure could cause 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: 0.0003 mg/kg

Fire Prevention

>> NO open flames.

Exposure Prevention

>> PREVENT GENERATION OF MISTS! STRICT HYGIENE! IN ALL CASES CONSULT A DOCTOR!

Inhalation Prevention

>> Use 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:

>> 242.3

Exact Mass:

>> 242.05640919

Physical Description:

>> Ethorop is one of a family of organophosphorus pesticides. It is combustible though it may require some effort to ignite. It is very toxic by skin absorption and inhalation. It may or may not be water soluble.

>> PALE YELLOW LIQUID WITH CHARACTERISTIC ODOUR.

Color/Form:

>> Pale yellow liquid

Boiling Point:

>> 187 to 196 °F at 0.2 mmHg (EPA, 1998)

>> at 0.03kPa: 86-91 °C

Melting Point:

- >> -13 °C
- >> -13 °C

Solubility:

- >> Readily sol in most organic solvents
- >> Solubility in water, g/100ml at 20 °C: 0.075

Density:

- >> 1.094 at 68 °F (EPA, 1998) Denser than water; will sink
- >> Relative density (water = 1): 1.09

Vapor Density:

>> Relative vapor density (air = 1): 8.4

Vapor Pressure:

- >> 0.00035 mmHg at 78.8 °F (EPA, 1998)
- >> Vapor pressure, Pa at 20-25 °C: 0.05

LogP:

- >> log Kow = 3.59 @ 21 °C
- >> 3.6

Stability/Shelf Life:

>> Very stable in neutral and weakly acidic media. Rapidly hydrolysed in alkaline media. Stable in water up to 100 °C at pH 7.

Decomposition:

- >> When heated to decomposition it emits very toxic fumes of /phosphorus oxides and sulfur oxides/.
- >> room temperature. This produces flammable n-propylmercaptan (see ICSC 1492). Decomposes on heating. This produces toxic fumes including phosphorus oxides and sulfur oxides.

Corrosivity:

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

>> Non-corrosive to metals

Ionization Efficiency:

The ratio of the number of ions formed to the number of electrons or photons used in an ionization process.

Ionization mode

>> Positive			
logIE			
>> 2.64			
рН			
>> 2.7			
Instrument			
>> Agilent XCT			

lon source

>> Electrospray ionization

Additive

>> formic acid (5.3nM)

Organic modifier

>> MeCN (80%)

Reference

>> DOI:10.1038/s41598-020-62573-z

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.

>> 149.27 Å² [M+H]+ [CCS Type: TW]

10. Stability And Reactivity

>> Hydrolyzed in alkali.

11. Toxicological Information

Toxicity Summary:

>> Ethoprop 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.

EPA Human Health Benchmarks for Pesticides:

This section provides the EPA human health benchmarks non-enforceable drinking water levels related to adverse health effects from drinking water exposure to contaminants that have no drinking water standards or health advisories.

Chemical Substance

> Ethoprop
cute or One Day PAD (RfD) [mg/kg/day]
> 0.00042
cute or One Day HHBPs [ppb]
> 2.8
cute HHBP Sensitive Lifestage/Population
> Children
hronic or One Day PAD (RfD) [mg/kg/day]
> 0.000065
hronic or One Day HHBPs [ppb]

>> 0.37

Chronic HHBP Sensitive Lifestage/Population
>> Females 13-49 yrs
Cancer Quantification c (Q1) Values (CSF) [mg/kg/day]
>> 0.0281
Carcinogenic HHBP (E-6 to E-4) [ppb]
>> 1.05-105
Reference (PDF)
>> Human Health Benchmarks for Pesticides - 2021 Update
USGS Health-Based Screening Levels for Evaluating Water-Quality:
This section provides the USGS Health-Based Screening Levels for Evaluating Water-Quality data.
Chemical
>> Ethoprophos
USGS Parameter Code
>> 68596
Chronic Noncancer HHBP (Human Health Benchmarks for Pesticides)[µg/L]
>> 0.37
Carcinogenic HHBP [µg/L]
>> 1.05-105
Benchmark Remarks

>> Listed as Ethoprop

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: Likely to be Carcinogenic to 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 in hazardous amounts by inhalation, through the skin, through the eyes and by ingestion.
- >> Oral (L1655) ; inhalation (L1655) ; dermal (L1655)

Inhalation Exposure

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

Skin Exposure

>> MAY BE ABSORBED! See Inhalation.

Eye Exposure

>> MAY BE ABSORBED! Blurred vision.

Ingestion Exposure

- >> Abdominal cramps. Diarrhoea. Vomiting. Further see Inhalation.
- >> Early symptoms of poisoning may include excessive sweating, headache, weakness, giddiness, nausea, vomiting, hypersalivation, stomach pains, blurred vision, slurred speech and muscle twitching. Later, there may be convulsions and coma. (L1655)

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 Organophosphate

Toxicity Data:

>> LC50 (rat) = 123 mg/m3

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.

Interactions:

>> Because different classes of enzymes may be inhibited, the effects of organophosphorus pesticide poisoning may be complex and potentially at least could involve interactions with drugs as well as with other pesticides or chemicals. Potentiation may also involve solvents or other components of formulated pesticides. Certain drugs such a phenothiazines, antihistamines, CNS depressants, barbiturates, xanthines (theophylline), aminoglycosides and parasympathomimetic agents are to be avoided because of increased toxicity. /Organophosphorus pesticides/

Antidote and Emergency Treatment:

>> Airway protection. Ensure that a clear airway exists. Intubate the patients and aspirate the secretions with a large-bore suction device if necessary. Administer oxygen by mechanically assisted pulmonary ventilation if respiration is depressed. Improve tissue oxygenation as much as possible before administering atropine, so as to minimize the risk of ventricular fibrillation. In severe poisonings, it may be necessary to support pulmonary ventilation mechanically for several days. /Organophosphate pesticides/

Human Toxicity Excerpts:

>> /HUMAN EXPOSURE STUDIES/ In the OPP Incident Data System, 6 incidents were listed, including ingestion by an adult and child, as well as reports involving pesticide handlers, with 2 of 4 handler incidents not providing information on the symptoms, and the other 2 incidents reporting "dizziness, nausea, headaches, vomiting, and pinpoint/constricted pupils." ...Based on a survey of the Poison Control Centers, the information indicated that ethoprop was likely to result in "... above average evidence of effects nearly twice as likely to require hospitalization as did cases due to other cholinesterase inhibitors." However, the information from these ...sources is based on a relatively small number of incidents.

Non-Human Toxicity Excerpts:

>>/LABORATORY ANIMALS: Acute Exposure/ ...In Phase 1, 10 female rats/group were orally gavaged with 4 doses of ethoprop, ranging from 20–75 mg/kg, with 6 doses of O-ethyl-S-methyl-S-propylphosphorodithioate (SME), ranging from 20–200 mg/kg, with 6 doses of O-ethyl-O-methyl- S-propylphosphorothioate (OME), ranging from 5–200 mg/kg, and 5 doses of O-ethyl- S-propylphosphorothioate (M1) ranging from 250–2000 mg/kg. Clinical signs included thin appearance, staggered gait, hypoactivity, red-stained face, excessive salivation, dyspnea, lacrimation, miosis, soft stool, tremors and absence of pain reflex. LD50 (95% confidence limits): Ethoprop (F) 55.8 (48.9–63.6) mg/kg, SME (F) 50.0 (41.0–61.0) mg/kg, OME (F) 22.4 (19.2–26.1) mg/kg, M1 (F) 1608 (1253–2064) mg/kg. In Phase 2, 10 females/group were dosed orally with 0 (corn oil), 19 mg/kg (ethoprop), 17 mg/kg (SME) or 8 mg/kg (OME) (based upon 1/3 of LD50 dose level) and the plasma, rbc and brain cholinesterase (ChE) activities measured 24 hours after dosing. For ethoprop, mean plasma, rbc and brain ChE activities were 26.5, 63.0 and 67.7% of control values. For SME, mean plasma, rbc and 51.6% of control values. For OME, the respective activities were 59.7, 52.8 and 51.6% of control values.

Non-Human Toxicity Values:

>> LD50 Rat oral (male) 61 mg/kg

12. Ecological Information

ICSC Environmental Data:

>> The substance is very toxic to 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: Ethoprop was not detected at four of the five sites collected in 1998 from Humrat Al-Sahn site in Jordan; at the fifth site, Wadi Al-Dafali, ethoprop was found in soil at 0.16 ppm(1).

13. Disposal Considerations

Spillage Disposal

>> Personal protection: complete protective clothing including self-contained breathing apparatus. 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 let this chemical enter the environment.

Disposal Methods

>> SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure 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, aquatic, and plant life; and conformance with environmental and public health regulations.

14. Transport Information

DOT

Phosphorodithioic acid O-ethyl S,S- dipropyl ester 6.1 UN Pack Group: I

ΙΑΤΑ

15. Regulatory Information

Regulatory Information

REACH Registered Substance

>> Status: Active Update: 30-05-2022 https://echa.europa.eu/registration-dossier/-/registered-dossier/33573

16. Other Information

Other Safety Information

Chemical Assessment

- >> IMAP assessments Phosphorodithioic acid, O-ethyl S,S-dipropyl ester: Human health tier I assessment
- >> IMAP assessments Phosphorodithioic acid, O-ethyl S,S-dipropyl ester: Environment tier I assessment

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