Sulfotep

sc-251093

Material Safety Data Sheet

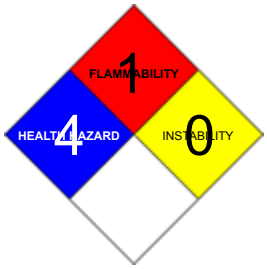
Hazard Alert Code Key:	EXTREME	HIGH	MODERATE	LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Sulfotep

STATEMENT OF HAZARDOUS NATURE
CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C8-H20-O5-P2-S2, "thiophosphoric acid, tetraethyl ester", "ASP 47", Bayer-E-393, "bis-o, o-diethylphosphorothionic anhydride", Bladafume, Bladafun, "dithiodiphosphoric acid, tetraethyl ester", dithiofos, dithion, "di(thiophosphoric) acid, tetraethyl ester", dithiotep, "Lethalaire G-57", Pirofos, "plant dithio aerosol", "Plantfume 103 Smoke Generator", "pyrophosphorodithioc acid, tetraethyl ester", sulfatep, sulfotepp, thiotepp, "tetraethyl dithiopyrophosphate", "o, o, o' , o' -tetraethyl dithiopyrophosphate"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability	1		
Toxicity	4		
Body Contact	4		
Reactivity	1		

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

Chronic 2

CANADIAN WHMIS SYMBOLS

EMERGENCY OVERVIEW

RISK

Very toxic by inhalation, in contact with skin and if swallowed.
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Severely toxic effects may result from the accidental ingestion of the material; animal experiments indicate that ingestion of less than 5 gram may be fatal or may produce serious damage to the health of the individual.
■ Ingestion may produce nausea, vomiting, depressed appetite, abdominal cramps, and diarrhoea.
■ Depressed cholinesterase activity of the peripheral and central nervous system is reported in animals showing sulfotep intoxication.
■ Symptoms may include nausea, headache, giddiness, blurred vision, contraction of pupils, vomiting.
■ When taken in large quantities, thiophosphates may cause severe abdominal pains, thirst, acidic blood, difficult breathing, convulsions, fainting and even death.
They may weaken the immune system, and thus make one fall sick easily and frequently.

EYE

■ There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
■ Direct eye contact can produce tears, eyelid twitches, pupil contraction, loss of focus, and blurred or dimmed vision.
Dilation of the pupils occasionally occurs.
■ Instillation of sulfotep into rabbit eyes caused slight conjunctival reaction which returned to normal within 24 hours.

SKIN

■ Skin contact with the material may produce severely toxic effects; systemic effects may result following absorption and these may be fatal.
■ The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.
The material is unlikely to produce an irritant dermatitis as described in EC Directives .
■ There may be sweating and muscle twitches at site of contact.
Reaction may be delayed by hours.
■ Skin lesions have been reported during the spraying of sulfotep.
■ Open cuts, abraded or irritated skin should not be exposed to this material.
■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects.
Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
■ Absorption by skin may readily exceed vapour inhalation exposure.
Symptoms for skin absorption are the same as for inhalation.

INHALED

■ Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may produce severely toxic effects.
Relatively small amounts absorbed from the lungs may prove fatal.
■ The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models).
Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
■ Poisoning due to cholinesterase inhibitors causes symptoms such as increased blood flow to the nose, watery discharge, chest discomfort, shortness of breath and wheezing.

Other symptoms include increased production of tears, nausea and vomiting, diarrhoea, stomach pain, involuntary passing of urine and stools, chest pain, breathing difficulty, low blood pressure, irregular heartbeat, loss of reflexes, twitching, visual disturbances, altered pupil size, convulsions, lung congestion, coma and heart failure.
■ Two men, accidentally poisoned when spraying a mixture of sulfotep and tetraethylpyrophosphate (which had decomposed from diazinon) showed symptoms typical of organophosphorus poisoning.
■ Inhalation hazard is increased at higher temperatures.

CHRONIC HEALTH EFFECTS

■ Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
Repeated or prolonged exposures to cholinesterase inhibitors produce symptoms similar to acute effects. In addition workers exposed repeatedly to these substances may exhibit impaired memory and loss of concentration, severe depression and acute psychosis, irritability, confusion, apathy, emotional liability, speech difficulties, headache, spatial disorientation, delayed reaction times, sleepwalking, drowsiness or insomnia. An influenza-like condition with nausea, weakness, anorexia and malaise has been described. There is a growing body of evidence from epidemiological studies and from experimental laboratory studies that short-term exposure to some cholinesterase-inhibiting insecticides may produce behavioural or neuro-chemical changes lasting for days or months, presumably outlasting the cholinesterase inhibition. Although the number of adverse effects following humans poisonings subside, there are still effects in some workers months after cholinesterase activity returns to normal. These long-lasting effects include blurred vision, headache, weakness, and anorexia. The neurochemistry of animals exposed to chlorpyrifos or fenthion is reported to be altered permanently after a single exposure. These effects may be more severe in developing animals where both acetyl- and butyrylcholinesterase may play an integral part in the development of the nervous system. Padilla S., The Neurotoxicity of Cholinesterase-Inhibiting Insecticides Past and Present Evidence Demonstrating Persistent Effects. Inhalation Toxicology 7903-907, 1995.
BE AWARE Repeated minor exposures with only mild symptoms may have serious cumulative poisoning effect.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
sulfotep	3689-24-5	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

If swallowed
- Contact a Poisons Information Centre or a doctor at once.
- If swallowed, activated charcoal may be advised.
- Give atropine if instructed.
- REFER FOR MEDICAL ATTENTION WITHOUT DELAY.

EYE

If this product comes in contact with the eyes
- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.

SKIN

If product comes in contact with skin
- Contact a Poisons Information Centre or a doctor.
- DO NOT allow clothing wet with product to remain in contact with skin, strip all contaminated clothing including boots.
- Quickly wash affected areas vigorously with soap and water.

- DO NOT give anything by mouth to a patient showing signs of narcosis, i.e. losing consciousness.

INHALED

- If spray mist, vapour are inhaled, remove from contaminated area.
- Contact a Poisons Information Centre or a doctor at once.
- Lay patient down in a clean area and strip any clothing wet with spray.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.

NOTES TO PHYSICIAN

-
- Most organophosphate compounds are rapidly well absorbed from the skin, conjunctiva, gastro-intestinal tract and lungs.
- They are detoxified by Cytochrome P450-mediated monoxygenases in the liver but some metabolites are more toxic than parent compounds.
- Metabolites are usually detected 12-48 hours postexposure.
- Organophosphates phosphorylate acetylcholinesterase with resultant accumulation of large amounts of acetylcholine causing initial stimulation, then exhaustion of cholinergic synapse.

Section 5 - FIRE FIGHTING MEASURES

Vapor Pressure (mmHg)	0.001 mm Hg
Upper Explosive Limit (%)	Not available
Specific Gravity (water=1)	1.196
Lower Explosive Limit (%)	Not available

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use fire fighting procedures suitable for surrounding area.

When any large container (including road and rail tankers) is involved in a fire,
consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include carbon dioxide (CO2), phosphorus oxides (POx), sulfur oxides (SOx), other pyrolysis products typical of burning organic material.
May emit poisonous fumes.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

Slippery when spilt.

- Remove all ignition sources.

- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact by using protective equipment.

MAJOR SPILLS

Slippery when spilt.

- DO NOT touch the spill material
- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- DO NOT allow clothing wet with material to stay in contact with skin
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

RECOMMENDED STORAGE METHODS

- DO NOT use unlined steel containers
- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

For low viscosity materials

- Drums and jerricans must be of the non-removable head type.
- Where a can is to be used as an inner package, the can must have a screwed enclosure.

<. All inner and sole packagings for substances that have been assigned to Packaging Groups I or II on the basis of inhalation toxicity criteria, must be hermetically sealed.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/CC	Notes
US NIOSH Recommended Exposure Limits (RELs)	sulfotep (TEDP)		0.2						[skin]
Canada - Alberta Occupational Exposure Limits	sulfotep (Sulfotep (TEDP))		0.1						
Canada - British Columbia Occupational Exposure Limits	sulfotep (Sulfotepp (TEDP), Inhalable Revised 2005)		0.1 (V)						Skin

US OSHA Permissible Exposure Levels (PELs) - Table Z1	sulfotep (TEDP (Sulfotep))		0.2				
US ACGIH Threshold Limit Values (TLV)	sulfotep (Sulfotepp (TEDP))		0.1				TLV® Basis Cholinesterase inhib ; BEIA
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
US - Minnesota Permissible Exposure Limits (PELs)	sulfotep (TEDP (Sulfotep))		0.2				
US - California Permissible Exposure Limits for Chemical Contaminants	sulfotep (Sulfotep; tetraethyl dithionopyrophosphate)		0.2				
US - Idaho - Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
US - Hawaii Air Contaminant Limits	sulfotep (TEDP (Sulfotep))		0.2		0.6		
US - Alaska Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
US - Michigan Exposure Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2				
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	sulfotep (TEDP - Skin)	-	0.2	-	0.6		

US - Washington Permissible exposure limits of air contaminants	sulfotep (Sulfotep (TEDP))		0.2	0.6	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	sulfotep (Sulphotep (TEDP) (inhalable fraction++ and vapour))		0.1	0.3	Skin
Canada - Prince Edward Island Occupational Exposure Limits	sulfotep (Sulfotepp (TEDP))		0.1		TLV® Basis Cholinesterase inhib ; BEIA
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	sulfotep (TEDP (Sulfotep))		0.2		
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	sulfotep (Sulfotep)		0.2		
US - Oregon Permissible Exposure Limits (Z-1)	sulfotep (TEDP (Sulfotepp))	-	0.2		
Canada - Northwest Territories Occupational Exposure Limits (English)	sulfotep (TEDP - Skin)		0.2	0.6	
Canada - Nova Scotia Occupational Exposure Limits	sulfotep (Sulfotepp [TEDP])		0.1		TLV Basis cholinesterase inhibition. BEI-A

PERSONAL PROTECTION




RESPIRATOR

•Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 1432000 & 1492001, ANSI Z88 or national equivalent)

EYE

- Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure
- Chemical goggles.whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted
- Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection.
- Alternatively a gas mask may replace splash goggles and face shields.

HANDS/FEET

- Elbow length PVC gloves

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

OTHER

- Overalls.
- Eyewash unit.
- Barrier cream.
- Skin cleansing cream.

ENGINEERING CONTROLS

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
The basic types of engineering controls are
Process controls which involve changing the way a job activity or process is done to reduce the risk.
Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
If inhalation risk exists, wear SAA approved respirator with organic-vapour or pesticide cartridge.
Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.
Toxic or noxious vapors/gas.

State	Liquid	Molecular Weight	322.32
Melting Range (°F)	Not available	Viscosity	Not Available
Boiling Range (°F)	277- 280 (2mm Hg)	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapor Pressure (mmHg)	0.001 mm Hg
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.196
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Negligible	Evaporation Rate	Not available

APPEARANCE

Liquid with garlic-like odor; does not mix well with water (25 ppm). Soluble in alcohol, chloromethane and most organic solvents.

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

STORAGE INCOMPATIBILITY

¦ Sulfotep

- hydrolyses slowly in water
- is incompatible with antimony(V) pentachloride, lead diacetate, magnesium, silver nitrate
- corrodes iron
- A number of phosphate and thiophosphate esters are of limited thermal stability and undergo highly exothermic self-accelerating decomposition reactions which may be catalysed by impurities.
- The potential hazards can be reduced by appropriate thermal control measures.

BRETHERICK L. Handbook of Reactive Chemical Hazards<.

- Alkyl esters of thiophosphates are often temperature sensitive and decompose if overheated. Thermal decomposition products include highly toxic and odiferous hydrogen sulfide and extremely odourous alkyl mercaptans. Both species can be detected at extremely low concentrations and vapours may travel long distances.
- Low temperature storage may produce crystallisation from solution.
- CARE If heating to liquefy, use tepid water, Avoid temperatures in excess of 50 deg. C.
- Head-space of drums may contain hydrogen sulfide.
- Avoid reaction with oxidising agents

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

sulfotep

TOXICITY AND IRRITATION

unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

SULFOTEP

CARCINOGEN

Sulfotepp (TEDP)	US ACGIH Threshold Limit Values (TLV) - Carcinogens	Carcinogen Category	A4
sulfotep	US - Rhode Island Hazardous Substance List	IARC	
TWA_MG_M3~	US - Maine Chemicals of High Concern List	Carcinogen	A4
TWA_MG_M3~	Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens	Notes	TLV® Basis Cholinesterase inhib ; BEIA
TWAMG_M3~	Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens	Notes	TLV Basis cholinesterase inhibition. BEI-A

SKIN

sulfotep	US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants - Skin	Skin Designation	X
sulfotep	US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants - Skin	Skin Designation	X
sulfotep	US - Washington Permissible exposure limits of air contaminants - Skin	Skin	X
sulfotep	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	X

sulfotep	US ACGIH Threshold Limit Values (TLV) - Skin	Skin Designation	Yes
sulfotep	US AIHA Workplace Environmental Exposure Levels (WEELs) - Skin	Notes	TLV® Basis Cholinesterase inhib ; BEIA
sulfotep	US NIOSH Recommended Exposure Limits (RELs) - Skin	Skin	Yes
sulfotep	US - California OEHHA/ARB - Acute Reference Exposure Levels and Target Organs (RELs) - Skin	Skin	X
sulfotep	US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) - Skin	Skin	X
sulfotep	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	X
sulfotep	US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants - Skin	Skin Designation	Yes
sulfotep	Canada - British Columbia Occupational Exposure Limits - Skin	Notation	Skin
sulfotep	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	X
sulfotep	US - Minnesota Permissible Exposure Limits (PELs) - Skin	Skin Designation	Yes
sulfotep	US - Hawaii Air Contaminant Limits - Skin Designation	Skin Designation	X
sulfotep	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	X
sulfotep	US OSHA Permissible Exposure Levels (PELs) - Skin	Skin Designation	Yes
sulfotep	US - Oregon Permissible Exposure Limits (Z2) - Skin	Skin	X
sulfotep	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	X
sulfotep	US - California Permissible Exposure Limits for Chemical Contaminants - Skin	Skin	S
sulfotep	Canada - Alberta Occupational Exposure Limits - Skin	Substance Interaction	1

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
This material and its container must be disposed of as hazardous waste.
Avoid release to the environment.
Refer to special instructions/ safety data sheets.

Section 13 - DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions
B. Component Waste Numbers
When sulfotep is present as a solid waste as a discarded commercial chemical product, off-specification species, as a container residue, or a spill residue, use EPA waste number P109 (waste code T).
Disposal Instructions
All waste must be handled in accordance with local, state and federal regulations.

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and MSDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols:	None	Hazard class or Division:	6.1
Identification Numbers:	UN1704	PG:	II
Label Codes:	6.1	Special provisions:	IB2, T7, TP2
Packaging: Exceptions:	153	Packaging: Non-bulk:	212
Packaging: Exceptions:	153	Quantity limitations: Passenger aircraft/rail:	25 kg
Quantity Limitations: Cargo aircraft only:	100 kg	Vessel stowage: Location:	D
Vessel stowage: Other:	40	S.M.P.:	YES

Hazardous materials descriptions and proper shipping names:
Tetraethyl dithiopyrophosphate

Air Transport IATA:

ICAO/IATA Class:	6.1	ICAO/IATA Subrisk:	None
UN/ID Number:	1704	Packing Group:	II
Special provisions:	A6		

Cargo Only

Packing Instructions:	662	Maximum Qty/Pack:	60 L
Passenger and Cargo		Passenger and Cargo	
Packing Instructions:	654	Maximum Qty/Pack:	5 L
Passenger and Cargo Limited Quantity		Passenger and Cargo Limited Quantity	
Packing Instructions:	Y641	Maximum Qty/Pack:	1 L

■ Air transport may be forbidden if this material is flammable, corrosive or toxic gases may be released under normal conditions of transport.

Shipping Name: TETRAETHYL DITHIOPYROPHOSPHATE

Maritime Transport IMDG:

IMDG Class:	6.1	IMDG Subrisk:	P
UN Number:	1704	Packing Group:	II
EMS Number:	F-A,S-A	Special provisions:	43
Limited Quantities:	100 ml	Marine Pollutant:	Yes

Shipping Name: TETRAETHYL DITHIOPYROPHOSPHATE

Section 15 - REGULATORY INFORMATION

ssulfotep (CAS: 3689-24-5) is found on the following regulatory lists;

"Canada - Alberta Occupational Exposure Limits","Canada - British Columbia Occupational Exposure Limits","Canada - Northwest Territories Occupational Exposure Limits (English)","Canada - Nova Scotia Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits","Canada - Prince Edward Island Occupational Exposure Limits - Carcinogens","Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)","Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits","Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances","International Maritime Dangerous Goods Requirements (IMDG Code) - Marine Pollutants","International Maritime Dangerous Goods Requirements (IMDG Code) - Substance Index","US - Alaska Limits for Air Contaminants","US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List","US - California Permissible Exposure Limits for Chemical Contaminants","US - Connecticut Hazardous Air Pollutants","US - Delaware Pollutant Discharge Requirements - Reportable Quantities","US - Hawaii Air Contaminant Limits","US - Idaho - Limits for Air Contaminants","US - Massachusetts Oil & Hazardous Material List","US - Michigan Exposure Limits for Air Contaminants","US - Minnesota Hazardous Substance List","US - Minnesota Permissible Exposure Limits (PELs)","US - New Jersey Right to Know Hazardous Substances","US - Oregon Permissible Exposure Limits (Z-1)","US - Pennsylvania - Hazardous Substance List","US - Rhode Island Hazardous Substance List","US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants","US - Vermont Hazardous Constituents","US - Vermont Hazardous Waste - Acutely Hazardous Wastes","US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants","US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants","US - Washington Dangerous waste constituents list","US - Washington Discarded Chemical Products List - ""P"" Chemical Products","US - Washington Permissible exposure limits of air contaminants","US - Wisconsin Control of Hazardous Pollutants - Emission Thresholds, Standards and Control Requirements (Pesticides, Rodenticides, Insecticides, Herbicides or Fungicides)","US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants","US ACGIH Threshold Limit Values (TLV)","US ACGIH Threshold Limit Values (TLV) - Carcinogens","US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides","US Department of Transportation (DOT) Marine Pollutants - Appendix B","US DOE Temporary Emergency Exposure Limits (TEELs)","US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act","US NIOSH Recommended Exposure Limits (RELs)","US OSHA Permissible Exposure Levels

(PELs) - Table Z1","US RCRA (Resource Conservation & Recovery Act) - Appendix IX to Part 264 Ground-Water Monitoring List 1","US RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261","US RCRA (Resource Conservation & Recovery Act) - List of Hazardous Wastes","US SARA Section 302 Extremely Hazardous Substances"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE

■ Cumulative effects may result following exposure*.
■ May produce discomfort of the eyes*.
* (limited evidence).

Reasonable care has been taken in the preparation of this information, but the author makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The author makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use. For additional technical information please call our toxicology department on +800 CHEMCALL.

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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