

# Material Safety Data Sheet

HAZARD WARNINGS	RISK PHRASES	PROTECTIVE CLOTHING
  	<p>Toxic compound, do not ingest or inhale. Avoid all contact with this material.</p> <p>Irritating to skin, eyes, and the respiratory system.</p> <p><b>CARCINOGEN. MINIMIZE EXPOSURE.</b></p> <p>Moisture sensitive material.</p>	   

## Section I. Chemical Product and Company Identification

Chemical Name	<b>Propane Sultone</b>		
Catalog Number	P0324	Supplier	TCI America 9211 N. Harborsgate St. Portland OR 1-800-423-8616
Synonym	1,2-Oxathiolane, 2,2-dioxide (CA INDEX NAME)		
Chemical Formula	C <sub>3</sub> H <sub>6</sub> O <sub>3</sub> S		
CAS Number	1120-71-4	In case of Emergency Call	<b>Chemtrec®</b> <b>(800) 424-9300 (U.S.)</b> <b>(703) 527-3887 (International)</b>

## Section II. Composition and Information on Ingredients

Chemical Name	CAS Number	Percent (%)	TLV/PEL	Toxicology Data
Propane Sultone	1120-71-4	Min. 99.0 (GC)	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.	Rat LD <sub>50</sub> (oral) 100 mg/kg Mouse LD <sub>50</sub> (oral) 400 mg/kg Rat LD <sub>50</sub> (intraperitoneal) 100 mg/kg

## Section III. Hazards Identification

Acute Health Effects	<p>Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.</p> <p>Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.</p>
Chronic Health Effects	<p><b>CARCINOGENIC EFFECTS</b> : Carcinogenic by RTECS criteria.</p> <p><b>MUTAGENIC EFFECTS</b> : Not available.</p> <p><b>TERATOGENIC EFFECTS</b> : Tumorigenic effects.</p> <p>Rat TD Oral 1100 mg/kg for 37 weeks intermittent</p> <p><b>TOXIC EFFECTS:</b></p> <p>Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Peripheral Nerve and Sensation - Peripheral nerve tumors Mouse TDLo Subcutaneous 756 mg/kg for 63 weeks intermittent</p> <p><b>TOXIC EFFECTS:</b></p> <p>Tumorigenic - Neoplastic by RTECS criteria Mouse TDLo Skin 1000 mg/kg</p> <p><b>TOXIC EFFECTS:</b></p> <p>Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Blood - Lymphomas including Hodgkin's disease</p> <p><b>DEVELOPMENTAL TOXICITY:</b> Reproductive effects.</p> <p>Rat TDLo Intravenous 80 mg/kg, female 15 days of pregnancy</p> <p><b>TOXIC EFFECTS:</b></p> <p>Effects on Embryo or Fetus - Fetal death</p> <p>Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.</p>

## Section IV. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
Inhalation	If the victim is not breathing, perform mouth-to-mouth resuscitation. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, oxygen can be administered. Seek medical attention if respiration problems do not improve.
Ingestion	INDUCE VOMITING by sticking finger in throat. Lower the head so that the vomit will not reenter the mouth and throat. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive.

**Section V. Fire and Explosion Data**

Flammability	May be combustible at high temperature.	Auto-Ignition	Not available.
Flash Points	158°C (316.4°F).	Flammable Limits	Not available.
Combustion Products	These products are toxic carbon oxides (CO, CO <sub>2</sub> ), sulfur oxides (SO <sub>x</sub> ).		
Fire Hazards	Not available.		
Explosion Hazards	Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.		
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet. Consult with local fire authorities before attempting large scale fire-fighting operations.		

**Section VI. Accidental Release Measures**

Spill Cleanup Instructions	Toxic material. Irritating material. Carcinogenic material. Moisture sensitive material. Stop leak if without risk. If the product is in its solid form: Use a shovel to put the material into a convenient waste disposal container. If the product is in its liquid form: DO NOT get water inside container. Absorb with an inert material and put the spilled material in an appropriate waste disposal. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Consult federal, state, and/or local authorities for assistance on disposal.
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**Section VII. Handling and Storage**

Handling and Storage Information	TOXIC. IRRITANT. CARCINOGEN. MOISTURE SENSITIVE. Keep locked up. Keep away from heat. Mechanical exhaust required. When not in use, tightly seal the container and store in a dry, cool place. Avoid excessive heat and light. DO NOT ingest. Do not breathe the dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Treat symptomatically and supportively. Always store away from incompatible compounds such as oxidizing agents, acids, alkalis (bases), moisture.
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**Section VIII. Exposure Controls/Personal Protection**

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Splash goggles. Lab coat. Dust respirator. Boots. Gloves. A MSHA/NIOSH approved respirator must be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
	
Exposure Limits	This chemical is classified as a carcinogen. There is no acceptable exposure limit for a carcinogen.

**Section IX. Physical and Chemical Properties**

Physical state @ 20°C	Solid. (White ~ light yellow, crystal ~ crystal lumps.)	Solubility	Soluble in ketones, aromatic hydrocarbons.
Specific Gravity	1.392 (water=1)		
Molecular Weight	122.14	Partition Coefficient	LOG P <sub>ow</sub> : -0.28
Boiling Point	180°C (356°F) @ 30 mmHg	Vapor Pressure	Not applicable.
Melting Point	32°C (89.6°F) (freezing point)	Vapor Density	Not available.
Refractive Index	Not available.	Volatility	Not available.
Critical Temperature	Not available.	Odor	Not available.
Viscosity	Not available.	Taste	Not available.

**Section X. Stability and Reactivity Data**

Stability	This material is stable if stored under proper conditions. (See Section VII for instructions)
Conditions of Instability	Avoid excessive heat and light. Moisture sensitive.
Incompatibilities	Reactive with oxidizing agents, acids, alkalis (bases), moisture. Reacts with humidity or water, toxic 3-hydroxy-1-propane sulfonic acid is produced.

**Section XI. Toxicological Information**

RTECS Number	RP5425000
Routes of Exposure	Eye Contact. Ingestion. Inhalation.
Toxicity Data	Rat LD <sub>50</sub> (oral) 100 mg/kg Mouse LD <sub>50</sub> (oral) 400 mg/kg Rat LD <sub>50</sub> (intraperitoneal) 100 mg/kg
Chronic Toxic Effects	<b>CARCINOGENIC EFFECTS</b> : Carcinogenic by RTECS criteria. <b>MUTAGENIC EFFECTS</b> : Not available. <b>TERATOGENIC EFFECTS</b> : Tumorigenic effects. Rat TD Oral 1100 mg/kg for 37 weeks intermittent <b>TOXIC EFFECTS:</b> Tumorigenic - Equivocal tumorigenic agent by RTECS criteria Peripheral Nerve and Sensation - Peripheral nerve tumors Mouse TDLo Subcutaneous 756 mg/kg for 63 weeks intermittent <b>TOXIC EFFECTS:</b> Tumorigenic - Neoplastic by RTECS criteria Mouse TDLo Skin 1000 mg/kg <b>TOXIC EFFECTS:</b> Tumorigenic - Carcinogenic by RTECS criteria Lung, Thorax, or Respiration - Tumors Blood - Lymphomas including Hodgkin's disease <b>DEVELOPMENTAL TOXICITY:</b> Reproductive effects. Rat TDLo Intravenous 80 mg/kg, female 15 days of pregnancy <b>TOXIC EFFECTS:</b> Effects on Embryo or Fetus - Fetal death Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Acute Toxic Effects	Toxic if ingested or inhaled. Avoid prolonged contact with this material. Overexposure may result in serious illness or death. Irritating to eyes and skin on contact. Inhalation causes irritation of the lungs and respiratory system. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Follow safe industrial hygiene practices and always wear proper protective equipment when handling this compound.

**Section XII. Ecological Information**

Ecotoxicity	Not available.
Environmental Fate	1,3-Propane sultone may be released to the environment as a result of its manufacture and use as a chemical intermediate. If 1,3-propane sultone is released to soil, it will be expected to rapidly hydrolyze if the soil is moist, based upon the rapid hydrolysis observed in aqueous solution. Since it rapidly hydrolyzes, adsorption to and volatilization from moist soil are not expected to be significant processes, although no data specifically regarding the fate of 1,3-propane sultone in soil were located. If released to water, it will be expected to rapidly hydrolyze, based upon a measured rate constant of $8.2 \times 10^{-2}$ hr <sup>-1</sup> for hydrolysis in aqueous solution at 25 deg C which corresponds to a half-life of 8.5 hr. The product of hydrolysis is 3-hydroxy-1-propanesulphonic acid. Since it rapidly hydrolyzes, bioconcentration, volatilization, and adsorption to sediment and suspended solids are not expected to be significant processes. No data were located concerning biodegradation, but 1,3-propane sultone will probably abiotically hydrolyze significantly faster than it biodegrades. If released to the atmosphere, it will be susceptible to photooxidation via vapor phase reaction with photochemically produced hydroxyl radicals with a half-life of 8 days estimated for this process. Exposure to 1,3-propane sultone will be primarily occupational.

**Section XIII. Disposal Considerations**

Waste Disposal	Recycle to process, if possible. Consult your local regional authorities. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. Observe all federal, state and local regulations when disposing of the substance.
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**Section XIV. Transport Information**

DOT Classification	DOT CLASS 6.1: Toxic material.
PIN Number	UN2811
Proper Shipping Name	Toxic solid, organic, n.o.s.
Packing Group (PG)	III RQ = 10 (4.54)
DOT Pictograms	

**Section XV. Other Regulatory Information and Pictograms**

TSCA Chemical Inventory (EPA)	This compound is <b>ON</b> the EPA Toxic Substances Control Act (TSCA) inventory list.
WHMIS Classification (Canada)	CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC). On DSL.
EINECS Number (EEC)	214-317-9
EEC Risk Statements	R23/24/25- Toxic by inhalation, in contact with skin and if swallowed. R36/37/38- Irritating to eyes, respiratory system and skin. R45- May cause cancer.
Japanese Regulatory Data	ENCS No. 5-530

**Section XVI. Other Information**

**Version 1.0**  
**Validated on 7/20/2009.**  
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**Notice to Reader**

TCI laboratory chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our MSDS sheets are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated MSDS sheets for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, facial mask, fume hood). For proper handling and disposal, always comply with federal, state, and local regulations.