

Safety Data Sheet

1. Chemical product and company identification

Product name : 1,3-Propane sultone

Company information

Name of manufacturer : KANTO CHEMICAL CO., INC.
 Address : 2-1, Nihonbashi, Muromachi 2-Chome, Chuo-Ku, Tokyo, 103-0022, JP
 Name of section : Business Administration Department, Reagent Division
 Telephone number : +81-3-6214-1090
 Facsimile number : +81-3-3241-1047
 Mail address : BC32@kanto.co.jp
 Reference No : 32729
 Recommended use : For research use only
 Restrictions on use : Seek expert judgment when using the product for applications other than those recommended.

2. Hazards identification

GHS classification

Health hazards	Acute toxicity (oral)	Category 3
	Acute toxicity (dermal)	Category 3
	Acute toxicity (inhalation:dust/mist)	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2A
	Germ cell mutagenicity	Category 2
	Carcinogenicity	Category 1B
	Specific target organ toxicity (single exposure)	Category 1 (systemic toxicity)
	Environmental hazards	Aquatic acute
Aquatic chronic		Category 3

Hazard pictograms



Signal word : Danger

Hazard statements : Toxic if swallowed or in contact with skin
 Causes skin irritation
 Causes serious eye irritation
 Harmful if inhaled
 Suspected of causing genetic defects
 May cause cancer
 Causes damage to organs (systemic toxicity)
 Harmful to aquatic life
 Harmful to aquatic life with long lasting effects



Precautionary statements

- Prevention : Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Wash hands, forearms and face thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.
- Response : IF SWALLOWED: Immediately call a POISON CENTER or doctor.
IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
IF exposed or concerned: Call a POISON CENTER or doctor.
IF exposed or concerned: Get medical advice/attention.
Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off immediately all contaminated clothing and wash it before reuse.
Take off contaminated clothing and wash it before reuse.
- Storage : Store locked up.
- Disposal : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

3. Composition/information on ingredients

Distinction of substance or mixture : Substance

Chemical name	Concentration (%)	Formula	TSCA	EC-No.	CAS RN
1,3-Propane sultone	≥ 98	C3H6O3S	Listed	214-317-9	1120-71-4

4. First aid measures**First aid measures**

- First-aid measures after inhalation : Remove the victim to fresh air, and make him blow his nose and gargle.
- First-aid measures after skin contact : Wash the affected areas under running water.
- First-aid measures after eye contact : Wash the affected areas under running water for at least 15 minutes. If necessary, get medical treatment.
- First-aid measures after ingestion : Give the victim water or salt water and make him vomit. Get medical attention.
- Personal Protection in First : Rescuers should wear proper protective equipment like rubber



Aid and Measures gloves, goggles.

5. Fire fighting measures

- Suitable extinguishing media : Water, dry chemical powder, carbon dioxide, dry sand, foam
- Unsuitable extinguishing media : None
- Firefighting instructions : Move containers from fire area if it can be done without risk, if not possible, apply water from a safe distance to cool and protect surrounding area.
- Dry chemical powder, carbon dioxide or dry sand should be used for small fires. Foam extinguisher is effective for a large scale fire.
- Personal protection (Emergency response) : Firefighters should wear protective equipment.

6. Accidental release measures

Personal Precautions, Protective Equipment and Emergency Procedures

- General measures : Wear proper protective equipment and avoid contact with skin and inhalation of dust. Conduct operations from upwind and evacuate people downwind.

Environmental precautions

- Environmental precautions : Attention should be given to avoid discharge of spilled product into rivers and resulting environmental damage. When diluting spill with large amounts of water, discharge of untreated wastewater into the environment must be avoided.

Methods and Equipment for Containment and Cleaning up

- For containment : Sweep up in a chemical waste container. Flush contaminated area with copious amounts of water.

7. Handling and storage

Handling

- Technical measures : Wear appropriate protective equipment to avoid contact with skin or inhalation of dust.
- Precautions for safe handling : Avoid formation of dust and aerosols.

Storage

- Storage conditions : Store in a dark, cool place and tightly closed.
- Material used in packaging/containers : Glass, fluorine resin.

8. Exposure controls / Personal protection equipment

ACGIH TWA	Not established
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- Appropriate engineering controls : Install a local ventilation system in case of dusty condition.

Protective equipment

- Respiratory protection : If necessary, wear dust mask
- Hand protection : Impervious protective gloves
- Eye protection : Safety goggles



Skin and body protection : Protective clothing, protective boots

9. Physical and chemical properties

Physical state : Solid
Color : Pale yellow - dark brown
Odor : Almost odorless
pH : No data available
Melting point : 31 ° C
Freezing point : No data available
Boiling point : No data available
Flash point : > 110 ° C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability : Flammable
Vapor pressure : No data available
Relative density : No data available
Density : 1.392 g/cm³ (25°C)
Relative gas density : No data available
Solubility : Water: 9 %
Partition coefficient n-octanol/water (log Pow) : No data available
Explosive limits (vol %) : No data available
Viscosity, kinematic : No data available
Particle characteristics : No data available

10. Stability and reactivity

Reactivity : May react with oxidizing substances.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Stable under normal conditions of use.
Conditions to avoid : Light, heat.
Incompatible materials : Oxidizing substances.
Hazardous decomposition products : Carbon monoxide, sulfur oxides.

11. Toxicological information

Acute toxicity (oral) : Toxic if swallowed
rat LD50=100mg/kg
Acute toxicity (dermal) : Toxic in contact with skin
rabbit LD50=660mg/kg
Acute toxicity (inhalation) : No classification (gas)
Classification not possible (vapor)
Harmful if inhaled (dust, mist)
rat LC50=1.95-3.21mg/L/4h



Skin corrosion/irritation	: Causes skin irritation This substance was reported to be irritating to the skin in both humans and animals. In an in-vitro skin corrosion test according to OECD TG 431 (in vitro membrane barrier test), it was judged as not corrosive. Thus, it was classified into category 2.
Serious eye damage/irritation	: Causes serious eye irritation In an eye irritation test in which this substance (one drop) was applied to the rabbit eye, conjunctivitis and corneal opacity were observed at 24-72 hours after application, and edema reversed, but conjunctival erythema and corneal opacity were not reversed at 14 days after application. Thus, it was classified into category 2A.
Respiratory sensitization	: Classification not possible
Skin sensitization	: No classification In a guinea pig skin sensitization test equivalent to OECD TG 406 (Buehler test, application concentration 1%), no skin reactions were observed, and it was judged as negative for skin sensitization. In a guinea pig skin sensitization test equivalent to OECD TG 406 (maximization test, intradermal administration 1%), no skin reactions were observed, and it was judged as negative for skin sensitization.
Germ cell mutagenicity	: Suspected of causing genetic defects As for in vivo, it was reported to be positive in micronucleus tests with peripheral blood after intraperitoneal or oral administration to mice. And it is reported that it induced DNA strand breaks in brain cells after intravenous administration to rats. As for in vitro, it was reported to be positive in a bacterial reverse mutation test, and a chromosomal aberration test and a sister chromatid exchange test using cultured mammalian cells in the absence of metabolic activation. Thus, it was classified into category 2.
Carcinogenicity	: May cause cancer Among classification results, the latest classification by IARC and the Japan Society for Occupational Health was group 2A. Therefore, it was classified into category 1B.
Reproductive toxicity	: Classification not possible
STOT-single exposure	: Causes damage to organs (systemic toxicity) Acute intoxication of experimental animals by this substance was characterized by early apathy, progressive dyspnea, bloody diarrhea, tremor and spasms. Depending on the dose, death occurred between 6 hours and several days after treatment with this substance. It was reported that a pathological examination revealed hemorrhagic pulmonary edema, severe intestinal bleeding and cerebral edema. In addition, it was reported that this substance was highly cytotoxic and could cause necrosis. In an acute oral toxicity test of this substance with rats, the LD50 values (oral: 100 to 157 mg/kg, dermal: 157 mg/kg) were reported although there was no description of the minimal dose at which effects were observed. In experimental animals, the minimum dose at which effects were observed was not described, and it was assumed that effects were observed at least around the LD50 values (oral: 100 to 157 mg/kg, dermal: 157 mg/kg, within the range for category 1). Therefore, it was classified into category 1 (systemic toxicity).
STOT-repeated exposure	: Classification not possible
Aspiration hazard	: Classification not possible



12. Ecological information

Ecotoxicity

Aquatic acute : Harmful to aquatic life
Daphnia magna EC50=16mg/L/48h

Aquatic chronic : Harmful to aquatic life with long lasting effects

Persistence and degradability

Readily biodegradable

BOD : 95%

Bioaccumulative potential

No additional information available

Mobility in soil

No additional information available

Hazardous to the ozone layer

Ozone : Classification not possible

13. Disposal considerations

Ecological waste information : Mixed with flammable organic solvents and burn in a chemical incinerator equipped with an afterburner and a scrubber. Or entrust approved waste disposal companies with the disposal.

Contaminated container and packaging : In case of disposal of empty bottles, dispose bottles after removing the content thoroughly.

14. Transport information

International Regulations

Transport by sea(IMDG)

UN-No. (IMDG) : 2811

Proper Shipping Name (IMDG) : TOXIC SOLID, ORGANIC, N.O.S.

Packing group (IMDG) : III

Transport hazard class(es) (IMDG) : 6.1

Air transport(IATA)

UN-No. (IATA) : 2811

Proper Shipping Name (IATA) : Toxic solid, organic, n.o.s.

Packing group (IATA) : III

Transport hazard class(es) (IATA) : 6.1

Marine pollutant : Not applicable

MFAG-No : 154

15. Regulatory information

Regulatory information with regard to this substance in your country or region should be examined by your own responsibility.

16. Other information

Data sources : Dictionary of Organic Compounds, The society of Synthetic Organic Chemistry, Kodansha Ltd. (1985) .



NITE Chemical Risk Information Platform (NITE-CHRIP), National
Institute of Technology and Evaluation.

The information contained herein is based on several references and the present state of our knowledge. However the SDS does not always cover all information about the product, handle the product carefully. The information is intended to ordinary usage, in case of particular handlings, conduct appropriate safety measurements. The information herein is only provision of information, and it does not represent a guarantee the properties of the product. The Safety Data Sheet (SDS) is prepared based on JIS Z7253.

