

SAFETY DATA SHEET

Revision Date 24-Dec-2021

Revision Number 5

1. Identification

Product Name (2S)-(+)-Glycidyl tosylate

Cat No. : AC264580000; AC264580010; AC264580050; AC264580250

CAS No 70987-78-9

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99
CHEMTREC Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|-----------------------------------|-------------|
| Serious Eye Damage/Eye Irritation | Category 1 |
| Skin Sensitization | Category 1 |
| Germ Cell Mutagenicity | Category 2 |
| Carcinogenicity | Category 1B |

Label Elements

Signal Word

Danger

Hazard Statements

May cause an allergic skin reaction
Causes serious eye damage

Suspected of causing genetic defects
May cause cancer



Precautionary Statements

Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Avoid breathing dust/fume/gas/mist/vapors/spray
Contaminated work clothing should not be allowed out of the workplace
Wear protective gloves

Response

IF exposed or concerned: Get medical attention/advice

Skin

IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician

Storage

Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Toxic to aquatic life with long lasting effects

3. Composition/Information on Ingredients

| Component | CAS No | Weight % |
|--|------------|----------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | >95 |

4. First-aid measures

General Advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

Eye Contact

Keep eye wide open while rinsing. Call a physician immediately. Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician. If symptoms persist, call a physician.

Skin Contact

Consult a physician if necessary. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation

Immediate medical attention is required. Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

| | |
|--|---|
| Ingestion | Call a physician or poison control center immediately. Never give anything by mouth to an unconscious person. Drink plenty of water. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. |
| Most important symptoms and effects | Causes eye burns. May cause allergic skin reaction. Causes severe eye damage. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing |
| Notes to Physician | Treat symptomatically |

5. Fire-fighting measures

| | |
|---|--|
| Suitable Extinguishing Media | Water spray. Carbon dioxide (CO ₂). Dry chemical. Chemical foam. |
| Unsuitable Extinguishing Media | No information available |
| Flash Point | > 110 °C / > 230 °F |
| Method - | No information available |
| Autoignition Temperature | 346 °C / 654.8 °F |
| Explosion Limits | |
| Upper | No data available |
| Lower | No data available |
| Sensitivity to Mechanical Impact | No information available |
| Sensitivity to Static Discharge | No information available |

Specific Hazards Arising from the Chemical

Thermal decomposition can lead to release of irritating gases and vapors. In the event of fire and/or explosion do not breathe fumes. Contact with metals may evolve flammable gas.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Sulfur oxides.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health
2

Flammability
1

Instability
0

Physical hazards
N/A

6. Accidental release measures

| | |
|---|---|
| Personal Precautions | Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. |
| Environmental Precautions | Do not flush into surface water or sanitary sewer system. |
| Methods for Containment and Clean Up | Wear self-contained breathing apparatus and protective suit. Sweep up and shovel into suitable containers for disposal. Do not let this chemical enter the environment. |

7. Handling and storage

| | |
|-----------------|--|
| Handling | Do not breathe dust. Do not get in eyes, on skin, or on clothing. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Avoid contact with skin. Avoid contact with skin and eyes. Pay attention to flashback. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Ensure adequate ventilation. |
| Storage. | Keep refrigerated. Keep container tightly closed in a dry and well-ventilated place. Keep in a banded area. Incompatible Materials. Strong oxidizing agents. Strong acids. Bases. |

8. Exposure controls / personal protection

| | |
|--------------------------------------|---|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering Measures | Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. |
| Personal Protective Equipment | |
| Eye/face Protection | Tight sealing safety goggles. |
| Skin and body protection | Impervious gloves. Impervious clothing. |
| Respiratory Protection | Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. |
| Hygiene Measures | When using do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing. Avoid contact with skin, eyes or clothing. Wash hands before breaks and immediately after handling the product. Keep away from food, drink and animal feeding stuffs. |

9. Physical and chemical properties

| | |
|---|-----------------------------|
| Physical State | Powder Solid |
| Appearance | White |
| Odor | No information available |
| Odor Threshold | No information available |
| pH | ca 3.5 saturated sol |
| Melting Point/Range | 45 - 48 °C / 113 - 118.4 °F |
| Boiling Point/Range | No information available |
| Flash Point | > 110 °C / > 230 °F |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available |
| Vapor Density | Not applicable |
| Specific Gravity | No information available |
| Solubility | No information available |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 346 °C / 654.8 °F |
| Decomposition Temperature | No information available |
| Viscosity | Not applicable |
| Molecular Formula | C10 H12 O4 S |
| Molecular Weight | 228.27 |

10. Stability and reactivity

| | |
|----------------------------|--|
| Reactive Hazard | None known, based on information available |
| Stability | Moisture sensitive. |
| Conditions to Avoid | Incompatible products. Exposure to moist air or water. |

Incompatible Materials Strong oxidizing agents, Strong acids, Bases

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO₂), Sulfur oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|--|-------------------|-------------------|-----------------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | >5000 mg/kg (Rat) | >2000 mg/kg (Rat) | Not listed |

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact

Carcinogenicity May cause cancer. The table below indicates whether each agency has listed any ingredient as a carcinogen.

| Component | CAS No | IARC | NTP | ACGIH | OSHA | Mexico |
|--|------------|------------|------------|------------|------------|------------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects Possible risk of irreversible effects

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects, both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|--|------------------|------------------------------------|------------|--------------------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | Not listed | LC50: 4.2 mg/L/96h (Rainbow Trout) | Not listed | EC50: 2.0 mg/L/48h |

Persistence and Degradability Persistence is unlikely

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its water solubility.

| Component | log Pow |
|--|---------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 1.45 |

13. Disposal considerations

Waste Disposal Methods Should not be released into the environment.

14. Transport information

DOT

UN-No UN3077
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
 Technical Name Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+)
 Hazard Class 9
 Packing Group III

TDG

UN-No UN3077
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
 Hazard Class 9
 Packing Group III

IATA

UN-No UN3077
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
 Hazard Class 9
 Packing Group III

IMDG/IMO

UN-No UN3077
 Proper Shipping Name Environmentally hazardous substances, solid, n.o.s.
 Hazard Class 9
 Packing Group III

15. Regulatory information

United States of America Inventory

| Component | CAS No | TSCA | TSCA Inventory notification - Active-Inactive | TSCA - EPA Regulatory Flags |
|--|------------|------|---|-----------------------------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | - | - | - |

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories

Canada (DSL/NDL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

| Component | CAS No | DSL | NDL | EINECS | PICCS | ENCS | ISHL | AICS | IECSC | KECL |
|--|------------|-----|-----|--------|-------|------|------|------|-------|------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | - | - | - | X | - | | - | - | - |

KECL - NIER number or KE number (<http://ncis.nier.go.kr/en/main.do>)

U.S. Federal Regulations

| | |
|---|---|
| SARA 313 | Not applicable |
| SARA 311/312 Hazard Categories | See section 2 for more information |
| CWA (Clean Water Act) | Not applicable |
| Clean Air Act | Not applicable |
| OSHA - Occupational Safety and Health Administration | Not applicable |
| CERCLA | Not applicable |
| California Proposition 65 | This product does not contain any Proposition 65 chemicals. |
| U.S. State Right-to-Know Regulations | Not applicable |

U.S. Department of Transportation

| | |
|-----------------------------|---|
| Reportable Quantity (RQ): | N |
| DOT Marine Pollutant | N |
| DOT Severe Marine Pollutant | N |

| | |
|---|--|
| U.S. Department of Homeland Security | This product does not contain any DHS chemicals. |
|---|--|

Other International Regulations

| | |
|-----------------------|----------------------|
| Mexico - Grade | Slight risk, Grade 1 |
|-----------------------|----------------------|

Authorisation/Restrictions according to EU REACH

| Component | REACH (1907/2006) - Annex XIV - Substances Subject to Authorization | REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances | REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC) |
|--|---|--|---|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | - | Use restricted. See item 28. (see link for restriction details) Use restricted. See item 75. (see link for restriction details) | - |

<https://echa.europa.eu/substances-restricted-under-reach>

Safety, health and environmental regulations/legislation specific for the substance or mixture

| Component | CAS No | OECD HPV | Persistent Organic Pollutant | Ozone Depletion Potential | Restriction of Hazardous Substances (RoHS) |
|--|------------|----------------|------------------------------|---------------------------|--|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | Not applicable | Not applicable | Not applicable | Not applicable |

| Component | CAS No | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification | Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements | Rotterdam Convention (PIC) | Basel Convention (Hazardous Waste) |
|--|------------|---|--|----------------------------|------------------------------------|
| Toluene-4-sulfonate, 2,3-epoxypropyl, (2S)-(+) | 70987-78-9 | Not applicable | Not applicable | Not applicable | Not applicable |

16. Other information

| | |
|-------------------------|---|
| Prepared By | Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com |
| Revision Date | 24-Dec-2021 |
| Print Date | 24-Dec-2021 |
| Revision Summary | This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS). |

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS