

河北言希化工有限公司

Hebei Yanxi Chemical Co., Ltd

MATERIAL SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) – Sixth revised edition

Version: 1.0

Creation Date: Aug 14, 2017

Revision Date: Aug 14, 2017

1. Identification

1.1 GHS Product identifier

Product name	thioglycolic acid
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1.2 Other means of identification

Product number	-
Other names	Thiovanic acid

Identified uses	For industry use only. Corrosion inhibitors and anti-scaling agents, Intermediates
Uses advised against	no data available

1.3 Recommended use of the chemical and restrictions on use

1.4 Supplier's details

Company	HEBEI YANXI CHEMICAL Co., Ltd.
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Hebei Yanxi Chemical Co., Ltd

Address	Floor 4 & 5, Building 12, No. 1001 North Qinzhou Road, Shijiazhuang, Hebei China
Telephone	+86 (0311) 64956998
Fax	+86 (0311) 54365166

1.5 Emergency phone number

Emergency phone number	+86-400-6021-666
Service hours	Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

2. Hazard identification

2.1 Classification of the substance or mixture


Acute toxicity - Oral, Category 3

Acute toxicity - Dermal, Category 3

Skin corrosion, Category 1B

Acute toxicity - Inhalation, Category 3

2.2 GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Danger
Hazard statement(s)	H301 Toxic if swallowed H311 Toxic in contact with skin

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	<p>H314 Causes severe skin burns and eye damage</p> <p>H331 Toxic if inhaled</p>
Precautionary statement (s)	
Prevention	<p>P264 Wash ... thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P280 Wear protective gloves/protective clothing/eye protection/face protection.</p> <p>P260 Do not breathe dust/fume/gas/mist/vapours/spray.</p> <p>P261 Avoid breathing dust/fume/gas/mist/vapours/spray.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p>
Response	<p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/...</p> <p>P321 Specific treatment (see ... on this label).</p> <p>P330 Rinse mouth.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water/...</p> <p>P312 Call a POISON CENTER/doctor/...if you feel unwell.</p> <p>P361+P364 Take off immediately all contaminated clothing and wash it before reuse.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p>

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	P310 Immediately call a POISON CENTER/doctor/... P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P311 Call a POISON CENTER/doctor/...
Storage	P405 Store locked up. P403+P233 Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to ...

2.3 Other hazards which do not result in classification

none

3. Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
thioglycolic acid	thioglycolic acid	68-11-1	none	100%

4. First-aid measures

4.1 Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

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Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention. See Notes.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention .

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth. Do NOT induce vomiting. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

/SRP:/ Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. /Organic acids and related compounds/

5. Fire-fighting measures

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5.1 Extinguishing media

Suitable extinguishing media

Wear self contained breathing apparatus for fire fighting if necessary.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]:
Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Ventilation. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

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6.3 Methods and materials for containment and cleaning up

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong oxidants, strong bases, food and feedstuffs and combustible substances. Keep in a well-ventilated room. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Recommended storage temperature: -20°C

8. Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

Recommended Exposure Limit: 10 Hour Time-Weighted Average: 1 ppm (4 mg/cu m), skin.

Biological limit values

no data available

8.2 Appropriate engineering controls

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Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique(without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9. Physical and chemical properties

Physical state	Clear liquid
Colour	Colorless liquid
Odour	Strong, unpleasant odor
Melting point/ freezing point	224° C(dec.)(lit.)
Boiling point or initial	96° C/5mmHg(lit.)

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boiling point and boiling range	
Flammability	Class IIIB Combustible Liquid: Fl.P. at or above 93.33° C. Combustible. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	Lower flammable limit: 5.9% by volume
Flash point	130° C
Auto-ignition temperature	350° C
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	6.55 mPa.s (= cP) at 20° C
Solubility	In water:soluble
Partition coefficient n-octanol/water (log value)	log Kow = 0.09
Vapour pressure	0.4 mm Hg (25 ° C)
Density and/or relative density	1.326g/mL at 20° C (lit.)
Relative vapour density	3.2 (vs air)
Particle characteristics	no data available

10. Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

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THIOGLYCOLIC ACID is readily oxidized by air . Reacts readily with other oxidizing agents as well in reactions that may generate toxic gases. Incompatible with diazo and azo compounds, halocarbons, isocyanates, aldehydes, alkali metals, nitrides, hydrides, and other strong reducing agents. Reactions with these materials may generate heat and toxic and flammable gases. May react with acids to liberate hydrogen sulfide. Neutralizes bases in exothermic reactions. Reacts with cyanides, sulfites, nitrites, thiosulfates to generate flammable and toxic gases and heat. Reacts with carbonates and bicarbonates.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products

When heated to decomp it emits toxic fumes of /sulfur oxides/.

11. Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 114 mg/kg
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

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Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12. Ecological information

12.1 Toxicity

- Toxicity to fish: LC50; Species: Pimephales promelas (Fathead Minnow); Conditions: freshwater, static, 17°C, pH 7.0-7.3, alkalinity 50-70 mg/L CaCO₃, dissolved oxygen 7-8 mg/L; Concentration: 30000 ug/L for 96 hr /formulated product
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: Mercaptoacetic acid, present at 100 mg/L, reached 100% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L in the Japanese MITI(1). After 34 days acclimation in a laboratory model river inoculated with synthetic wastewater, mercaptoacetic acid was observed to biodegrade following

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sequencing stages of adaptation(2). Closed Bottle tests using an activated sludge seed indicated 67% biodegradation of mercaptoacetic acid after 28 days(3). In 7 aerobic Closed Bottle screening tests using sewage and soil as inoculum, none reached the pass level of >60% BODT after 28 days; in 16 OECD screening tests 13% of the tests reached the pass level of >70% DOC following 28 days incubation in a sewage and soil inoculum; in 2 sets of aerobic Japanese MITI screening tests using activated sludge seeds, 6 out of 10 and 4 out of 10 reached the pass level of >60% BODT after 14 days incubation; in five Sturm CO₂ Evolution screening tests using a sewage seed, 60% reached the pass level of >60% CO₂; and in six Zahn-Wellens screening tests using an activated sludge seed 67% reached the pass level of >70% DOC removal(4). Mercaptoacetic acid was categorized as intermediate in biodegradability following respirometric tests using an activated sludge seed(5).

12.3 Bioaccumulative potential

A pKa of 3.55(1) indicates mercaptoacetic acid will exist almost entirely in the anion form at pH values of 5 to 9 and, therefore, bioconcentration is not expected to be an important environmental fate process(SRC).

12.4 Mobility in soil

Using a structure estimation method based on molecular connectivity indices(1), the Koc of mercaptoacetic acid can be estimated to be 1.4(SRC). According to a classification scheme(2), this estimated Koc value suggests that mercaptoacetic acid is expected to have very high mobility in soil. The pKa of mercaptoacetic acid is 3.55(3), indicating that this compound will exist almost entirely in the anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(4).

12.5 Other adverse effects

no data available

13. Disposal considerations

13.1 Disposal methods

Product

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The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. Transport information

14.1 UN Number

ADR/RID: UN1940	IMDG: UN1940	IATA: UN1940
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14.2 UN Proper Shipping Name

ADR/RID: THIOGLYCOLIC ACID
IMDG: THIOGLYCOLIC ACID
IATA: THIOGLYCOLIC ACID

14.3 Transport hazard class(es)

ADR/RID: 8	IMDG: 8	IATA: 8
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14.4 Packing group, if applicable

ADR/RID: II	IMDG: II	IATA: II
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14.5 Environmental hazards

ADR/RID: no	IMDG: no	IATA: no
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14.6 Special precautions for user

no data available

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15. Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
thioglycolic acid	thioglycolic acid	68-11-1	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.

16. Other information

Information on revision

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Creation Date	Aug 12, 2017
Revision Date	Aug 12, 2017

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the

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properties of the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.