

SAFETY DATA SHEET

Preparation Date: 3/21/2017

Revision Date: 3/21/2017

Revision Number: G1

1. IDENTIFICATION

Product identifier

Product code: T2082
Product Name: 2,2'-THIODIETHANOL

Other means of identification

Synonyms: beta,beta'-Dihydroxyethyl sulfide
 Bis(beta-hydroxyethyl)sulfide
 Bis(2-hydroxyethyl)sulfide
 beta,beta'-Dihydroxydiethyl sulfide
 beta-Hydroxyethyl sulfide
 Thiodiglycol

CAS #: 111-48-8
RTECS # KM2975000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemical Mfg. Corp
 14422 South San Pedro St.
 Gardena, CA 90248
 (310) 516-8000.

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300

Contact Person: Martin LaBenz (West Coast)

Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Serious eye damage/eye irritation	Category 2B
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Label elements

Warning

Hazard statements
 Causes eye irritation

Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if inhaled

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
2,2'-Thiodiethanol	111-48-8	100

4. FIRST AID MEASURES**First aid measures**

General Advice:	National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.
Skin Contact:	Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops.
Eye Contact:	Flush eyes with water for 15 minutes. Get medical attention.
Inhalation:	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms	Mild skin irritation. Mild to moderate eye irritation. Ingestion may cause nausea, vomiting, and diarrhea. Mildly irritating to the respiratory tract. Coughing. Lacrimation. Central nervous system effects. Somnolence. It may affect the kidneys.
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Indication of any immediate medical attention and special treatment needed

Notes to Physician:	Treat symptomatically.
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Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES**Extinguishing Media**

Suitable Extinguishing Media:	Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.
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Unsuitable Extinguishing Media:	No information available.
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Specific hazards arising from the chemical

Product code: T2082

Product name:
2,2'-THIODIETHANOL

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Hazardous Combustion Products:	Carbon Dioxide, Carbon Monoxide. Sulfur Oxides.
Specific hazards:	May be combustible at high temperatures. May be ignited by heat, sparks or flames.
<u>Special Protective Actions for Firefighters</u>	
Specific Methods:	No information available.
Special Protective Equipment for Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions:	Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes and clothing. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.
<u>Environmental precautions</u>	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment	Stop leak if you can do it without risk. Absorb spill with inert material (e.g. vermiculite, dry sand or earth).
Methods for cleaning up	Use appropriate tools to put the spilled material in a suitable chemical waste disposal container. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Use only in area provided with appropriate exhaust ventilation. Remove all sources of ignition. All equipment used when handling the product must be grounded. Keep away from incompatible materials.

Safe Handling Advice

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Use only in well-ventilated areas. Keep away from heat and sources of ignition. Do not breathe vapors or spray mist. Do not ingest. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Acids
Oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WHEEL
2,2'-Thiodiethanol	111-48-8	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
2,2'-Thiodiethanol	111-48-8	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
2,2'-Thiodiethanol	111-48-8	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors and mist below their respective threshold limit value.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles

Skin and body protection: Gloves
Long sleeved clothing
Chemical resistant apron

Respiratory protection: Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:

Liquid

Appearance:

No information available.

Color:

Colorless to pale yellow.

Odor:

Stench.

Taste

No information available.

Formula:

C4H10O2S

Molecular/Formula weight:

122.18

Flammability:

No information available

Flashpoint (°C/°F):

113-160 °C/235-320 °F

Flash Point Tested according to:

Not available

Autoignition Temperature (°C/°F):

260-298 °C/500-568 °F

Lower Explosion Limit (%):

1.2

Upper Explosion Limit (%):

5.2

Melting point/range(°C/°F):

-16 to -10 °C/3.2 to 14 °F

Decomposition temperature(°C/°F):

No information available

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Product name:
2,2'-THIODIETHANOL

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Boiling point/range(°C/°F):
282 °C/539.6 °F

Bulk density:
No information available

Density (g/cm³):
No information available

Specific gravity:
1.1793-1.812

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
4.21

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

**Partition coefficient
(n-octanol/water):**
Log Kow = -0.63

Viscosity:
No information available

Miscibility:
Miscible with Ethanol
Miscible with water
Miscible with Chloroform
Miscible with Ethyl Acetate

Solubility:
Soluble in Ether
Slightly soluble in Benzene

10. STABILITY AND REACTIVITY

Reactivity

Reacts with acids to form hydrogen sulfide
Reacts with strong oxidants to produce hydrogen sulfide

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials.

Incompatible Materials: Acids
Oxidizing agents

Hazardous decomposition products: No information available.

Other Information

Corrosivity: No information available

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Inhalation. Ingestion. Skin.

Acute Toxicity

The following values are calculated based on chapter 3.1 of the GHS document
Component Information

2,2'-Thiodiethanol	
CAS-No.	111-48-8

Product code: T2082

Product name:
2,2'-THIODIETHANOL

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LD50/oral/rat = = 6610 mg/kg Oral LD50 Rat
LD50/oral/mouse = No information available
LD50/dermal/rabbit = 23600 mg/kg
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50 information = 3950 mg/kg oral LD50 Guinea Pig

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 6610 mg/kg

LD50/oral/mouse =
Value - Acute Tox Oral = No information available

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = 23600 mg/kg

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Mild skin irritation.

Eye Contact: Mild to moderate eye irritation. Redness and pain. Causes lacrimation.

Inhalation Mildly irritating to the respiratory tract. May cause coughing. May cause redness and pain of the eyes. Causes lacrimation. May cause nausea. May cause central nervous system effects, central nervous system depression.

Ingestion Ingestion may cause nausea, vomiting, diarrhea. May affect behavior/central nervous system (somnolence). May affect urinary system (kidneys).

Aspiration hazard No information available.

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

Chronic Toxicity No information available.

Sensitization: No information available.

Mutagenic Effects: Cytogenic analysis - hamster ovary

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
2,2'-Thiodiethanol	111-48-8	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

OSHA (Occupational Safety and Health Administration of the US Department of Labor)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure No information available.
STOT - repeated exposure No information available.
Target Organs: No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

2,2'-Thiodiethanol - 111-48-8

Freshwater Algae Data: 500 mg/L EC50 Desmodesmus subspicatus 72 h
Freshwater Fish Species Data: 10000 mg/L LC50 Leuciscus idus 96 h static 1
Water Flea Data: 500 mg/L EC50 Daphnia magna 48 h

Persistence and degradability: No information available

Bioaccumulative potential: Potential for bioconcentration in aquatic organisms is low.

Mobility: It is expected to have very high mobility based on estimated Koc.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
2,2'-Thiodiethanol	111-48-8	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Class: No information available
Packing group: No information available
Emergency Response Guide Number: 171
Marine Pollutant: No data available
DOT RQ (lbs): No information available
Special Provisions: A35, A189
Symbol(s): [DOT]: (G) - Identifies proper shipping names for which one or more technical names of the hazardous material must be entered in parentheses, in association with the basic description. [DOT]: (A) - Denotes a material that is subject to the requirements of this subchapter only when offered or intended for transportation by aircraft, unless the material is a hazardous substance or hazardous waste.

Description: UN3334, Aviation regulated liquid, n.o.s., 9

TDG (Canada)

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No Information available
Description: UN3334, Aviation regulated liquid, n.o.s., 9

ADR

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Packing Group: No information available
Subsidiary Risk: No information available
Description: UN3334, Aviation regulated liquid, n.o.s., 9

IMO / IMDG

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant: No information available
Special Provisions: 960
Description: UN3334, Aviation regulated liquid, n.o.s., 9

RID

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: No information available
Description: UN3334, Aviation regulated liquid, n.o.s., 9

ICAO

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III

Description: UN3334, Aviation regulated liquid, n.o.s., 9, III
Special Provisions A27

IATA

UN-No: UN3334
Proper Shipping Name: Aviation regulated liquid, n.o.s. (thiodiglycol)
Hazard Class: 9
Subsidiary Risk: No information available
Packing Group: III
ERG Code: 9A
Special Provisions No information available
Description: UN3334, Aviation regulated liquid, n.o.s., 9, III

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
2,2'-Thiodiethanol	111-48-8	Present	Present KE-33763	Present	Present (2)-470	Present	Present	Present 203-874-3

U.S. Regulations

2,2'-Thiodiethanol

Massachusetts RTK: Present
Pennsylvania RTK: Present

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
2,2'-Thiodiethanol	111-48-8	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
2,2'-Thiodiethanol	111-48-8	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
2,2'-Thiodiethanol	111-48-8	Not Applicable	Not Applicable

Canada

WHMIS hazard class:
D2B Toxic materials

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
2,2'-Thiodiethanol	111-48-8	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
2,2'-Thiodiethanol	111-48-8	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
2,2'-Thiodiethanol	111-48-8	Not listed

EU Classification**R-phrases)**

R36 - Irritating to eyes.

S -phrase(s)

S 2 - Keep out of the reach of children.

Components	CAS-No.	Classification	Concentration Limits:	Safety Phrases
2,2'-Thiodiethanol	111-48-8	Xi; R36	No information	S2

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xi - Irritant.

Xi

**16. OTHER INFORMATION**

Preparation Date: 3/21/2017
 Revision Date: 3/21/2017
 Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on

technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet