



# MATERIAL SAFETY DATA SHEET

according to the Global Harmonized System

Date of issue: 02/04/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number 807532  
Product name 2-Propanethiol for synthesis

### Relevant identified uses of the substance or mixture and uses advised against

Identified uses Chemical for synthesis

### Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821,  
United States of America | SDS Phone Support: +1-978-715-1335 |  
General Inquiries: +1-978-751-4321 | Monday to Friday, 9:00 AM to  
4:00 PM Eastern Time (GMT-5)  
  
e-mail: mm\_sds@merckgroup.com

Emergency telephone 613-996-6666 CANUTEC (Canada)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Flammable liquid, Category 2, H225  
Eye irritation, Category 2, H319  
Acute aquatic toxicity, Category 1, H400  
Chronic aquatic toxicity, Category 1, H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*



*Signal Word*  
Danger

*Hazard Statements*  
H225 Highly flammable liquid and vapor.

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H319 Causes serious eye irritation.  
H410 Very toxic to aquatic life with long lasting effects.

*Precautionary Statements*

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P273 Avoid release to the environment.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Other hazards**

None known.

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**SECTION 3. Composition/information on ingredients**

Formula	(CH <sub>3</sub> ) <sub>2</sub> CHSH	C <sub>3</sub> H <sub>8</sub> S (Hill)
CAS-No.	75-33-2	
Molar mass	76.16 g/mol	

**Hazardous ingredients**

*Chemical Name (Concentration)*

CAS-No.

*propane-2-thiol (>= 90 % - <= 100 % )*

75-33-2

*propane-1-thiol (>= 1 % - < 5 % )*

107-03-9

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**SECTION 4. First aid measures**

**Description of first-aid measures**

*Inhalation*

After inhalation: fresh air.

*Skin contact*

After skin contact: wash off with plenty of water. Remove contaminated clothing.

*Eye contact*

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

*Ingestion*

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

**Most important symptoms and effects, both acute and delayed**

irritant effects, Cough, Shortness of breath, respiratory arrest, Unconsciousness, Nausea, Vomiting, Headache, Convulsions

**Indication of any immediate medical attention and special treatment needed**

No information available.

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**SECTION 5. Fire-fighting measures**

**Extinguishing media**

*Suitable extinguishing media*

Carbon dioxide (CO<sub>2</sub>), Foam, Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

**Special hazards arising from the substance or mixture**

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at ambient temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Sulfur oxides, hydrogen sulfide

**Advice for firefighters**

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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**SECTION 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

**Environmental precautions**

Do not empty into drains. Risk of explosion.

**Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

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**SECTION 7. Handling and storage**

**Precautions for safe handling**

Observe label precautions.

*Advice on protection against fire and explosion*

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

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**Conditions for safe storage, including any incompatibilities**

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C (+59°F to +77°F).

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**SECTION 8. Exposure controls/personal protection**

**Exposure limit(s)**

Contains no substances with occupational exposure limit values.

**Engineering measures**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

**Individual protection measures**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Change contaminated clothing. Application of skin- protective barrier cream recommended.  
Wash hands after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

*Other protective equipment:*

Flame retardant antistatic protective clothing

*Respiratory protection*

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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**SECTION 9. Physical and chemical properties**

Physical state	liquid
Color	colorless
Odor	malodorous
Odor Threshold	No information available.
pH	No information available.
Melting point	-130 °C

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Boiling point/boiling range	124 - 127 °F (51 - 53 °C) at 1,013 hPa
Flash point	-29 °F (-34 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	605 hPa at 99 °F (37 °C)
Relative vapor density	2.62
Relative density	0.81 g/cm <sup>3</sup> at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) slightly soluble
Partition coefficient: n-octanol/water	log Pow: 1.68 (calculated) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	824 °F (440 °C)
Viscosity, dynamic	0.369 mPa.s at 68 °F (20 °C)
Explosive properties	No information available.

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**SECTION 10. Stability and reactivity**

**Reactivity**

Vapors may form explosive mixture with air.

**Chemical stability**

sensitive to moisture

**Possibility of hazardous reactions**

Violent reactions possible with:

Strong oxidizing agents, strong reducing agents, Bases, Alkali metals, Alkaline earth metals, acids

Risk of explosion with:

calcium hypochlorite

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**Conditions to avoid**

Warming.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

**Incompatible materials**

no information available

**Hazardous decomposition products**

in the event of fire: See section 5.

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**SECTION 11. Toxicological information**

**Information on toxicological effects**

*Likely route of exposure*

Eye contact, Skin contact

*Acute oral toxicity*

LD50 rat: > 2,000 mg/kg (External MSDS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

*Acute inhalation toxicity*

LC50 rat: > 12.3 mg/l; 4 h (External MSDS)

Symptoms: Possible damages: mucosal irritations, Lung edema, The substance has delayed effects.

*Eye irritation*

Causes serious eye irritation.

*Genotoxicity in vitro*

Ames test

Salmonella typhimurium

Result: negative

(National Toxicology Program)

*Specific target organ systemic toxicity - single exposure*

The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*

Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen

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ACGIH by NTP.  
No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

**Further information**

Systemic effects:

Headache, Nausea, Vomiting, Shortness of breath, Unconsciousness, Convulsions, respiratory arrest

Other information

The following applies to mercaptans in general: offensive odor.

Further data:

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

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**SECTION 12. Ecological information**

**Ecotoxicity**

*Toxicity to daphnia and other aquatic invertebrates*

EC50 Daphnia magna (Water flea): < 1 mg/l; 48 h (External MSDS)

**Persistence and degradability**

No information available.

**Bioaccumulative potential**

*Partition coefficient: n-octanol/water*

log Pow: 1.68

(calculated)

(Lit.) Bioaccumulation is not expected (log Pow <1).

**Mobility in soil**

No information available.

**Other adverse effects**

*Henry constant*

467 Pa\*m<sup>3</sup>/mol

Distribution preferentially in air. (Lit.)

*Additional ecological information*

Discharge into the environment must be avoided.

Discharge into the environment must be avoided.

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**SECTION 13. Disposal considerations**

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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**SECTION 14. Transport information**

**Land transport (DOT)**

UN number UN 2402  
Proper shipping name PROPANETHIOLS  
Class 3  
Packing group II  
Environmentally hazardous --

**Air transport (IATA)**

UN number UN 2402  
Proper shipping name PROPANETHIOLS  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user no

**Sea transport (IMDG)**

UN number UN 2402  
Proper shipping name PROPANETHIOLS  
Class 3  
Packing group II  
Environmentally hazardous --  
Special precautions for user yes  
EmS F-E S-D

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**SECTION 15. Regulatory information**

**United States of America**

**Canada**

**WHMIS Classification**

B2 Flammable Liquid  
D2B Toxic Material Causing Other Toxic Effects  
Flammable Liquid, Eye irritant

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



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**Notification status**

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

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**SECTION 16. Other information**

**Training advice**

Provide adequate information, instruction and training for operators.

**Full text of H-Statements referred to under sections 2 and 3.**

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

Used abbreviations and acronyms can be looked up at [www.wikipedia.org](http://www.wikipedia.org).

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The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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