JUNSEI Material safety data sheet

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Catalog Numbers: 75170
Catalog Name: 2-Mercaptethanol
Company Identification:

Junsei Chemical Co., Ltd.
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Tokyo, 103-0023 JAPAN
EMERGENCY TELEPHONE NUMBER: +81-48-986-6161
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Web: http://www.junsei.co.jp/

CREATION DATE: April 24, 2013

SECTION 2 HAZARDS IDENTIFICATION

Physical and chemical hazard

Flammable liquids		: Category 4
Pyrophoric liquids		: Out of category

Human health hazard

Acute toxicity	Oral	: Category 3
	Dermal	: Category 2
Skin corrosion/Irritation		: Category 2
Serious eye damage/eye irritation		: Category 2A
Specific target organ systemic toxicity(single exposure)		: Category 2(central nervous system)
Specific target organ systemic toxicity(repeated exposure)		: Category 2(Liver)

Environmental hazard

Hazardous to the aquatic environment-acute hazard	: Category 1
Hazardous to the aquatic environment-chronic hazard	: Category 1

Pictograms or symbol

Signal word : Danger
Hazard statement : Combustible liquid

Toxic if swallowed.
Fatal in contact with skin.
Causes skin irritation.
Causes serious eye irritation.
May cause damage to organs (central nervous system).
May cause damage to organs (liver) through prolonged or repeated exposure.
Very toxic to aquatic life.
Very toxic to aquatic life with long lasting effects.

Cautions

Safety measurements:

- ・Keep away from heat/sparks/open flames/hot surfaces.-No smoking.
- ・Do not breathing dust/fume/gas/mist/vapours/spray.
- ・Do not get in eyes, on skin, or on clothing.
- ・Wash hands thoroughly after handling.
- ・Do not eat, drink or smoke when using this product.
- ・Avoid release to the environment.
- ・Wear protective gloves/protective clothing/eye protection/face protection.

First-aid measures:

- ・If swallowed : Rinse mouth. Immediately call a POISON CENTER or doctor/physician.
- ・IF on skin : Wash with plenty of soap and water. Immediately call a POISON CENTER or doctor/physician.
- ・IF skin irritation or rash occurs: Get medical advice/attention.
- ・If in eyes : Rinse cautiously with water for several minutes. Remove contact lenses ,if present and easy to do. Continue rinsing.
- ・If eyes irritation persists: Get medical advice/attention.
- ・If exposed or concerned:: Call a POISON CENTER or doctor/physician.
- ・Call a POISON CENTER or doctor/physician if you feel unwell.
- ・Take off immediately all contaminated clothing and wash it before reuse.
- ・In case of fire : Use to water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide.

Storage

- ・Store in a well-ventilated place. Keep container tightly closed.
- ・Store locked up.

Disposal

- ・Dispose of contents and containers appropriately in accordance with related regu1ations.

SECTION 3 COMPOSITION, INFORMATION ON INGREDIENTS

Substance/Mixture : Substance
Component : 2-Mercaptethanol
Synonyms : Thioglycol
Chemical formula : C_2H_6OS
Cas number : 60-24-2
US TSCA inventory : Registered
EC number (EINECS): 200-464-2
JAPAN number (ENCS) : 2-458

SECTION 4 FIRST AID MEASURES

If inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
If on skin : Remove/Take off immediately all contaminated clothing.
Rinse skin with water/shower.
If in eyes : Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
If eyes irritation persists, get medical advice/attention.
If swallowed : Rinse mouth, give plenty of water to dilute. Get medical immediately.
Potential acute health effects :
Inhalation ; Shortness of breath.
Skin ; Redness. Pain.
Eyes ; Redness. Pain.
Ingestion ; No data available
Important signs and symptoms : The substance is irritating to the eyes, skin and respiratory tract. The substance may cause effects on the central nervous system.
Important signs and symptoms : No data available

SECTION 5 FIRE FIGHTING MEASURES

Extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide.
Prohibited extinguishing media : Straight streams of water.
Particular fire fighting : Move containers form fire area if it can be done without risk, if not possible, apply water form a safe distance to cool and protect surrounding area.
Protection for firefighters : Firefighters should wear protective equipment.

SECTION 6 ACCIDENTAL RELEASE MEASURES

General Information : Use proper personal protective equipment as indicated in Section 8.
Cautions for environment : Avoid release to the rivers, lakes, ocean, groundwater.
Spills/Leak : Absorb spills with absorbent (vermiculite, sand) and place into a suitable disposal container for later disposal.

SECTION 7 HANDLING AND STORAGE

Handling : Avoid breathing dust, vapor, mist, or gas. Avoid contact with skin and eyes.
Use only in a chemical fume hood.
Storage : Store in a cool, dry place. Store in a tightly closed container.
Keep away from strong oxidants and acids.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

Engineering Controls : Use adequate ventilation to keep airborne concentrations low.
Occupational exposure limits
OELs (2012) ; Not established
ACGIH(2010) ; Not established
Personal protective equipment :

Eye Protection : Goggles
Hand Protection : Protective gloves
Skin and body protection : Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection : Wear respiratory protection.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Physical State : liquid
Appearance : Colourless
Odor : Characteristic odour
pH : No data available
Vapor Pressure : 0.13 kPa (20℃)
Boiling Point : 157～158℃(742mmHg)
Freezing/Melting Point : ＜-100 ℃
Autoignition Temperature : 295℃
Flash Point : 74℃ (Open Cup)
Explosion Limits, lower : 2.3 vol%
Explosion Limits, upper : 18.0 vol%
Decomposition Temperature : 157～158℃(742mmHg)
Solubility in water : Misble
Specific Gravity/Density : 1.115～1.125(20/20℃)
Molecular Formula : C_2H_6OS
Molecular Weight : 78.13

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability : Stable in ordinary handling conditions.
Conditions to Avoid : Contact with heat, sparks flames, flames ,strong oxidizing agents and metals.
Incompatibilities with Other Materials : Strong oxidizing agents and metals
Hazardous Decomposition Products : Sulfur oxides
Hazardous Polymerization : No data available

SECTION 11 TOXICOLOGICAL INFORMATION

Acute toxicity:
Oral : Classified into category 3 based on rat oral LD_{50}=244mg/kg (MOE Risk Assessment vol. 7(2009).
Dermal : Classified into category 2 based on rabbit dermal LD_{50}=150mg/kg(HSDB(2006)).
Gas : Not applicable (GHS definition).
Vapours : Not possible to classify because of insufficient data.
Dusts and mists: Not possible to classify because of no data.

Skin corrosion/Irritation : Classified into category 2 based on the description, " The substance is corrosive and irritating to skin (IUCLID, (2000)) "and " The substance may cause redness and pain to skin (MOE Risk Assessment vol. 7(2009)".

Serious eye damage/eye irritation : Classified into 2A category based on the description, " The

substance may cause redness and pain to eye (MOE Risk Assessment vol. 7(2009)"and "2-Mercaptoethanol applied undiluted to the rabbit eye is toxic to the conjunctiva and causes long-lasting moderately severe corneal opacity(HSDB(2006))".

Respiratory sensitization:Not possible to classify because of no data.

Skin sensitization Not possible to classify because of no data.

Mutagenicity:Not possible to classify because of no data.

Effects on the reproductive system:Not possible to classify because of no data.

Specific target organ systemic toxicity single exposure:Classified into category 2 (central nervous system) based on the description, "The substance may cause effects on the central nervous system (ICSC(2001) ".

Specific target organ systemic toxicity repeated exposure:Classified into category 2 (liver) based on the description, " To rats , in repeated oral administrations of the dosage below 15.4 mg/kg/day (as 90-day medication), liver hypertrophy accompanied by an elevations of transaminase was observed (MOE Risk Assessment vol. 7(2009)".

Aspiration hazard :Not possible to classify because of no data.

SECTION 12 ECOLOGICAL INFORMATION

Ecotoxicity:

Hazardous to the aquatic environment (acute) :Classified into category 1 based on 48hr. EC_{50}= 0.12 mg/L of Crustacea(Daphnia magna) (Results of Eco-toxicity tests of chemicals conducted by Ministry of the Environment in Japan (2010).

Hazardous to the aquatic environment (chronic) : Since acute toxicity was Category 1 and there was no rapidly degrading (Biodegradation data of Existing Chemical Substances under the Chemical Substances Control Law(1997)), it was classified into Category 1.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in a manner consistent with federal, state, and local regulations.

SECTION 14 TRANSPORT INFORMATION

IATA Shipping Name: Thioglycol
Hazard Class: 6.1 (Toxic substances)
UN Number: 2966
Packing Group: Ⅱ

IMO Shipping Name: THIOGLYCOL
Hazard Class: 6.1 (TOXIC SUBSTANCES)
UN Number: 2966
Packing Group: Ⅱ
Marine pollitant: Yes

RID/ADR Shipping Name: Thioglycol
Hazard Class: 6.1 (Toxic substances)
UN Number: 2966
Packing Group: Ⅱ

SECTION 15 REGULATORY INFORMATION

Fire Service Act ：Article 2, Category Ⅳinflammable liquid
Poisonous and Deleterious Substances Control Act ：Article 1-26-11 of Cabinet order(2-Mercaptoethanol and preparations containing it)
Industrial Safety and Health Act ：Not regulated
Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof (MSDS required) (Effective from October 1, 2009) ：Not regulated
Ordinance for Enforcement of the Civil Aeronautics Act：
Article 194 （ⅵ） Toxic substances
Regulations for the carriage and storage of dangerous goods in ship：
Article 2 Toxic substances

Substance Registration ：
US TSCA inventory :Registerd
EC number (EINECS): 200-464-6
JAPAN number (ENCS) : 2-458
Australia (AICS) : Registration
Canada(DSL) : Registration
Korea number (ECL) : KE-23095
China(IECSC) : Registration

SECTION 16 OTHER INFORMATION

REFERENCES:
－The Merck Index 14 edition, Monographs No. 5869(2-Mercaptoethanol)
－Chemical Risk Information Platform (CHRI)
－GHS Classification Guidance for the Japanese Government 2nd revised (March, 2010)
－Information about the status of the implementation of GHS in Japan(ID=21A3577))
－Registry of Toxic Effects of Chemical Substances, No KL5600000 (2-Mercaptoethanol)
－Hazardous Substances Data Bank (HSDB)
－International Chemical Safety Cards (ICSC) No. 0916 (2-Mercaptoethanol)
－IUCLID Dataset(2000)

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 properties of the product.
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