



Samchun Chemicals

Material Safety Data Sheet

2-Mercaptoethanol

Section 1 – PRODUCT AND COMPANY IDENTIFICATION

1. Product Identifier	2-Mercaptoethanol, 2-Hydroxy-1-ethanethiol
2. Recommended Use & Uses advised against	Uses for Laboratory and R&D only
3. Information of Supplier	SAMCHUN PURE CHEMICAL CO.,LTD ADDRESS; (Mogok-dong) 117, Sandan-ro 16Beon-gil, Pyeongtaek-si, Gyeonggi-do, Korea Emergency Phone; 82-31-668-0700/3 Department; Safety & Environment dep. Web site; http://www.samchun.com

Section 2 – HAZARDS and DANGER IDENTIFICATION

1.GHS Classification· Identification	Acute toxic(Oral)	Category3
	Acute toxic(Skin)	Category3
	Serious Eye Damage/Eye Irritation	Category1
	Skin Corrosion/Skin Irritation	Category1
	Specific Target Organ Toxicity (Single Exposure)	Category2
	Specific Target Organ Toxicity (Repeated Exposure)	Category2
	Acute Aquatic Toxicity	Category1

2. Label and Mark including Precautionary Statement

◦Label elements



◦Signal word

Danger

◦Hazard · Danger statement

H301 Toxic if swallowed
H311 Toxic in contact with skin
H314 Causes severe skin burns and eye damage
H318 Causes serious eye damage
H371 May cause damage to organs (CNS)
H373 May cause damage to organs (Liver) through prolonged or repeated exposure
H400 Very toxic to aquatic life

◦Precautionary statement

Precaution P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P273 Avoid release to the environment

Measures	<p>P321 Specific treatment (see Seciton 4. on this label).</p> <p>P330 Rinse mouth.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician</p> <p>P312 Call a POISON CENTER or doctor/physician if you feel unwell.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water / (...)</p> <p>P361+P364 Take off immediately all contaminated clothing, Wash before reuse</p> <p>P310 Immediately call a POISON CENTER or doctor/physician.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting</p> <p>P303+P361+P353 SKIN (or hair) all contaminated clothing IF ON Take off. Rinse skin with water / shower.</p> <p>P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing</p> <p>P308+P311 If exposed or concerns, call a poison center or physician</p> <p>P314 Get medical advice/attention if you feel unwell.</p> <p>P391 Collect spillage</p>
Storage	P405 Store locked up
Dispose	P501 Dispose of contents/container under related law and regulations

3. Other Hazard-Risk which are not included in the classification criteria

NFPA index(0~4steps) : Health=3, Fire=2, Reaction=1

By the flow of a substance or mixture that also can cause static electricity

Section 3 – COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Name	Other Name	CAS No.	Content (%)
2-Mercaptoethanol	2-Hydroxy-1-ethanethio	60-24-2	100

Section 4 – FIRST AID MEASURES

1. Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15minutes, Immediate medical attention is required.
2. Skin Contact	Take off contaminated cloths and shoes immediately, wash with plenty Of water and soap for at least 15minutes.
3. Inhalation	Move to fresh air immediately, if breathing is difficult, induce artificial respiration and immediate medical treatment is required.
4. Ingestion	Do not induce vomiting and Call a physician immediately.
5. Immediate medical attention and Notes for physician	Let physician aware material and take protection measures.

Section 5 – FIRE-FIGHT MEASURES

1. Suitable extinguish media	Powdered extinguisher, water, foam extinguisher, carbon dioxide Inappropriate Extinguishing Media: N/A
2. Special hazards arising from the substance	Thermal decomposition products: hydrogen sulphide, sulfur oxides, carbon oxides
3. Special protective equipment and Precautions for fire-fighters	Move a container away from fire place, available not being dangerous Cool the container with water spray for long time, after extinguishing No direct contact with material by water. In case of big fire, mass watering in fine spray and decrease vapor. Spray in safety distance, avoid inhaling of material-itself and burnings, position in opposite wind and escape low area.

Section 6 – ACCIDENTIAL RELEASE MEASURES

1. Personal precautions and Emergency procedures	Don't touch leakages and avoid inhale and skin contact, ventilate and use air respiratory in closed room, remove ignition source.
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| 2. Environmental precautions | Minimize leak/spill, collect and keep leak/spill in container |
| 3. Methods and material for containment and cleaning up | Soak up with sand, clay and other inert absorbent material |

Section 7 – HANDING AND STORAGE

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| 1. Precautions for safe Handling | Skin contact, inhalation of vapors and prevent intrusion to the eye, all containers will be grounded. |
| 2. Conditions for safe storage | Keep container tightly closed in a dry, cool and well-ventilated place. Keep away from incompatible materials. |

Section 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

1. Occupational exposure limit, biological exposure limit

National law of Safety management of

N/A

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| 2. Appropriate Engineering controls | Check conditions of exposure criteria, operation local ventilation during work
Ventilation equipment should be explosion-proof if there is a risk of explosion. |
| 3. Personal protective equipment | |
| ◦Respiratory protection | Because of the concern about the harmfulness of the human body due to chemical substances, the respiratory protective equipment should be worn by combining the respiratory filter in consideration of the physicochemical characteristics during handling.
Respiratory protection should be certified by the Health and Safety Authority. If this affects the life or health concerns or other unknown concentrations, depending on the work environment should wear supplied-air respirator, air respirator |
| ◦Eye-protection | Wear safety goggles for handling chemicals as they may cause human health hazards due to chemicals.
Install eye wash facilities and emergency eyewash stations near chemical handling sites. |
| ◦Hand protection | Wear safety gloves for handling chemicals as they may cause human health hazards. |
| ◦Skin and body protection | Wear chemical protective clothing when handling, as it is likely to harm human health due to chemicals |

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

1. Physical state and color	Liquid(Colorless)	2. Odor	Faint but distinctive flavor
3. threshold	N/A	4. pH	4.5~6
5. Melting/Freezing point	<-50°C	6. Boiling point/range	154~161°C
7. Flashing point	70.5°C	8. Evaporation speed	N/A
9. Flammability(solid, gas)	N/A	10. Flash or Explosion limit upper / lower	18% / 2.3%
11. Vapor pressure	1.756mmHg@25°C	12. Solubility	N/A
13. Vapor density	2.69	14. Gravity	1.1143
15. n-octanol-water Partition coefficient	-0.056	16. Self ignition temp(°C)	295°C
17. Cracking temp(°C)	N/A	18. Viscosity	3.43cP
19. Molecular Weight	78.13		

Section 10 – STABILITY AND REACTIVITY

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| 1. Chemical stability and Possibility of Hazardous Reactions | Contact with water or moist air may form flammable, toxic gases and vapors.
Not polymerized |
| 2. Conditions to Avoid | Avoid contact with incompatible materials.
Dangerous gases may accumulate in confined spaces
Avoid contact with heat, flames, sparks and other sources of ignition. |

	Containers may rupture or explode if exposed to heat.
3. Incompatible Materials	Oxidizers, acids, combustible materials, metals, bases, reducing agents
4. Hazardous Decomposition Products	Thermal decomposition products: hydrogen sulphide, sulfur oxides, carbon oxides

Section 11 – TOXICOLOGICAL INFORMATION

1. Information on the likely routes of exposure.

N/A

2. Health hazard information

◦Acute toxic	Oral : LD50 131mg/kg Rat Skin : LD50 251mg/kg Rabbit Inhalation : N/A
◦Serious skin corrosive / irritation	Irritation of the skin irritation test with rabbits (irritation score 3.4) Intermediate stimulus
◦Serious eye damage / irritation	Rabbit / the draize test: Corrosive
◦Respiratory sensitization	N/A
◦Skin sensitization	Guinea pig / maximization test (OECD TG 406) Skin: Sensitive
◦Carcinogenicity	N/A
◦Germ cell Mutagenicity	N/A
◦Reproductive toxic	No toxicity to female fertility and development
◦Specific target organ toxicity (single exposure)	Causes redness and pain of the people in the eyes and skin appears in the Shortness of breath by breath. It is a substance that can affect the central nervous system.
◦Specific target organ toxicity (repeated exposure)	Rats: Flexibility, weight loss, liver weight reduction and hepatocyte liquor saturation during 7 weeks of oral exposure at 15, 50 and 75 mg / kg / day. Degenerative cardiomyopathy occurs in female (50, 75 mg / kg / day) and male (75 mg / kg / day)
◦Aspiration hazard	N/A

Section 12 – ECOLOGICAL INFORMATION

1.Acquatic and Terrestrial eco toxicity	Fish toxicity : LC50 3.7mg/l 96hr Leuciscus idus Invertebrate toxicity : EC50 0.4mg/l 48hr Daphnia magna Sea algae : EC50 12mg/l 72hr Scenedesmus subspicatus
2.Persistence and degradability	Persistence : log Kow -0.056 Degradability : BOD5/COD 0.055
3.Bioaccumulative potential	Concentrations : BCF 3 Bioaccumulative : 6% 5day
4.Mobility in soil	N/A
5.Other adverse effects	N/A

Section 13 – Disposable considerations

1.Waste methods	Dispose in accordance with local regulations.
2.Waste warning	Isolate waste away from prohibitive mixture substance.

Section 14 – TRANSPORT INFORMATION

1. UN No.	2966
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2. Proper shipping Name	2-Mercaptoethanol
3. Hazard class	6.1
4. Packing group	II
5. Marine pollutant	N/A
6. Particular safety Measures for transportation	Fire emergency : F-A Emergency measures RELEASE : S-A

Section 15 – REGULATORY INFORMATION

1. Occupation safety and health acts	Non-described
2. Chemical Substances Control Act	Non-described
3. National law of Safety management of hazardous material	4 Class 3 Petroleum (Water-soluble liquid) 4000L
4. National law of management of Wastes	Designated Waste
5. Other domestic and foreign law	Non-described

Section 16 – OTHER INFORMATION

1. Material source	A chemical information MSDS Safety and Health Agency National Institute of Environmental Research Chemical Information Systems Korea Industrial Technology National Fire Hazardous Materials Information System
1. The 1st edition	2002.07.30
2. Revision and The final revision	6 / 2019.01.03
. Other references	

* The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.