



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GB/T 16483-2008, GB/T 17519-2013

Product Name 2-Mercaptoethanol
Revision date 06-Feb-2025
Revision Number 2.1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product Name 2-Mercaptoethanol
Catalogue Number(s) 1610710, 1610710EDU, 1610710XTU
English chemical name 2-Mercaptoethanol

Other means of identification

UN/ID no UN2966
CAS No. 60-24-2
Pure substance/mixture Substance

Details of the supplier of the safety data sheet

Corporate Headquarters

Bio-Rad Laboratories Inc.
1000 Alfred Nobel Drive
Hercules, CA 94547
USA

Manufacturer

Bio-Rad Laboratories, Life Science Group
2000 Alfred Nobel Drive
Hercules, California 94547
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Legal Entity / Contact Address

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Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Hong Kong: 800-968-793

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

SECTION 2: Hazards identification

Emergency Overview

Toxic if swallowed
May be fatal if absorbed through skin
Toxic by inhalation
Irritating to skin
Irritating to eyes
May cause allergic skin reaction
Very toxic to aquatic organisms

VERY TOXIC TO AQUATIC ORGANISMS; MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT

COMBUSTIBLE LIQUID AND VAPOUR

Appearance Liquid

Physical state Liquid

Odour Sulphurous

Classification of the substance or mixture

Flammable liquids	Category 4
Acute toxicity - Oral	Category 3
Acute toxicity - Dermal	Category 2
Acute toxicity - Inhalation (Vapours)	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2
Skin sensitisation	Category 1A
Specific target organ toxicity - Single exposure	Category 2
Specific target organ toxicity - Repeated exposure	Category 2
Hazardous to the Aquatic Environment - Acute Hazard	Category 1
Hazardous to the Aquatic Environment - Chronic Hazard	Category 1

Label elements**Signal word**

Danger

Hazard statements

Combustible liquid
 Toxic if swallowed
 Fatal in contact with skin
 Toxic if inhaled
 Causes skin irritation
 Causes serious eye irritation
 May cause an allergic skin reaction
 May cause damage to organs
 May cause damage to organs through prolonged or repeated exposure
 Very toxic to aquatic life with long lasting effects

Precautionary statements**Prevention**

Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Do not get in eyes, on skin, or on clothing
 Use only outdoors or in a well-ventilated area
 Avoid release to the environment
 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
 Wear protective gloves/protective clothing/eye protection/face protection

Response

IF exposed or concerned: Call a POISON CENTER or doctor
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a POISON CENTER or doctor
 IF ON SKIN: Wash with plenty of water and soap
 Immediately call a POISON CENTRE or doctor
 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 eye irritation persists: Get medical advice/attention

IF SWALLOWED: Immediately call a POISON CENTER or doctor

Rinse mouth

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Collect spillage

Storage

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

Disposal

Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Physical and chemical hazards

Combustible material: may burn but does not ignite readily.

Health hazards

Immediate Health Effects: Can cause poisoning if inhaled, swallowed or absorbed by the skin. Symptoms of poisoning may appear even after several hours. Medical examination necessary even merely on suspicion of intoxication. Severe, even fatal poisoning if absorbed by the skin, inhaled or swallowed. Symptoms of poisoning may appear even after several hours. Causes skin irritation (pain, redness and swelling). Causes severe irritation (tears, blurred vision and redness). Irritating, but will not permanently injure eye tissue. Allergic reactions (sensitiser). Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Chronic effects: Target organ(s).

Environmental hazards

Dangerous for the environment This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimise use of water to prevent environmental contamination

Other hazards which do not result in classification

No information available

SECTION 3: Composition/information on ingredients

Substance

CAS No. 60-24-2

Chemical name	Weight-%	CAS No.
2-Mercaptoethanol	50 - 100	60-24-2

SECTION 4: First aid measures

Description of necessary first aid measures

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Inhalation	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur. If breathing has stopped, give artificial respiration. Get medical attention immediately. Immediate medical attention is required. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep

	eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.
Ingestion	Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.
<u>Most important symptoms and effects, both acute and delayed</u>	Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.
<u>For emergency responders</u>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Do not breathe vapour or mist. Use personal protective equipment as required. See section 8 for more information.
<u>Note to doctors</u>	May cause sensitisation in susceptible persons. Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Product is or contains a sensitiser. May cause sensitisation by skin contact.

Special protective actions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Take precautionary measures against static discharges. Do not touch or walk through spilled material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Do not breathe vapour or mist.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up Stop leak if you can do it without risk. Do not touch or walk through spilled material. Dyke far ahead of liquid spill for later disposal. Take precautionary measures against static

discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labelled containers.

Precautions to prevent secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

SECTION 7: Handling and storage

Precautions for safe handling Use personal protection equipment. Do not breathe vapour or mist. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharges. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Take off contaminated clothing and wash it before reuse. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapour or mist. See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled containers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Keep out of the reach of children. Store locked up.

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits
This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Note See section 16 for terms and abbreviations

Biological occupational exposure limits
This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

Monitoring and observation processes
No applicable information was found.

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Skin and body protection	Impervious clothing. Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Hand protection	Wear suitable gloves. Impervious gloves.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Do not breathe vapour or mist.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Liquid
Colour	light yellow
Physical state	Liquid
Odour	Sulphurous
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		None known
Melting point / freezing point	-100 °C	
Initial boiling point and boiling range	158 °C	
Flash point	74 °C	
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Relative vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	295 °C	
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Additional information		
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

SECTION 10: Stability and reactivity

<u>Stability</u>	Stable under normal conditions.
<u>Possibility of hazardous reactions</u>	None under normal processing.

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Conditions to avoid Heat, flames and sparks. Excessive heat.**Incompatible materials** Strong acids. Strong bases. Strong oxidising agents.**Hazardous decomposition products** None known based on information supplied.**SECTION 11: Toxicological information****Acute toxicity****Numerical measures of toxicity**

No information available

Unknown acute toxicity**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-Mercaptoethanol	= 244 mg/kg (Rat)	112 - 224 mg/kg (Rabbit)	-

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.**Respiratory or skin sensitisation** May cause sensitisation by skin contact.**Germ cell mutagenicity** Based on available data, the classification criteria are not met.**Carcinogenicity** Based on available data, the classification criteria are not met.**Reproductive toxicity** Based on available data, the classification criteria are not met.**Specific target organ toxicity — single exposure** Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE), May cause damage to organs if swallowed, May cause damage to organs in contact with skin.**Specific target organ toxicity — repeated exposure** May cause damage to organs through prolonged or repeated exposure.**Aspiration hazard** Based on available data, the classification criteria are not met.**SECTION 12: Ecological information****Ecotoxicity** Very toxic to aquatic life with long lasting effects.

Chemical name	Algae/aquatic plants	Fish	Crustacea
2-Mercaptoethanol	EC50: =12mg/L (72h, <i>Desmodesmus subspicatus</i>)	-	EC50: =1.52mg/L (48h, <i>Daphnia magna</i>)

Persistence and degradability No information available.

Bioaccumulative potential There is no data for this product.

Component Information

Chemical name	Partition coefficient
2-Mercaptoethanol	-0.056

Mobility in soil No information available.

SECTION 13: Disposal considerations

Waste chemicals Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IMDG**

UN number or ID number UN2966
UN proper shipping name Acetone solution
Description UN2966, Environmentally hazardous substances, liquid, n.o.s., 6.1, II, Marine pollutant
Transport hazard class(es) 6.1
Packing group II
Marine pollutant P
EmS-No. F-A, S-A
Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

IATA

UN number or ID number UN2966
UN proper shipping name Environmentally hazardous substances, solid, n.o.s.
Description UN2966, Environmentally hazardous substances, solid, n.o.s., 6.1, II
Transport hazard class(es) 6.1
Packing group II
ERG Code 6L

JT/T 617

UN proper shipping name THIOGLYCOL
Environmental hazards Yes
Description .?1 THIOGLYCOL.?2

Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors: Not applicable.

Catalogue of occupational diseases:

Not applicable.

Regulations on the Control over Safety of Hazardous ChemicalsInventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Verify that licence requirements are met.
Weight-% 100

Chemical name	Inventory of hazardous chemicals
2-Mercaptoethanol	Listed

GB 18218-2009 Identification of major hazard installations for dangerous chemicalsCategory

Toxic substance

Threshold quantity (T)

50

List of hazardous chemicals under priority management

Not applicable

Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China

Not applicable

Measures for the Environmental Management of New Chemical Substances**IECSC - China Inventory of Existing Chemical Substances** Contact supplier for inventory compliance status.**International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**SECTION 16: Other information****Prepared By** Bio-Rad Laboratories, Environmental Health and Safety**Revision date** 06-Feb-2025**Revision Note** SDS sections updated. 14.**Abbreviations and acronyms**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	Sk*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal

Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Disclaimer

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End of Safety Data Sheet