Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THECOMPANY/UNDERTAKING

Product Identifier

Perihalan Produk:	**Mercaptoacetic acid**
Product Description:	**Mercaptoacetic acid**
Cat No. :	B20391
Synonyms	Thioglycolic acid
CAS No	68-11-1
Molecular Formula	C2 H4 O2 S

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

Recommended Use	Laboratory chemicals.
Uses advised against	No Information available

Company

Thermo Fisher Scientific Fisher Scientific (M) Sdn Bhd
Hap Seng Business Park, Lot 01-03, 01-04 Aras 1 Unity Square,
No 12, Persiaran Perusahaan, Seksyen 23, 40300 Shah Alam,
Selangor Darul Ehsan, Malaysia.
Main line: +60 3-5525 7888

Supplier

E-mail address Enquiry.my@thermofisher.com

Emergency Telephone Number

Tel: +03-5525 7888
CHEMTREC Malaysia **1-800-815-308** (Malay)
CHEMTREC Malaysia (Kuala Lumpur) **+(60)-327884561** (Malay)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Acute oral toxicity	Category 3 (H301)
Acute dermal toxicity	Category 3 (H311)
Acute Inhalation Toxicity - Dusts and Mists	Category 4 (H332)
Skin Corrosion/Irritation	Category 1 B (H314)
Serious Eye Damage/Eye Irritation	Category 1 (H318)
Skin Sensitization	Category 1 (H317)
Chronic aquatic toxicity	Category 3 (H412)

Label Elements

Signal Word **Danger**

Hazard Statements
H301 + H311 - Toxic if swallowed or in contact with skin
H332 - Harmful if inhaled
H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H412 - Harmful to aquatic life with long lasting effects

Precautionary Statements
Prevention
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P272 - Contaminated work clothing should not be allowed out of the workplace
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P273 - Avoid release to the environment
Response
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor
P330 - Rinse mouth
P331 - Do NOT induce vomiting
P363 - Wash contaminated clothing before reuse
Storage
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
Disposal
P501 - Dispose of contents/ container to an approved waste disposal plant

Other Hazards

Stench
Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
Thioglycolic acid	68-11-1	<=100

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Inhalation If not breathing, give artificial respiration. 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. Remove to fresh air. Immediate medical attention is required.

Self-Protection of the First Aider Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Most important symptoms and effects, both acute and delayed

Causes burns by all exposure routes. May cause allergic skin reaction. Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. 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.

Indication of any immediate medical attention and special treatment needed

Notes to Physician Treat symptomatically.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

CO_2, dry chemical, dry sand, alcohol-resistant foam.

Extinguishing media which must not be used for safety reasons

Water may be ineffective.

Special hazards arising from the substance or mixture

Thermal decomposition can lead to release of irritating gases and vapors. The product causes burns of eyes, skin and mucous membranes.

Hazardous Combustion Products

Hydrogen sulfide (H2S), Methylmercaptan, Ethylmercaptan, Sulfur oxides, Carbon monoxide (CO), Carbon dioxide (CO_2).

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

Should not be released into the environment. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage. Do not flush into surface water or sanitary sewer system.

Methods and Material for Containment and Cleaning Up

Provide adequate ventilation. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Use personal protective equipment as required.

Reference to Other Sections

Refer to protective measures listed in Sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not ingest. If swallowed then seek immediate medical assistance.

Conditions for Safe Storage, Including any Incompatibilities

Keep refrigerated or Keep at temperatures below 10°C. Protect from direct sunlight. Keep container tightly closed. Corrosives area. Keep containers tightly closed in a dry, cool and well-ventilated place.

Specific End Uses

Use in laboratories.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	Malaysia	ACGIH TLV	OSHA PEL
Thioglycolic acid		TWA: 1 ppm Skin	(Vacated) TWA: 1 ppm (Vacated) TWA: 4 mg/m³ Skin

Component	European Union	The United Kingdom	Germany
Thioglycolic acid		STEL: 3 ppm 15 min STEL: 11.4 mg/m³ 15 min TWA: 1 ppm 8 hr TWA: 3.8 mg/m³ 8 hr	Haut

Exposure Controls

Engineering Measures

Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

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

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators
Recommended Filter type:	Particulates filter conforming to EN 143 Acid gases filter Type E Yellow conforming to EN14387 To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly When RPE is used a face piece Fit Test should be conducted

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls Prevent product from entering drains

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colorless	
Physical State	Liquid	
Odor	Stench	
Odor Threshold	No data available	
pH	1.5	1% aq. solution
Melting Point/Range	-16 °C / 3.2 °F	
Softening Point	No data available	
Boiling Point/Range	220 °C / 428 °F	@ 760 mmHg
Flash Point	126 °C / 258.8 °F	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 5.9 vol%	
Vapor Pressure	0.1 hPa @ 20 °C	
Vapor Density	3.18 (Air = 1.0)	(Air = 1.0)
Specific Gravity / Density	1.325	
Bulk Density	Not applicable	Liquid
Water Solubility	Soluble	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Thioglycolic acid	-2.99

Autoignition Temperature	350 °C / 662 °F
Decomposition Temperature	~85 °C
Viscosity	6.55 Pa.s @ 20 °C
Explosive Properties	No information available
Oxidizing Properties	No information available
Molecular Formula	C2 H4 O2 S
Molecular Weight	92.11

SECTION 10: STABILITY AND REACTIVITY

Reactivity

None known, based on information available.

Chemical Stability

Stable up to approximately 30°C. Decomposes. Hydrogen sulfide (H2S).

Possibility of Hazardous Reactions

Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions None under normal processing.

Conditions to Avoid

Incompatible products. Heat. Temperatures above 40°C.

Incompatible Materials

Strong oxidizing agents. Metals. Strong acids. Strong bases. . Strong oxidizing agents. Peroxides. Nitric acid. Hypochlorite solutions.

Hazardous Decomposition Products

Hydrogen sulfide (H2S). Methylmercaptan. Ethylmercaptan. Sulfur oxides. Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Product Information

(a) acute toxicity;
Oral Category 3
Dermal Category 3
Inhalation Category 4

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Thioglycolic acid	LD50 = 73 mg/kg (Rat)	LD50 = 848 mg/kg (Rabbit)	LC50 = 1,388 mg/m³ (Rat) 4 h OECD 403 (Inhalation: aerosol)

(b) skin corrosion/irritation; Category 1 B

(c) serious eye damage/irritation; Category 1

(d) respiratory or skin sensitization;
Respiratory Based on available data, the classification criteria are not met
Skin Category 1

No information available

(e) germ cell mutagenicity; Based on available data, the classification criteria are not met

(f) carcinogenicity; Based on available data, the classification criteria are not met

There are no known carcinogenic chemicals in this product

(g) reproductive toxicity; Based on available data, the classification criteria are not met

(h) STOT-single exposure; Based on available data, the classification criteria are not met

(i) STOT-repeated exposure; Based on available data, the classification criteria are not met

Target Organs None known.

(j) aspiration hazard; Based on available data, the classification criteria are not met

Symptoms / effects,both acute and delayed Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Ingestion causes severe swelling, severe damage to the delicate tissue and danger of perforation. 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.

Endocrine Disrupting Properties Assess endocrine disrupting properties for human health. This product does not contain any known or suspected endocrine disruptors.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity effects Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. This product contains the following substance(s) which are hazardous for the environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Thioglycolic acid	Leuciscus idus: LC50 = 103 mg/L96h Pimephales promelas: LC50 = 30 mg/L/96h	EC50_48h = 35.8 mg/L	ErC50_72h = 35.65 mg/L	

Persistence and degradability Expected to be biodegradable

Persistence Persistence is unlikely.

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative potential Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
Thioglycolic acid	-2.99	No data available

Mobility in soil The product is water soluble, and may spread in water systems. Will likely be mobile in the environment due to its water solubility. Highly mobile in soils.

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

Other adverse effects No information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues/Unused Products Waste is classified as hazardous Dispose of in accordance with the European Directives on waste and hazardous waste Dispose of in accordance with local regulations

Contaminated Packaging Dispose of this container to hazardous or special waste collection point.

Other Information Waste codes should be assigned by the user based on the application for which the product was used Do not empty into drains Do not flush to sewer Large amounts will affect pH and harm aquatic organisms Solutions with low pH-value must be neutralized before discharge Do not let this chemical enter the environment

SECTION 14: TRANSPORT INFORMATION

IMDG/IMO

UN-No UN1940
Hazard Class 8
Packing Group II
Proper Shipping Name THIOGLYCOLIC ACID

Road and Rail Transport

UN-No UN1940
Hazard Class 8
Packing Group II
Proper Shipping Name THIOGLYCOLIC ACID

IATA

UN-No UN1940
Hazard Class 8
Packing Group II
Proper Shipping Name THIOGLYCOLIC ACID

Special Precautions for User No special precautions required

SECTION 15: REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories X = listed

Component	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	IECSC	AICS	KECL
Thioglycolic acid	200-677-4	X	X	X	X	X	X	X	KE-33786

National Regulations

Persistent Organic Pollutant	This product does not contain any known or suspected substance
Ozone Depletion Potential	This product does not contain any known or suspected substance

SECTION 16: OTHER INFORMATION

Legend

CAS - Chemical Abstracts Service

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

IECSC - Chinese Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

ENCS - Japanese Existing and New Chemical Substances

AICS - Australian Inventory of Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

ACGIH - American Conference of Governmental Industrial Hygienists

RPE - Respiratory Protective Equipment

LC50 - Lethal Concentration 50%

POW - Partition coefficient Octanol:Water

TWA - Time Weighted Average

IARC - International Agency for Research on Cancer

LD50 - Lethal Dose 50%

EC50 - Effective Concentration 50%

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development

BCF - Bioconcentration factor

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

MARPOL - International Convention for the Prevention of Pollution from Ships

ATE - Acute Toxicity Estimate

VOC - (Volatile Organic Compound)

Key literature references and sources for data

https://echa.europa.eu/information-on-chemicals

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Prepared By	Health, Safety and Environmental Department
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In accordance with local and national regulations: Occupational Safety and Health (Classification, Labelling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013

Disclaimer

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End of Safety Data Sheet