Safety data sheet as per Commission Regulation (EU) 2020/878
Product: 2-Mercaptoethanol

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

1.1 Product identifier

Trade name **2-Mercaptoethanol**
Chemical Name 2-Sulfanylethan-1-ol/ Thioglycol

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

Relevant identified uses pH regulators and water treatment products and laboratory chemicals
Uses identified against Not for use other than those specified

1.3 Details of the supplier of the safety data sheet:

Manufacturer Prasol Chemicals Limited (Formerly known as Prasol Chemicals Private Limited)
Prasol House, Plot No.A-17/2/3,
T.T.C. Industrial Area, Khairne M.I.D.C.,
Navi Mumbai - 400 710.
Maharashtra, India.
Telephone +91-22-27782555/ 61952500
Telefax +91-22-61952577
e-mail address sales@prasolchem.com; inquiry@prasolchem.com

1.4 Emergency telephone number

Telephone +91-22- 27782555/ 61952500
Language English

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

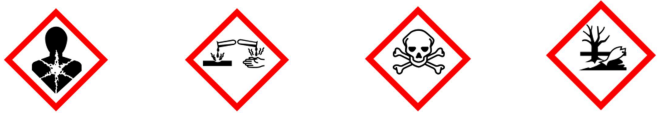
Acute Toxicity (oral)	Category 3	H301	Toxic if swallowed
Acute Toxicity (dermal)	Category 2	H310	Fatal in contact with skin
Skin Irritation	Category 2	H315	Causes skin irritation
Skin Sensitizer	Category 1A	H317	May cause an allergic reaction
Eye Damage	Category 1	H318	Causes serious eye damage
Acute Toxicity (inhalation)	Category 3	H331	Toxic if inhaled
Reproductive Toxicity	Category 2	H361	Suspected of damaging fertility or the unborn child
Specific target organ toxicity Repeated Exposure	Category 2	H373	May cause damage to organs through prolonged or repeated exposure (liver, heart)
Aquatic Chronic	Category 2	H411	Toxic to aquatic life with long lasting effects.

Information concerning particular hazards for human and environment: No further information

2.2 Label elements

Labeling according to Regulation (EC) No 1272/2008 (CLP)

Hazard pictograms



Signal word Danger

Hazard statements

H301	Toxic if swallowed
H310	Fatal in contact with skin
H315	Causes skin irritation
H317	May cause an allergic reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H361	Suspected of damaging fertility or the unborn child
H373	May cause damage to organs through prolonged or repeated exposure (liver, heart)
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

General -

Prevention

P201	Obtain special instructions before use.
P203	Obtain, read and follow all safety instructions before use. Do not handle until all safety precautions have been read and understood
P233	Keep container tightly closed
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash hands 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.
	P273	Avoid release to the environment
	P280	Wear eye protection and face protection.
Response	P301+P316	IF SWALLOWED: Get emergency help immediately.
	P302+P352	IF ON SKIN: Wash with plenty of water and mild soap.
	P304 +P340	IF INHALED: remove person to fresh air and keep comfortable for breathing.
	P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
	P316	Get emergency medical help immediately.
	P318	If exposed or concerned, get medical advice.
	P321	Specific treatment: Wash affected parts immediately.
	P330	Rinse mouth.
	P333+P317	If skin irritation or rash occurs: Get medical help.
	P362 + P364	Take off immediately all contaminated clothing and wash it before reuse.
	P391	Collect spillage.
Storage	P403+P233	Store in a well-ventilated place. Keep container tightly closed.
	P405	Store locked up.
Disposal	P501	Dispose of contents and container in accordance with national regulations

2.3 Other hazards

Not a PBT, vPVB substance according to the criteria of Annex XIII to REACH regulation
Not having endocrine disruptive properties as per criteria of Delegated Regulations (EC) 2017/2100 or (EC) 2018/605

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product Name	**Mercaptoethanol**
Molecular Formula	C_2H_6OS
Molecular Weight	78.13
CAS No.	60-24-2
EC No.	200-464-6

Ingredient	**Classification**	**Concentration (%)**
2- Mercaptoethanol	Acute Tox. 3; Acute Tox. 2; Skin Irrit. 2; Eye Dam. 1; Skin Sens. 1A; Repr. 2; STOT RE 2; Aquatic Chronic 2; H301, H310, H315, H318, H317, H331, H361d, H373, H411	99.5-100

3.2 Mixtures not applicable

There are no other ingredients present, which are classified as hazardous and hence require reporting in this section.
None of the ingredients present are classified as respiratory sensitisers 1A, aspiration hazards and endocrine disruptors.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General information	Take off all contaminated clothing immediately.
After inhalation	If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention
After skin contact	Wash off with plenty of water immediately, seek medical advice if necessary.
After eye contact	Rinse with plenty of water immediately and seek medical advice.
After swallowing	Do not induce vomiting and seek medical advice immediately.
4.2 Most important symptoms and effects, both acute and delayed	General: Unconsciousness Dizziness Headache. In case of ingestion: Gastric and intestinal problems.
4.3 Indication of any immediate medical attention and special treatment needed	Treat symptomatically and supportively.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	SMALL FIRE: Dry chemical, CO_2, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam.

		Use of water spray when fighting fire may be inefficient. CAUTION: For mixtures containing alcohol or polar solvent, alcohol-resistant foam may be more effective.
	Unsuitable extinguishing media	water jet
5.2	**Special hazards arising from the substance or mixture**	Flammable. Explosive mixtures with air may even form at room temperature. Beware of re-ignition Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. Ignition by hot surfaces, sparks and open flames. May form toxic carbon oxides and sulfur oxides in case of fire.
5.3	**Advice for firefighters**	Do not expose to high temperature. Danger of bursting and explosion. Use fine water spray to cool endangered containers. Move undamaged containers from immediate hazard area. Do not allow fire water to penetrate into surface or ground water. Fire residuals and contaminated extinguishing water must be disposed of in accordance with the regulations of the local authorities.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	**Personal precautions, protective equipment and emergency procedures**	Remove persons not involved upwind. Wear a self-contained breathing apparatus and chemical protective clothing. Solvent-resistant protective clothing recommended.
6.2	**Environmental precautions**	Plug leak if safely possible. Do not allow to enter drains, surface waters, basements or pits. When released into the environment, alert police and fire brigade.
6.3	**Methods and material for containment and cleaning up**	In case of spills of large quantities: Dam spills and pump to remove. Explosion protection required. Absorb leftover product with non-flammable liquid-binding material (e.g. earth, sand, vermiculite or ground sand stone) and place in closed containers for disposal.
6.4	**Reference to other sections**	Section 8 for information on personal protection equipment. Section 13 for disposal information

SECTION 7: HANDLING AND STORAGE

7.1	**Precautions for safe handling**	Provide adequate ventilation, and local exhaust as needed. Provide room air exhaust at ground level. Concentrated vapours are heavier than air. Avoid the formation of aerosol. Do not breathe vapours. Use only explosion-protected equipment/instruments. Do not use air pressure..
7.2	**Conditions for safe storage, including any incompatibilities**	
	Advice on protection against fire and explosion	Keep away from sources of ignition. - No smoking. Take precautionary measures against static discharge. Beware of re-ignition. Potentially explosive mixture may form within partially empty containers. Emergency cooling must be provided for in case of a fire in the vicinity. Do not weld.
	Storage	Storage temperature: ambient Keep container dry. Keep container tightly closed in a cool, well-ventilated place. Protect from direct sunlight.
	Packaging material	Recommended: Stainless steel, Iron
	Incompatibility	To be avoided: Plastic materials
	Advice on common storage	Observe prohibition against storing together!
	Storage class	6.1B: Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials
	Storage stability	Stable under recommended storage conditions
7.3	**Specific end use(s)**	As given in Section 1.2

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	**Control parameters**	No Occupational Exposure Limit defined; To be handled under strictly controlled conditions
8.2	**Exposure controls**	
	Appropriate engineering controls	Explosion protection required. Provide good ventilation and/or an exhaust system in the work area.
	Personal protective equipment	
	Eye/ face protection	closed goggles, face shield
	Skin protection	

Hand protection	Butyl-rubber	0.5 mm	> 480 min
Body protection	Use solvent-resistant protective clothing. Flame-retardant antistatic protective clothing; safety shoes		
Respiratory protection	Respiratory equipment with suitable filter or a self-contained respiratory apparatus.		
Thermal hazards	Combustible liquid; do not expose to heat		
Industrial hygiene	Do not inhale vapours / aerosols. Avoid contact with skin and eyes. Remove immediately all contaminated clothing. Use disposable clothing if appropriate. Smoking, eating and drinking should be prohibited in the application area.		

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	liquid
Color	Colorless to pale yellow
Odour	Stench
Odour threshold	Not determined
pH	Not determined (does not liberate H ions when dissolved)
Melting point	No data available
Boiling point	157°C
Flash point	74°C (Closed cup)
Evaporation rate	No data available
Flammability (solid, gas)	flammable
Flammability limits	Lower: 2.3%; Upper:18%
Vapour pressure	0.76hPa at 20°C
Vapour density	2.7 (air = 1)
Relative density	1.114 at 25°C
Solubility in water	soluble
Partition coefficient	-0.326 (log P octanol-water)
Ignition temperature	No data available
Decomposition temperature	No data available
Viscosity at 20 °C	No data available
Particle characteristics	Not applicable (substance is a liquid)
9.2 Other information	No further information
Explosive properties	No explosive properties based on chemical structure
Oxidizing properties	no oxidizing properties based on chemical structure

SECTION 10: STABILITY AND REACTIVITY

10.1	**Reactivity**	Vapours form potentially explosive mixtures with air. Heavier than air, they proceed at floor level and may back-flash over great distances when ignited. May become electrostatically charged.
10.2	**Chemical stability**	At ambient temperature the product is stable over longer periods.
10.3	**Possibility of hazardous reactions**	This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. No decomposition if stored and applied as directed.
10.4	**Conditions to avoid**	Highly flammable. Concentrated vapours are heavier than air. Forms explosive mixtures with air, also in empty, uncleaned containers.
10.5	**Incompatible materials**	May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
10.6	**Hazardous decomposition products**	Thermal decomposition products- carbon oxides and sulfur oxides

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50	oral	rat	336mg/kg bw	**Category 3, H301**
LC50	inhalation	4h, rat	2mg/l	**Category 3, H331**
LD50	Dermal	rabbit	112 ml/kg bw	**Category 2, H310**

Skin irritation	Corrosive **Category 2, H315**
Serious eye irritation	Irritating **Category 1 H318**
Respiratory or skin sensitization	Sensitizing **Category 1, H317**
Germ cell mutagenicity	Non-mutagenic

	Carcinogenicity	Non-carcinogenic
	Reproductive toxicity	NOAEL 15mg/kg bw/day
	STOT-single exposure	No further data
	STOT-repeated exposure	**Category 2; H373**; target organs: liver and heart
	Aspiration hazard	no data available
11.2	**Information on other hazards**	
	Endocrine disrupting properties	No endocrine disrupting properties
	Other information	No further information

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Aquatic toxicity

Toxicity to fish	LC50	96h	37mg/L	*Leuciscus idus*
Toxicity to aquatic invertebrates	EC50	48h	0.4mg/L	*Daphnia magna*
Toxicity to aquatic algae and cyanobacteria	ErC50	72h	19 mg/L	*Desmodesmus subspicatus*
Toxicity to microorganisms	EC50	17h	125mg	*Pseudomonas putida*

12.2	**Persistence and degradability**	
	Biodegradation	not biodegradable (69% in 60days) **Aq. Chr. Tox. Cat 2, H411**
12.3	**Bioaccumulative potential**	log Kow -0.326; not expected to bio-accumulate
12.4	**Mobility in soil**	not expected to absorb into soil, low solubility in aqueous solutions
12.5	**Results of PBT and vPvB assessment**	Not a PBT, vPvB substance according to the REACH regulation
12.6	**Endocrine disrupting properties**	No endocrine disrupting properties
12.7	**Other adverse effects**	No further information available

SECTION 13: DISPOSAL CONSIDERATIONS

13.1	**Waste treatment methods**	Observe all national, state and local environmental regulations.
	Product disposal	Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
	Packaging disposal	Clean container with water. Recover waste water for processing later. Destroy packaging by incineration at an approved waste disposal site.
	Sewage disposal	Do not dispose in sewage.

SECTION 14: TRANSPORT INFORMATION

		ADR/RID	**IMDG**	**ICAO/IATA**
14.1	**UN Number**	2966	2966	2966
14.2	**UN proper shipping name**	**THIOGLYCOL**		
14.3	**Transport hazard class**	6.1	6.1	6.1
14.4	**Packaging group**	II	II	II
14.5	**Environmental hazards**	No data available		
14.6	**Special precautions for the user**	Flammable liquid Cat. 3; Flash point 30^{o}C (closed cup)		
	EmS Number	F-E, S-C		
14.7	**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	See regulatory information for transport approval		

SECTION 15: REGULATORY INFORMATION

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

Major accident hazard **Seveso III** Acute Toxic

International Chemical Inventory Status

USA (TSCA)	Listed (Tracking No 3301)
Canada (DSL)	listed
Australia (AICS)	listed
Japan (MITI)	Listed (MITI No. 2-458)
Korea (KECL)	Listed (KE No. 23095)
Philippines (PICCS)	listed
China	listed
New Zealand	listed
Taiwan	listed

15.2 Chemical safety assessment Chemical Safety Assessment has not been carried out.

SECTION 16: OTHER INFORMATION

Indication of changes: Sections in which changes have been made since the last version are marked with a diamond ◆ in the left hand margin.

Abbreviations and acronyms:

ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (division of the American Chemical Society)
CLP	Classification for Labeling and Packaging
DSL	Domestic Substances List
EC	European Commission
EINECS	European Inventory of Existing Commercial Chemical Substances
GHS	Globally Harmonized System of Classification and Labeling of Chemicals
IATA	International Air Transport Association
IBC	International Bulk Chemical
ICAO	International Civil Aviation Organization
IMDG	International Maritime Code for Dangerous Goods
KECL	Korea Existing Chemicals List
LD50	Lethal dose, 50 percent
MARPOL	International Convention for the Prevention of Pollution from Ships
MITI	Ministry of International Trade and Industry
PBT	Persistent, bioaccumulative and toxic substances
PICCS	Philippine Inventory of Chemicals and Chemical Substances
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT	Specific target organ toxicity
TSCA	Toxic Substances Control Act
UN	United Nations
vPVB	(very) Persistent, (very) Bioaccumulative

Key literature references and sources for data

Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

Echa https://echa.europa.eu/registration-dossier/-/registered-dossier/2206

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