



Safety Data Sheet

Cat. # BC98

β -Mercaptoethanol

Size: 100ml





2-mercaptoethanol

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830
Revision date: 5/11/2017

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

1.1. Product identifier

Product form	: Substance
Substance name	: 2-mercaptoethanol
EC-No.	: 200-464-6
CAS-No.	: 60-24-2
Product code	: P001_103M
Type of product	: Pure substance
Formula	: C2H6OS
Synonyms	: 1-ethanol-2-thiol / 1-hydroxy-2-mercaptoethane / 1-mercapto-2-hydroxyethane / 2-hydroxy-1-ethanethiol / 2-hydroxyethanethiol / 2-hydroxyethyl mercaptan / 2-ME / 2-mercapto-1-ethanol / 2-mercaptoethanol / 2-mercaptoethyl alcohol / 2-thioethanol / beta-hydroxyethanethiol / beta-hydroxyethylmercaptan / beta-mercaptoethanol / BME / emery 5791 / ethanol, 2-mercapto- / ethylene glycol, monothio- / ethylene thioglycol / hydroxyethyl mercaptan / mercapto-2 ethanol / METH / monothioethyleneglycol / monothioglycol / thioethylene glycol / thioglycol / thiomonoglycol / USAF EK-4196
Product group	: Raw material
BIG No	: 10274

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

1.2.1. Relevant identified uses

Use of the substance/mixture	: Solvent Pesticide: intermediate product
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1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	

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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
Acute toxicity (dermal), Category 3	H311
Acute toxicity (inhal.), Category 3	H331
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, category 1A	H317
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

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

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



CLP Signal word

: Danger

Hazard statements (CLP)

: H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.
H373 - May cause damage to organs through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face 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 protective gloves/protective clothing/eye protection/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P302+P352 - IF ON SKIN: Wash with plenty of water.
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.
P312 - Call a POISON CENTRE or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

2-mercaptoethanol

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-mercaptoethanol	(CAS-No.) 60-24-2 (EC-No.) 200-464-6	100	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation

: Remove the victim into fresh air. Immediately consult a doctor/medical service.

First-aid measures after skin contact

: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Consult a doctor/medical service.

First-aid measures after eye contact

: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist. Do not apply neutralizing agents.

First-aid measures after ingestion

: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation

: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Vomiting. Respiratory difficulties.

Symptoms/effects after skin contact

: Red skin. Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact

: Corrosion of the eye tissue. Inflammation/damage of the eye tissue.

Symptoms/effects after ingestion

: Irritation of the gastric/intestinal mucosa. Nausea. Abdominal pain.

Chronic symptoms

: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.

Unsuitable extinguishing media

: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Fire hazard

: DIRECT FIRE HAZARD: Material presenting a fire hazard. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Hazardous decomposition products in case of fire

: Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire

: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

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Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Face-shield. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit.
Emergency procedures	: Mark the danger area. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. If reacting: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water. On heating: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	: Take up liquid spill into absorbent material, e.g.: dry sand/earth/vermiculite powdered limestone or saw dust. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Leftovers: neutralize with an aqueous solution of sodium hypochlorite. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Use earthed equipment. Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Exhaust gas must be neutralised. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.
Maximum storage period	: 24 months
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. alcohols. water/moisture.
Storage area	: Store in a cool area. Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Keep locked up. Provide for a tub to collect spills. Provide the tank with earthing. Unauthorized persons are not admitted. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)

No additional information available

2-mercaptoethanol

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-mercaptoethanol (60-24-2)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	0.6 mg/kg bw/day
Long-term - systemic effects, inhalation	4 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	0.0004 mg/l
PNEC aqua (marine water)	0.00004 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	0.0015 mg/kg dwt
PNEC sediment (marine water)	0.00015 mg/kg dwt

PNEC (Soil)

PNEC soil	0.0000637 mg/kg dwt
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PNEC (STP)

PNEC sewage treatment plant	60 mg/l
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8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Materials for protective clothing:

GIVE GOOD RESISTANCE: neoprene. nitrile rubber. PVC. plastics. rubber

Hand protection:

Gloves

Eye protection:

Face shield

Skin and body protection:

Protective clothing

Respiratory protection:

High gas/vapour concentration: full face mask with filter type A

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 78.13 g/mol
Colour	: Colourless to light yellow.
Odour	: Repulsive odour.
Odour threshold	: No data available
pH	: 4.6 - 6.0 (50 %)
Relative evaporation rate (butylacetate=1)	: < 1
Melting point	: < -100 °C
Freezing point	: No data available
Boiling point	: 155.8 °C (1013.3 hPa)
Flash point	: 74 °C (Open cup, 1013.25 hPa)
Auto-ignition temperature	: 295 °C
Decomposition temperature	: 157 °C
Flammability (solid, gas)	: Not applicable

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Vapour pressure	: 1.33 hPa (20 °C)
Vapour pressure at 50 °C	: 11 hPa
Relative vapour density at 20 °C	: 2.7
Relative density	: 1.11 (20 °C)
Relative density of saturated gas/air mixture	: 1
Density	: 1110 kg/m ³ (20 °C)
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in other organic solvents. Water: 100 g/100ml (20 °C)
Log Pow	: -0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Viscosity, kinematic	: 2.9 mm ² /s (20 °C, Calculated)
Viscosity, dynamic	: 0.322 mPa·s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 2.3 - 18 vol %
Lower explosive limit (LEL)	: 2.3 vol %
Upper explosive limit (UEL)	: 18 vol %

9.2. Other information

VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers: (increased) risk of fire. Reacts violently with many compounds e.g.: with (strong) bases and (strong) reducers. Decomposes slowly on exposure to water (moisture) with (some) acids.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Toxic if swallowed.
Acute toxicity (dermal)	: Toxic in contact with skin.
Acute toxicity (inhalation)	: Toxic if inhaled. Harmful if inhaled.

2-mercaptoethanol (60-24-2)

LD50 oral rat	98 - 168 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Weight of evidence, Oral)
LD50 dermal rabbit	112 - 224 mg/kg bodyweight (Other, 24 h, Rabbit, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	2.03 mg/l (Other, 4 h, Rat, Male, Weight of evidence, Inhalation (vapours))

Skin corrosion/irritation	: Causes skin irritation. pH: 4.6 - 6.0 (50 %)
Serious eye damage/irritation	: Causes serious eye damage. pH: 4.6 - 6.0 (50 %)
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

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2-mercaptoethanol (60-24-2)

Viscosity, kinematic	2.9 mm ² /s (20 °C, Calculated)
Potential adverse human health effects and symptoms	: Odour tolerance may develop. Toxic if swallowed. Fatal in contact with skin. Causes skin irritation. Toxic if inhaled. Causes serious eye damage. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Dangerous for the environment.
Ecology - air	: Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Photolysis in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water	: Very toxic to crustacea. Harmful to fishes. Groundwater pollutant. Inhibition of activated sludge. Harmful to algae.
Acute aquatic toxicity	: Very toxic to aquatic life.
Chronic aquatic toxicity	: Very toxic to aquatic life with long lasting effects.

2-mercaptoethanol (60-24-2)

LC50 fish 1	37 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	0.4 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae (1)	19 mg/l (OECD 201: Alga, Growth Inhibition Test, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

2-mercaptoethanol (60-24-2)

Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.105 g O ₂ /g substance
Chemical oxygen demand (COD)	1.894 g O ₂ /g substance

12.3. Bioaccumulative potential

2-mercaptoethanol (60-24-2)

Log Pow	-0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

2-mercaptoethanol (60-24-2)

Log Koc	0.122 (log Koc, PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Waste treatment methods.
Product/Packaging disposal recommendations	: Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery.
Additional information	: Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
European List of Waste (LoW) code	: 15 01 10* - packaging containing residues of or contaminated by dangerous substances 07 07 04* - other organic solvents, washing liquids and mother liquors

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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: UN 2966
UN-No. (IMDG)	: UN 2966
UN-No. (IATA)	: UN 2966
UN-No. (ADN)	: UN 2966
UN-No. (RID)	: UN 2966

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Thioglycol
Proper Shipping Name (IMDG)	: thioglycol
Proper Shipping Name (IATA)	: Thioglycol
Proper Shipping Name (ADN)	: Thioglycol
Proper Shipping Name (RID)	: Thioglycol
Transport document description (ADR)	: UN 2966 Thioglycol, 6.1, II, (D/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 2966 thioglycol, 6.1, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1
Danger labels (ADR)	: 6.1



IMDG

Transport hazard class(es) (IMDG)	: 6.1
Danger labels (IMDG)	: 6.1



IATA

Transport hazard class(es) (IATA)	: 6.1
Hazard labels (IATA)	: 6.1



ADN

Transport hazard class(es) (ADN)	: 6.1
Danger labels (ADN)	: 6.1



RID

Transport hazard class(es) (RID)	: 6.1
Danger labels (RID)	: 6.1

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14.4. Packing group

Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

14.5. Environmental hazards

Dangerous for the environment	: Yes
Marine pollutant	: Yes
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Transport regulations (ADR)	: Subject
Classification code (ADR)	: T1
Hazard identification number (Kemler No.)	: 60
Orange plates	:



Tunnel restriction code (ADR)	: D/E
EAC code	: 2X

Transport by sea

Transport regulations (IMDG)	: Subject
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A

Air transport

Transport regulations (IATA)	: Subject to the provisions
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Inland waterway transport

Classification code (ADN)	: T1
Carriage permitted (ADN)	: T

Rail transport

Transport regulations (RID)	: Subject
Classification code (RID)	: T1

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

2-mercaptoethanol is not on the REACH Candidate List

2-mercaptoethanol is not on the REACH Annex XIV List

2-mercaptoethanol is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

2-mercaptoethanol is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

VOC content	: 100 %
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15.1.2. National regulations

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



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Revision date: 5/11/2017

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

1.1. Product identifier

Product form	: Substance
Substance name	: 2-mercaptoethanol
EC-No.	: 200-464-6
CAS-No.	: 60-24-2
Product code	: P001_103M
Type of product	: Pure substance
Formula	: C2H6OS
Synonyms	: 1-ethanol-2-thiol / 1-hydroxy-2-mercaptoethane / 1-mercapto-2-hydroxyethane / 2-hydroxy-1-ethanethiol / 2-hydroxyethanethiol / 2-hydroxyethyl mercaptan / 2-ME / 2-mercapto-1-ethanol / 2-mercaptoethanol / 2-mercaptoethyl alcohol / 2-thioethanol / beta-hydroxyethanethiol / beta-hydroxyethylmercaptan / beta-mercaptoethanol / BME / emery 5791 / ethanol, 2-mercapto- / ethylene glycol, monothio- / ethylene thioglycol / hydroxyethyl mercaptan / mercapto-2 ethanol / METH / monothioethyleneglycol / monothioglycol / thioethylene glycol / thioglycol / thiomonoglycol / USAF EK-4196
Product group	: Raw material
BIG No	: 10274

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

1.2.1. Relevant identified uses

Use of the substance/mixture	: Solvent Pesticide: intermediate product
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1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Geno Technology, Inc./ G-Biosciences
9800 Page Avenue
63132-1429 Saint Louis - United States
T 800-628-7730 - F 314-991-1504
technical@GBiosciences.com - www.GBiosciences.com

1.4. Emergency telephone number

Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Belfast Centre) Royal Victoria Hospital	Grosvenor Road BT12 6BA Belfast	0344 892 0111	
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH Birmingham	0344 892 0111	
United Kingdom	National Poisons Information Service (Cardiff Centre) Gwenwyn Ward, Llandough Hospital	Penarth CF64 2XX Cardiff	0344 892 0111	
United Kingdom	National Poisons Information Service Edinburgh Royal Infirmary of Edinburgh	Little France Crescent EH16 4SA Edinburgh	0344 892 0111	
United Kingdom	Guy's & St Thomas' Poisons Unit Medical Toxicology Unit, Guy's & St Thomas' Hospital Trust	Avonley Road SE14 5ER London	+44 20 7188 7188	
United Kingdom	National Poisons Information Service (Newcastle Centre) Regional Drugs and Therapeutics Centre, Wolfson Unit	Claremont Place Newcastle-upon-Tyne NE1 4LP Newcastle	0344 892 0111	

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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
Acute toxicity (dermal), Category 3	H311
Acute toxicity (inhal.), Category 3	H331
Acute toxicity (inhalation:dust,mist) Category 4	H332
Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 1	H318
Skin sensitisation, category 1A	H317
Specific target organ toxicity — Repeated exposure, Category 2	H373
Hazardous to the aquatic environment — Acute Hazard, Category 1	H400
Hazardous to the aquatic environment — Chronic Hazard, Category 1	H410

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

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

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



CLP Signal word

: Danger

Hazard statements (CLP)

: H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.
H373 - May cause damage to organs through prolonged or repeated exposure.
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P260 - Do not breathe dust/fume/gas/mist/vapours/spray.
P264 - Wash hands, forearms and face 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 protective gloves/protective clothing/eye protection/face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor.
P302+P352 - IF ON SKIN: Wash with plenty of water.
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.
P312 - Call a POISON CENTRE or doctor if you feel unwell.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P330 - Rinse mouth.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P361+P364 - Take off immediately all contaminated clothing and wash it before reuse.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P391 - Collect spillage.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent

2-mercaptoethanol

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
2-mercaptoethanol	(CAS-No.) 60-24-2 (EC-No.) 200-464-6	100	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation), H331 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1A, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general

: Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation

: Remove the victim into fresh air. Immediately consult a doctor/medical service.

First-aid measures after skin contact

: Wash immediately with lots of water. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Consult a doctor/medical service.

First-aid measures after eye contact

: Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist. Do not apply neutralizing agents.

First-aid measures after ingestion

: Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Call Poison Information Centre (www.big.be/antigif.htm). Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation

: Dry/sore throat. Coughing. Irritation of the respiratory tract. Irritation of the nasal mucous membranes. Nausea. Headache. EXPOSURE TO HIGH CONCENTRATIONS: Vomiting. Respiratory difficulties.

Symptoms/effects after skin contact

: Red skin. Tingling/irritation of the skin. ON CONTINUOUS EXPOSURE/CONTACT: Caustic burns/corrosion of the skin.

Symptoms/effects after eye contact

: Corrosion of the eye tissue. Inflammation/damage of the eye tissue.

Symptoms/effects after ingestion

: Irritation of the gastric/intestinal mucosa. Nausea. Abdominal pain.

Chronic symptoms

: ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Skin rash/inflammation.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

: Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.

Unsuitable extinguishing media

: Water (quick-acting extinguisher, reel); risk of puddle expansion. Water; risk of puddle expansion.

5.2. Special hazards arising from the substance or mixture

Fire hazard

: DIRECT FIRE HAZARD: Material presenting a fire hazard. INDIRECT FIRE HAZARD: Temperature above flashpoint: higher fire/explosion hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Hazardous decomposition products in case of fire

: Toxic fumes may be released.

5.3. Advice for firefighters

Precautionary measures fire

: Exposure to fire/heat: keep upwind. Exposure to fire/heat: consider evacuation. Exposure to fire/heat: seal off low-lying areas. Exposure to fire/heat: have neighbourhood close doors and windows.

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Firefighting instructions	: Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Face-shield. Protective clothing. Large spills/in enclosed spaces: compressed air apparatus. Large spills/in enclosed spaces: gas-tight suit.
Emergency procedures	: Mark the danger area. No naked flames. Wash contaminated clothes. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: keep upwind. In case of reactivity hazard: consider evacuation.

6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods and material for containment and cleaning up

For containment	: Contain released product, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Hazardous reaction: measure explosive gas-air mixture. If reacting: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water. On heating: dilute combustible/toxic gases/vapours. Take account of toxic/corrosive precipitation water.
Methods for cleaning up	: Take up liquid spill into absorbent material, e.g.: dry sand/earth/vermiculite powdered limestone or saw dust. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Leftovers: neutralize with an aqueous solution of sodium hypochlorite. Damaged/cooled tanks must be emptied. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Use earthed equipment. Keep away from naked flames/heat. At temperature > flashpoint: use spark-/explosionproof appliances. In finely divided state: use spark-/explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Carry operations in the open/under local exhaust/ventilation or with respiratory protection. Exhaust gas must be neutralised. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	: Store in a well-ventilated place. Keep cool. Store locked up. Keep container tightly closed.
Maximum storage period	: 24 months
Heat and ignition sources	: KEEP SUBSTANCE AWAY FROM: heat sources.
Information on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. reducing agents. (strong) acids. (strong) bases. alcohols. water/moisture.
Storage area	: Store in a cool area. Keep out of direct sunlight. Store in a dry area. Ventilation at floor level. Fireproof storeroom. Keep locked up. Provide for a tub to collect spills. Provide the tank with earthing. Unauthorized persons are not admitted. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.

7.3. Specific end use(s)

No additional information available

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-mercaptoethanol (60-24-2)

DNEL/DMEL (Workers)

Long-term - systemic effects, dermal	0.6 mg/kg bw/day
Long-term - systemic effects, inhalation	4 mg/m ³

PNEC (Water)

PNEC aqua (freshwater)	0.0004 mg/l
PNEC aqua (marine water)	0.00004 mg/l

PNEC (Sediment)

PNEC sediment (freshwater)	0.0015 mg/kg dwt
PNEC sediment (marine water)	0.00015 mg/kg dwt

PNEC (Soil)

PNEC soil	0.0000637 mg/kg dwt
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PNEC (STP)

PNEC sewage treatment plant	60 mg/l
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8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Materials for protective clothing:

GIVE GOOD RESISTANCE: neoprene. nitrile rubber. PVC. plastics. rubber

Hand protection:

Gloves

Eye protection:

Face shield

Skin and body protection:

Protective clothing

Respiratory protection:

High gas/vapour concentration: full face mask with filter type A

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Molecular mass	: 78.13 g/mol
Colour	: Colourless to light yellow.
Odour	: Repulsive odour.
Odour threshold	: No data available
pH	: 4.6 - 6.0 (50 %)
Relative evaporation rate (butylacetate=1)	: < 1
Melting point	: < -100 °C
Freezing point	: No data available
Boiling point	: 155.8 °C (1013.3 hPa)
Flash point	: 74 °C (Open cup, 1013.25 hPa)
Auto-ignition temperature	: 295 °C
Decomposition temperature	: 157 °C
Flammability (solid, gas)	: Not applicable

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Vapour pressure	: 1.33 hPa (20 °C)
Vapour pressure at 50 °C	: 11 hPa
Relative vapour density at 20 °C	: 2.7
Relative density	: 1.11 (20 °C)
Relative density of saturated gas/air mixture	: 1
Density	: 1110 kg/m ³ (20 °C)
Solubility	: Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in other organic solvents. Water: 100 g/100ml (20 °C)
Log Pow	: -0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Viscosity, kinematic	: 2.9 mm ² /s (20 °C, Calculated)
Viscosity, dynamic	: 0.322 mPa·s (20 °C)
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 2.3 - 18 vol %
Lower explosive limit (LEL)	: 2.3 vol %
Upper explosive limit (UEL)	: 18 vol %

9.2. Other information

VOC content	: 100 %
Other properties	: Gas/vapour heavier than air at 20°C. Clear. Slightly volatile. Acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts violently with (strong) oxidizers: (increased) risk of fire. Reacts violently with many compounds e.g.: with (strong) bases and (strong) reducers. Decomposes slowly on exposure to water (moisture) with (some) acids.

10.2. Chemical stability

Unstable on exposure to moisture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Hazardous decomposition products.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Toxic if swallowed.
Acute toxicity (dermal)	: Toxic in contact with skin.
Acute toxicity (inhalation)	: Toxic if inhaled. Harmful if inhaled.

2-mercaptoethanol (60-24-2)	
LD50 oral rat	98 - 168 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Weight of evidence, Oral)
LD50 dermal rabbit	112 - 224 mg/kg bodyweight (Other, 24 h, Rabbit, Male / female, Experimental value, Dermal)
LC50 inhalation rat (mg/l)	2.03 mg/l (Other, 4 h, Rat, Male, Weight of evidence, Inhalation (vapours))

Skin corrosion/irritation	: Causes skin irritation. pH: 4.6 - 6.0 (50 %)
Serious eye damage/irritation	: Causes serious eye damage. pH: 4.6 - 6.0 (50 %)
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
Aspiration hazard	: Not classified

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2-mercaptoethanol (60-24-2)

Viscosity, kinematic 2.9 mm²/s (20 °C, Calculated)

Potential adverse human health effects and symptoms : Odour tolerance may develop. Toxic if swallowed. Fatal in contact with skin. Causes skin irritation. Toxic if inhaled. Causes serious eye damage. Caution! Substance is absorbed through the skin.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Dangerous for the environment.
Ecology - air : Not included in the list of fluorinated greenhouse gases (Regulation (EU) No 517/2014). Photolysis in the air. Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009).
Ecology - water : Very toxic to crustacea. Harmful to fishes. Groundwater pollutant. Inhibition of activated sludge. Harmful to algae.
Acute aquatic toxicity : Very toxic to aquatic life.
Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

2-mercaptoethanol (60-24-2)

LC50 fish 1	37 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value)
EC50 Daphnia 1	0.4 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
EC50 72h algae (1)	19 mg/l (OECD 201: Alga, Growth Inhibition Test, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

2-mercaptoethanol (60-24-2)

Persistence and degradability	Non degradable in the soil. Not readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.105 g O ₂ /g substance
Chemical oxygen demand (COD)	1.894 g O ₂ /g substance

12.3. Bioaccumulative potential

2-mercaptoethanol (60-24-2)

Log Pow	-0.056 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

2-mercaptoethanol (60-24-2)

Log Koc	0.122 (log Koc, PCKOCWIN v1.66, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Waste treatment methods.
Product/Packaging disposal recommendations : Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Remove to an authorized waste incinerator for solvents with energy recovery.
Additional information : Hazardous waste according to Directive 2008/98/EC, as amended by Regulation (EU) No 1357/2014 and Regulation (EU) No 2017/997.
European List of Waste (LoW) code : 15 01 10* - packaging containing residues of or contaminated by dangerous substances
07 07 04* - other organic solvents, washing liquids and mother liquors

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SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

UN-No. (ADR)	: UN 2966
UN-No. (IMDG)	: UN 2966
UN-No. (IATA)	: UN 2966
UN-No. (ADN)	: UN 2966
UN-No. (RID)	: UN 2966

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: Thioglycol
Proper Shipping Name (IMDG)	: thioglycol
Proper Shipping Name (IATA)	: Thioglycol
Proper Shipping Name (ADN)	: Thioglycol
Proper Shipping Name (RID)	: Thioglycol
Transport document description (ADR)	: UN 2966 Thioglycol, 6.1, II, (D/E), ENVIRONMENTALLY HAZARDOUS
Transport document description (IMDG)	: UN 2966 thioglycol, 6.1, II, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS
Transport document description (IATA)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (ADN)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS
Transport document description (RID)	: UN 2966 Thioglycol, 6.1, II, ENVIRONMENTALLY HAZARDOUS

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 6.1
Danger labels (ADR)	: 6.1



IMDG

Transport hazard class(es) (IMDG)	: 6.1
Danger labels (IMDG)	: 6.1



IATA

Transport hazard class(es) (IATA)	: 6.1
Hazard labels (IATA)	: 6.1



ADN

Transport hazard class(es) (ADN)	: 6.1
Danger labels (ADN)	: 6.1



RID

Transport hazard class(es) (RID)	: 6.1
Danger labels (RID)	: 6.1

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14.4. Packing group


Packing group (ADR)	: II
Packing group (IMDG)	: II
Packing group (IATA)	: II
Packing group (ADN)	: II
Packing group (RID)	: II

14.5. Environmental hazards

Dangerous for the environment	: Yes
Marine pollutant	: Yes
Other information	: No supplementary information available

14.6. Special precautions for user

Overland transport

Transport regulations (ADR)	: Subject
Classification code (ADR)	: T1
Hazard identification number (Kemler No.)	: 60
Orange plates	: 

Tunnel restriction code (ADR)	: D/E
EAC code	: 2X

Transport by sea

Transport regulations (IMDG)	: Subject
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-A

Air transport

Transport regulations (IATA)	: Subject to the provisions
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Inland waterway transport

Classification code (ADN)	: T1
Carriage permitted (ADN)	: T

Rail transport

Transport regulations (RID)	: Subject
Classification code (RID)	: T1

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

2-mercaptoethanol is not on the REACH Candidate List

2-mercaptoethanol is not on the REACH Annex XIV List

2-mercaptoethanol is not subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

2-mercaptoethanol is not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC

VOC content	: 100 %
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15.1.2. National regulations

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

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SECTION 16: Other information

Full text of H- and EUH-statements:	
Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment — Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment — Chronic Hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1A	Skin sensitisation, category 1A
STOT RE 2	Specific target organ toxicity — Repeated exposure, Category 2
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Safety Data Sheet applicable for regions : GB - United Kingdom

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.