

# MSDS

## Material Safety Data Sheet

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU  
Classification according to Regulation (EC) No. 1272/2008 [CLP]

### 1. Product and Company Identification

<b>Product Name</b>	<b><math>\beta</math>-MERCAPTOETHANOL</b>
<b>Product References</b>	TBR0107 (50 mM, 100 mL)   TBR0108 (50 mM, 20 mL)   TBR0109 (25 mL)
<b>Brand</b>	TIARIS BIOSCIENCES Tiaris Biosciences SL. Parque Tecnológico Rabanales 21, Edificio Aldebarán, Calle Astrónoma Cecilia Payne s/n.
<b>Manufacturer/ Supplier</b>	14014. Córdoba, España Phone: +34 681 867 714   mailto: <a href="mailto:info@tiarisbiosciences.com">info@tiarisbiosciences.com</a> web: <a href="http://www.tiarisbiosciences.com">www.tiarisbiosciences.com</a>
<b>Emergency Telephone</b>	900-868538 (CHEMTREC Spain)   +34 931 768 545 (CHEMTREC International)

### 2. Hazards Identification

#### 2.1. Classification According to Regulation (EC) N°1272/2008 (CLP)

- H301** Toxic if swallowed (Category 3)
- H331** Toxic if inhaled (Category 3)
- H310** Fatal in contact with skin (Category 2)
- H315** Causes skin irritation (Category 2)
- H317** May cause an allergic skin reaction (Category 3)
- H318** Causes serious eye damage (Category 1A)
- H361** Suspected damaging fertility (Category 2)
- H373** May cause damage to organs through prolonged or repeated exposure if swallowed (Category 2)
- H400** Very toxic to aquatic life (Category 1)
- H411** Toxic to aquatic life with long lasting effect (Category 2)

#### 2.2. Label Elements and Precautionary Statements

Pictogram



Signal Word

**DANGER**

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### Hazard Statements

- H301 + H331** Toxic if swallowed or if inhaled.
- H310** Fatal in contact with skin.
- H315** Causes skin irritation.
- H317** May cause an allergic skin reaction.
- H318** Causes serious eye damage.
- H361f** Suspected of damaging fertility.
- H373** May cause damage to organs (Liver, Heart) through **prolonged or repeated exposure if swallowed.**
- H410** Very toxic to aquatic life with long lasting effects.

### Precautionary Statements

- P273** Avoid release to the environment.
- P280** Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301+P312+P330+P331** IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P303+P361+P353** IF ON SKIN (or hair): Take off immediately all contaminated clothing. Wash with plenty of water. Immediately call a POISON CENTER/doctor.
- P304+P340+P312** IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
- P305+P351+P338+P315** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- P337+P313** If eye irritation persists: Get medical advice/attention.

### 3. Composition / Information on Components

Chemical Name	CAS Number	EC Number	Concentration	Classification according to Regulation (EC) No.1272/2008 [CLP]
$\beta$ -Mercaptoethanol	60-24-2	200-464-6	$\leq 100 \%$	Acute Tox. 3, 2 Skin Corr. 2 Skin Sens. 1A Eye Dam. 1 Repr. 2 STOT RE. 2 Aquatic Acute 1 Aquatic Chronic 2 H301, H310, H315, H317, H318, H331, H361f, H373, H400, H411

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### 4. First-Aid Measures

<b>Inhalation</b>	After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.
<b>Skin Contact</b>	In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Call a physician immediately.
<b>Eye Contact</b>	After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.
<b>Ingestion</b>	If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.
<b>Notes to Physician</b>	No data available.

### 5. Fire Fighting Measures

<b>Extinguish Media</b>	
Suitable Extinguish Media	Water spray. Carbon dioxide (CO <sub>2</sub> ). Foam. Dry powder.
Unsuitable Extinguish Media	For this substance/ mixture no limitations of extinguishing agents are given.
<b>Special hazards arising from the substance or mixture</b>	<ul style="list-style-type: none"> <li>- Carbon oxides, sulfur oxides, combustible, acids, strong oxidizing agents.</li> <li>- Vapors are heavier than air and may spread along floors.</li> <li>- Forms explosive mixtures with air on intense heating.</li> <li>- Hazardous combustion gases or vapours.</li> <li>- Risk of explosion and/or of toxic gas formation exists with acids.</li> </ul>
<b>Advice for firefighters</b>	Stay in danger area only wearing self-contained breathing apparatus and protective gear. Remove container from danger area and cool with water.

### 6. Accidental Release Measures

<b>Personal Precautions, protective equipment and emergency procedures</b>	Ensure adequate ventilation
	Avoid contact with skin, eyes or clothing
	Use personal protection equipment
	Do not breathe vapors or aerosols
	Evacuate the danger area and proceed with emergency protocols
<b>Environmental Precautions</b>	Do not let product enter drains or waterways.
<b>Methods and Material for Containment and Cleaning up</b>	Cover drains. Take up carefully with liquid-absorbent material (e.g. Chemizorb®) and clean up affected area.

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### 7. Handling and Storage

<b>Precautions for Safe Handling</b>	<p>Work under hood. Do not get in eyes, on skin, or on clothing. Do not ingest.</p> <p>Provide suitable ventilation.</p> <p>Avoid generation of vapours.</p> <p>Wash hands and face after working with substance.</p>
<b>Conditions for Safe Storage, Including Any Incompatibilities</b>	<p>Keep tightly closed in a dry, cool and well-ventilated place. Keep in properly labelled containers.</p> <p>Keep away from open flames and sources of ignition.</p> <p>Storage class, TRGS 510: 6.1A Combustible, acute toxic Cat 1 and 2 / very toxic hazardous materials</p>
<b>Specific End Use(s)</b>	For research use only

### 8. Exposure Control/ Personal Protection

#### Ingredients with workplace control parameters

##### DNEL, Derived No Effect Level

Application Area	Routes of Exposure	Health Effect	Value
Worker DNEL, acute	Inhalation	Systemic Effects	0.17 mg/m <sup>3</sup>
Worker DNEL, longterm	Inhalation	Systemic Effects	0.17 mg/m <sup>3</sup>
Worker DNEL, longterm	Dermal	Systemic Effects	
Worker DNEL, acute	Dermal	Systemic Effects	

##### PNEC, Predicted No Effect Concentration

Compartment	Value
Fresh Water	0.0004 mg/L
Sea Water	0.00004 mg/L
Aquatic Intermittent Release	0.004 mg/L
Sewage Treatment Plant	60 mg/L
Fresh Water Sediment	0.0015 mg/kg
Sea Sediment	0.00015 mg/kg
Soil	0.000063 mg/kg

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### Personal Protective Equipment:

#### Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respiratory type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash hands with soap and water.

#### Eye Protection

Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

#### Skin and Body Protection Impervious Clothing.

Wear appropriate clothing. When selecting clothing, consider the concentration and amount of substance to be handled.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Do not let product enter drains.

## 9. Physical and Chemical Properties

<b>Appearance:</b>	Liquid
<b>Form:</b>	Liquid
<b>Colour:</b>	Colourless to light yellow
<b>Odour:</b>	Stench odour
<b>pH (Value):</b>	4.5-6 at 500 g/L (20°C)
<b>Boiling Point:</b>	155.8 °C
<b>Melting / Freezing Point:</b>	< -50°C
<b>Flash Point:</b>	74 °C
<b>Flammable Limits:</b>	Combustible
<b>Auto Ignition Temperature:</b>	No data available
<b>Decomposition Temperature:</b>	No data available
<b>Explosive Properties:</b>	Not classified as explosive Upper Explosion Limit 18%   Lower Explosion Limit 2.3%

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<b>Oxidising Properties:</b>	None
<b>Vapour Pressure (mm Hg):</b>	0.76 hPa (20 °C)
<b>Density (g/ml):</b>	1.114 g/cm <sup>3</sup> (25 °C)
<b>Solubility (Water):</b>	Soluble
<b>Partition Coefficient (n-Octanol: Water):</b>	Log Pow, -0.056
<b>Molecular Formula</b>	C <sub>2</sub> H <sub>6</sub> OS
<b>Molecular Weight</b>	78.13 g/mol

### 10. Stability and Reactivity

<b>Hazardous Reaction:</b>	Forms explosive mixtures with air on intense heating.
<b>Chemical Stability:</b>	Stable under standard ambient conditions.
<b>Hazardous Decomposition Product(s):</b>	See Section 5.
<b>Conditions to avoid:</b>	Strong heating, acids.
<b>Incompatible Materials:</b>	No data available.

### 11. Toxicology Information

**Acute toxicity:**

**LD50 Oral:** Mouse, 190 mg/kg. Possible damages: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

**LD50 Dermal :** Rabbit male and female, 112-224 mg/kg. Estimate: 50 mg/kg.

**LC50 Inhalation:** Estimate: 2.05 mg/L – vapor, rat male. Possible damages: mucosal irritations, cough, shortness of breath.

**Skin corrosion/irritation:** Causes irritation in rabbits (OECD Test Guideline 404).

**Serious eye damage/eye irritation:** Causes severe irritations en rabbit eyes (Draize Test). Risk of corneal clouding.

**Respiratory or skin sensitization:** Maximization test positive in guinea pig (OECD Test Guideline 406).

**Germ cell mutagenicity:** No data available.

**Chromosome Aberration Test:** Mouse, Bone Marrow – Negative (OECD Test Guideline 474).

**Carcinogenicity:** IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**Reproductive toxicity:** Suspected of damaged fertility.

**Teratogenicity:** no data available.

**Specific target organ toxicity – single exposure (GHS):** no data available.

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**Specific target organ toxicity – repeated exposure (GHS):** Ingestion may cause damage to organs (liver, heart) through prolonged or repeated.

**Aspiration hazard:** no data available.

**Additional information:**

- RTECS: KL5600000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema. Burning sensation, cough, laryngitis, shortness of breath, headache, nausea, vomiting, weakness, unconsciousness.

- The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) at levels of 0.1% or higher.

Repeated dose toxicity - Rat - male and female - Oral - 49 d - NOAEL (No observed adverse effect level) - 15 mg/kg - LOAEL (Lowest observed adverse effect level) - 50 mg/kg.

### 12. Ecological Information

	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
<b>Toxicity:</b>	EC50: 12 mg/L, 72 h ( <i>Desmodesmus subspicatus</i> )(OECD Test Guideline 201)	LC50: 37 mg/L, 96 h- ( <i>Leuciscus idus</i> ) - (Golden orfe) - (DIN 38412 T15)	EC50: 125 mg/L, 17 h ( <i>Pseudomonas putida</i> )(DIN 38 412 Part 8)	EC50: 1.52 mg/L, 48 h ( <i>Daphnia magna</i> )(OECD Test Guideline 211)
<b>Persistence and Degradability:</b>	Non degradable in the soil. Not readily biodegradable in water.			
<b>Bioaccumulative Potential</b>	Does not accumulate in organisms.			
<b>Mobility in Soil:</b>	Highly mobile in soil (log Koc, 0.122)			
<b>Results of PBT and vPvB assessment</b>	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.			
<b>Other Adverse Effect:</b>	Very toxic to aquatic life with long lasting effects			

### 13. Disposal Considerations

**Waste treatment methods:**

Disposal of this product, its solutions or of any by-products, shall comply with the requirements of all applicable local, regional or national/federal regulations. Empty containers may retain some product residues. This material and its container must be disposed of in according to approved disposal technique.

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### 14. Transport Information

IATA / ADR / DOT-US / IMDG:

UN number or ID number: ADR/RID: 2966    IMDG: 2966    IATA: 2966

UN Proper Shipping Name: Thioglycol

Transport Hazard Class(es): 6.1

Packing Group: II

Environmental Hazards: ADR/RID: yes | IMDG: Marine pollutant: yes | IATA: no

Special Precautions for User: Tunnel restriction code: D/E.

Maritime transport in bulk according to IMO instruments

### 15. Regulatory Information

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

Substances of Very High Concern: Not listed

Substance subject to authorization per REACH Annex XIV: Not listed

Restricted substances under EC 1907/2006, Annex XVII: Not listed

Regulation (EC) No 649/2012 (Rotterdam Convention - export/import of dangerous chemicals): Not Listed

Regulation (EU)No2019/1021(Stockholm Convention–persistent organic pollutants): Not Listed

EU - Substances Depleting the Ozone layer (1005/2009): Not Listed

### 16. Other Information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. *Tiaris Biosciences* shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.