



# SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:  
The Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

Revision date 21-Feb-2022

Revision Number 2

## 1. IDENTIFICATION

### Product identifier

**Product Name** ERYTHROLYSE - #10212

### Other means of identification

**Safety data sheet number** 10212

**Registration Number(s)** No information available

### Recommended use of the chemical and restrictions on use

**Recommended use** For research use only

### Supplier's details

#### Corporate Headquarters

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

#### Manufacturer

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#### Legal Entity / Contact Address

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### **Technical Service**

India: 91-124-4029300 or 1-800-180-1224  
South Africa: 27-11-442-85-08  
India: support.india@bio-rad.com  
South Africa: cdg\_techsupport\_eemea@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC India: 000-800-100-7141  
CHEMTREC South Africa: 0-800-983-611

## 2. HAZARDS IDENTIFICATION

### Classification of the substance or mixture

Not a hazardous substance or mixture according to the Globally Harmonised System (GHS)

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 5
Acute toxicity - Inhalation (Gases)	Category 4
Skin corrosion/irritation	Category 1 Sub-category B
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1
Acute aquatic toxicity	Category 3

### GHS Label elements, including precautionary statements



Signal word



Danger

**Hazard statements**

Harmful if swallowed  
May be harmful in contact with skin  
Harmful if inhaled  
Causes severe skin burns and eye damage  
May cause an allergic skin reaction  
Suspected of causing genetic defects  
May cause cancer  
Causes damage to organs  
Harmful to aquatic life

**Precautionary Statements - Prevention**

Do not handle until all safety precautions have been read and understood  
Wear protective gloves/protective clothing/eye protection/face protection  
Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapors/spray  
Contaminated work clothing should not be allowed out of the workplace  
Avoid release to the environment

**Precautionary Statements - Response**

Immediately call a POISON CENTER or doctor

**Eyes**

Immediately call a POISON CENTER or doctor

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Skin**

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]

If skin irritation or rash occurs: Get medical advice/attention

Wash contaminated clothing before reuse

**Inhalation**

IF INHALED: Remove person to fresh air and keep comfortable for breathing

Call a POISON CENTER or doctor if you feel unwell

Immediately call a POISON CENTER or doctor

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

Rinse mouth

Do NOT induce vomiting

**Precautionary Statements - Disposal**

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

**Other hazards which do not result in classification**

No information available

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

Not applicable

**Mixture**

Chemical name	CAS No	Weight-%
Diethylene glycol 111-46-6	111-46-6	20.3
Formaldehyde 50-00-0	50-00-0	5.4
Methanol 67-56-1	67-56-1	1.5

#### 4. FIRST AID MEASURES

##### Description of necessary first aid measures

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. If breathing has stopped, give artificial respiration. Get medical attention immediately. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, (trained personnel should) give oxygen. Delayed pulmonary edema may occur. Get immediate medical advice/attention.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get immediate medical advice/attention. May cause an allergic skin reaction.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Remove contact lenses, if present and easy to do. Continue rinsing. Get immediate medical advice/attention.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.

##### For emergency responders

<b>Self-protection of the first aider</b>	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid contact with skin, eyes or clothing. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid breathing vapors or mists. Use personal protective equipment as required. See section 8 for more information.
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##### Most important symptoms and effects, both acute and delayed

<b>Symptoms</b>	Burning sensation. Itching. Rashes. Hives. Coughing and/ or wheezing. Difficulty in breathing.
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##### Indication of immediate medical attention and special treatment needed, if necessary

<b>Note to physicians</b>	Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. May cause sensitization in susceptible persons. Treat symptomatically.
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#### 5. FIREFIGHTING MEASURES

##### Suitable Extinguishing Media

<b>Suitable Extinguishing Media</b>	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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**Large Fire**

CAUTION: Use of water spray when fighting fire may be inefficient.

**Unsuitable extinguishing media**

Do not scatter spilled material with high pressure water streams.

**Specific hazards arising from the chemical****Specific hazards arising from the chemical**

The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapors. Product is or contains a sensitizer. May cause sensitization by skin contact.

**Special protective actions for fire-fighters****Special protective equipment and precautions for fire-fighters**

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

**6. ACCIDENTAL RELEASE MEASURES****Personal precautions, protective equipment and emergency procedures****Personal precautions**

Attention! Corrosive material. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid breathing vapors or mists.

**Environmental precautions****Environmental precautions**

Prevent further leakage or spillage if safe to do so. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains.

**Methods and material for containment and cleaning up****Methods for containment**

Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up**

Pick up and transfer to properly labeled containers.

**Prevention of secondary hazards**

Clean contaminated objects and areas thoroughly observing environmental regulations.

**Other information**

Refer to protective measures listed in Sections 7 and 8.

**7. HANDLING AND STORAGE****Precautions for safe handling****Advice on safe handling**

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse. Remove contaminated clothing and shoes. Avoid breathing vapors or mists.

**Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Protect from moisture. Store locked up. Store away from other materials.

**Incompatible materials**

Acids. Bases. Oxidizing agent.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Control parameters****Exposure guidelines**

Chemical name	ACGIH TLV	OSHA PEL	Ontario	European Union	
Formaldehyde 50-00-0	STEL: 0.3 ppm TWA: 0.1 ppm	TWA: 0.75 ppm (vacated) TWA: 3 ppm unless specified in 1910.1048 (vacated) STEL: 10 ppm 30 min unless specified in 1910.1048 (vacated) Ceiling: 5 ppm unless specified in 1910.1048 STEL: 2 ppm see 29 CFR 1910.1048	STEL: 1 ppm CEV: 1.5 ppm	TWA: 0.37 mg/m³ TWA: 0.3 ppm *	
Methanol 67-56-1	STEL: 250 ppm TWA: 200 ppm S*	TWA: 200 ppm TWA: 260 mg/m³ (vacated) TWA: 200 ppm (vacated) TWA: 260 mg/m³ (vacated) STEL: 250 ppm (vacated) STEL: 325 mg/m³ (vacated) S*	TWA: 200 ppm STEL: 250 ppm Skin	TWA: 200 ppm TWA: 260 mg/m³ *	
Chemical name	China	Japan Society of Occupational Health	OEL	Australia	Taiwan
Diethylene glycol 111-46-6	-	-	-	23 ppm 100 mg/m³	-
Formaldehyde 50-00-0	Ceiling: 0.5 mg/m³ Ceiling Sensitizer+ G1(C**)	Ceiling: 0.2 ppm Ceiling: 0.24 mg/m³ TWA: 0.1 ppm TWA: 0.12 mg/m³	TWA: 0.3 ppm	1 ppm 1.2 mg/m³ 2 ppm STEL 2.5 mg/m³ STEL	TWA: 1 ppm TWA: 1.2 mg/m³ STEL: 2 ppm STEL: 2.4 mg/m³
Methanol 67-56-1	TWA: 25 mg/m³ STEL: 50 mg/m³ Skin*	TWA: 200 ppm TWA: 260 mg/m³ S*	TWA: 200 ppm STEL: 250 ppm Skin*	200 ppm 262 mg/m³ 250 ppm STEL 328 mg/m³ STEL	TWA: 200 ppm TWA: 262 mg/m³ STEL: 250 ppm STEL: 327.5 mg/m³ Skin*

**Appropriate engineering controls****Engineering controls**

Showers  
Eyewash stations  
Ventilation systems.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Tight sealing safety goggles. Face protection shield.

**Skin and body protection**

Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.

**Hand protection**

Wear suitable gloves. Impervious gloves.

**Respiratory protection**

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

**General hygiene considerations**

Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing and gloves, including the inside, before re-use. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

Physical state	Liquid	Odour	No information available
Appearance	Liquid	Odour threshold	No information available
Colour	Varies		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		No information available
Melting point / freezing point		No information available
Boiling point / boiling range		No information available
Flash point		No information available
Evaporation rate		No information available
Flammability (solid, gas)		No information available
Upper/lower flammability or explosive limits		
Upper flammability or explosive limits	Not applicable	
Lower flammability or explosive limits	Not applicable	
Vapour pressure		No information available
Vapour density		No information available
Relative density		No information available
Solubility(ies)		
Water solubility		No information available
Solubility in other solvents		No information available
Partition coefficient		No information available
Autoignition temperature		No information available
Decomposition temperature		No information available
Viscosity		
Kinematic viscosity		No information available
Dynamic viscosity		

Other information

Oxidising properties	Not applicable
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## 10. STABILITY AND REACTIVITY

Reactivity

Reactivity	No information available.
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Chemical stability

Stability	Stable under normal conditions.
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Explosion data

Sensitivity to mechanical impact	None
Sensitivity to static discharge	None.

Possibility of hazardous reactions

Possibility of hazardous reactions	None under normal processing.
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Conditions to avoid

Conditions to avoid	Exposure to air or moisture over prolonged periods. Excessive heat.
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Incompatible materials

Incompatible materials	Acids. Bases. Oxidizing agent.
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Hazardous decomposition products

Hazardous decomposition products	None known based on information supplied.
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## 11. TOXICOLOGICAL INFORMATION

Information on the likely routes of exposure

**Product Information****Inhalation**

Specific test data for the substance or mixture is not available. Corrosive by inhalation. (based on components). Inhalation of corrosive fumes/gases may cause coughing, choking, headache, dizziness, and weakness for several hours. Pulmonary edema may occur with tightness in the chest, shortness of breath, bluish skin, decreased blood pressure, and increased heart rate. Inhaled corrosive substances can lead to a toxic edema of the lungs. Pulmonary edema can be fatal. Harmful by inhalation.

**Eye contact**

Specific test data for the substance or mixture is not available. Causes serious eye damage. (based on components). Corrosive to the eyes and may cause severe damage including blindness. May cause irreversible damage to eyes.

**Skin contact**

Specific test data for the substance or mixture is not available. Corrosive. (based on components). Causes burns. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. May be harmful in contact with skin.

**Ingestion**

Specific test data for the substance or mixture is not available. Causes burns. (based on components). Ingestion causes burns of the upper digestive and respiratory tracts. May cause severe burning pain in the mouth and stomach with vomiting and diarrhea of dark blood. Blood pressure may decrease. Brownish or yellowish stains may be seen around the mouth. Swelling of the throat may cause shortness of breath and choking. May cause lung damage if swallowed. May be fatal if swallowed and enters airways.

**Symptoms**

Redness. Burning. May cause blindness. Coughing and/ or wheezing. Itching. Rashes. Hives.

**Acute toxicity****Numerical measures of toxicity****Unknown acute toxicity**

21.8 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (gas)

**The following values are calculated based on chapter 3.1 of the GHS document**

ATEmix (oral)	912.40 mg/kg
ATEmix (dermal)	3,744.30 mg/kg
ATEmix (inhalation-gas)	10,137.00 ppm
ATEmix (inhalation-dust/mist)	5.50 mg/l
ATEmix (inhalation-vapour)	2,065.40 mg/l

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Diethylene glycol	= 12565 mg/kg ( Rat )	= 11890 mg/kg ( Rabbit )	> 4600 mg/m <sup>3</sup> ( Rat ) 4 h
Formaldehyde	= 100 mg/kg ( Rat )	= 270 mg/kg ( Rabbit )	= 0.578 mg/L ( Rat ) 4 h
Methanol	= 6200 mg/kg ( Rat )	= 15840 mg/kg ( Rabbit ) = 15800 mg/kg ( Rabbit )	= 22500 ppm ( Rat ) 8 h = 64000 ppm ( Rat ) 4 h

**Delayed and immediate effects and also chronic effects from short and long term exposure****Skin corrosion/irritation**

Classification based on data available for ingredients. Causes burns.

**Serious eye damage/irritation**

Classification based on data available for ingredients. Risk of serious damage to eyes. Causes burns.

**Respiratory or skin sensitization**

May cause sensitization by skin contact.

**Germ cell mutagenicity** Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

**Carcinogenicity** Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

Chemical name	IARC
Formaldehyde	Group 1

**Reproductive toxicity** No information available.

**STOT - single exposure** Based on the classification criteria of the Globally Harmonized System as adopted in the country or region with which this safety data sheet complies, this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). Causes damage to organs if swallowed. Causes damage to organs if inhaled. May cause respiratory irritation.

**STOT - repeated exposure** No information available.

**Target organ effects** Respiratory system, Eyes, Skin, Central nervous system, Gastrointestinal tract (GI).

**Aspiration hazard** No information available.

## 12. ECOLOGICAL INFORMATION

### Toxicity

0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment

**Ecotoxicity** Harmful to aquatic life.

Chemical name	Algae/aquatic plants	Fish	Crustacea
Diethylene glycol	-	LC50: =75200mg/L (96h, <i>Pimephales promelas</i> )	EC50: =84000mg/L (48h, <i>Daphnia magna</i> )
Formaldehyde	-	LC50: 0.032 - 0.226mL/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: 100 - 136mg/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: 22.6 - 25.7mg/L (96h, <i>Pimephales promelas</i> ) LC50: 23.2 - 29.7mg/L (96h, <i>Pimephales promelas</i> ) LC50: =1510µg/L (96h, <i>Lepomis macrochirus</i> ) LC50: =41mg/L (96h, <i>Brachydanio rerio</i> )	EC50: 11.3 - 18mg/L (48h, <i>Daphnia magna</i> ) LC50: =2mg/L (48h, <i>Daphnia magna</i> )
Methanol	-	LC50: 13500 - 17600mg/L (96h, <i>Lepomis macrochirus</i> ) LC50: 18 - 20mL/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: 19500 - 20700mg/L (96h, <i>Oncorhynchus mykiss</i> ) LC50: =28200mg/L (96h, <i>Pimephales promelas</i> ) LC50: >100mg/L (96h, <i>Pimephales promelas</i> )	-

### Persistence and degradability

No information available.

### Bioaccumulative potential

There is no data for this product.



**Mobility****Mobility in soil** No information available.**Mobility** No information available.

Chemical name	Partition coefficient
Diethylene glycol	-1.98
Formaldehyde	0.35
Methanol	-0.77

**Other adverse effects**

No information available.

**13. DISPOSAL CONSIDERATIONS****Disposal methods****Waste from residues/unused products** Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.**Contaminated packaging** Do not reuse empty containers.**14. TRANSPORT INFORMATION****IMDG** Not regulated  
**Transport in bulk according to Annex II of MARPOL and the IBC Code** No information available**IATA** Not regulated**RID** Not regulated**ADR** Not regulated**ADN** Not regulated**Special precautions for user** Special provisions from the regulations relative to the specified mode of transport are noted by numeric code. Refer to the regulations for the full text of special provisions.**15. REGULATORY INFORMATION****Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations****The Montreal Protocol on Substances that Deplete the Ozone Layer** Not applicable**The Stockholm Convention on Persistent Organic Pollutants** Not applicable**The Rotterdam Convention** Not applicable**International Inventories**

Contact supplier for inventory compliance status

**16. OTHER INFORMATION**

**Prepared By** Bio-Rad Laboratories, Environmental Health and Safety

**Revision date** 21-Feb-2022

**Revision Note** \*\*\* Indicates this information has changed since the previous revision.

**Key or legend to abbreviations and acronyms used in the safety data sheet**

**Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

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

**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

**End of Safety Data Sheet**