



SAFETY DATA SHEET

This safety data sheet complies with the requirements of:
SS586: 2008 (2014)

Revision date 04-Oct-2022

Revision Number 1.1

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

Product identifier

Product Name 2-D SDS-PAGE Standards

Other means of identification

Catalogue Number(s) 1610320, 1610320EDU

UN proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.

Description 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Ethyl acrylate, Sodium azide), 6.1, III

Pure substance/mixture Mixture

Contains 2-Mercaptoethanol

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

Uses advised against No information available

Details of the supplier of the safety data sheet

Corporate Headquarters

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

Manufacturer

Bio-Rad Laboratories, Life Science Group
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Legal Entity / Contact Address

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Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Singapore: 65-31581349

SECTION 2: Hazards identification

GHS Classification

Acute toxicity - Dermal	Category 4
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1A

Label elements

**Signal word**

Danger

Hazard statements

H312 - Harmful in contact with skin

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage

Precautionary Statements - Prevention

Avoid breathing dust/fume/gas/mist/vapours/spray

Contaminated work clothing should not be allowed out of the workplace

Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

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

Call a POISON CENTRE or doctor if you feel unwell

Take off all contaminated clothing and wash it before reuse

IF ON SKIN: Wash with plenty of water and soap

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

Immediately call a POISON CENTRE or doctor

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification**SECTION 3: Composition/information on ingredients****Substance**

Not applicable

Mixture

The product contains no substances which at their given concentration, are considered to be hazardous to health

Chemical name	EC No	CAS No	Weight-%
Urea	200-315-5	57-13-6	35 - 50
2-Mercaptoethanol	200-464-6	60-24-2	2.5 - 5
1,2,3-Propanetriol	200-289-5	56-81-5	0.01 - 0.099
Ethyl acrylate	205-438-8	140-88-5	0.001 - 0.01
Sodium azide	247-852-1	26628-22-8	< 0.001

Non-hazardous
ingredients

Proprietary

Balance

SECTION 4: First aid measures**Description of first aid measures****General advice**

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

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur.
Eye contact	Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.
Skin contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction. If symptoms persist, call a physician.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.

Most important symptoms and effects, both acute and delayed

Symptoms	Burning sensation. Itching. Rashes. Hives. Prolonged contact may cause redness and irritation.
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For emergency responders

Self-protection of the first aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Wear personal protective clothing (see section 8). Avoid contact with skin, eyes or clothing.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	May cause sensitization in susceptible persons. Treat symptomatically.
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SECTION 5: Firefighting measures**Suitable Extinguishing Media**

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
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Unsuitable extinguishing media	No information available.
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Specific hazards arising from the chemical

Specific hazards arising from the chemical	Product is or contains a sensitizer. May cause sensitization by skin contact.
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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.
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SECTION 6: Accidental release measures**Personal precautions, protective equipment and emergency procedures**

Personal precautions	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.
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Other information	Refer to protective measures listed in Sections 7 and 8.
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For emergency responders	Use personal protection recommended in Section 8.
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Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

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.

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 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. Ensure adequate ventilation. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse.

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.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical name	Singapore	ACGIH TLV
1,2,3-Propanetriol 56-81-5	PEL: 10 mg/m ³	No data available
Ethyl acrylate 140-88-5	PEL: 5 ppm PEL: 20 mg/m ³ STEL: 15 ppm STEL: 61 mg/m ³	STEL: 15 ppm TWA: 5 ppm
Sodium azide 26628-22-8	STEL: 0.29 mg/m ³ STEL: 0.11 ppm	Ceiling: 0.29 mg/m ³ Sodium azide Ceiling: 0.11 ppm Hydrazoic acid vapor

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies

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.

Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
Hand protection	Wear suitable 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.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Liquid
Appearance	aqueous solution
Colour	white
Odour	Odourless.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	8.4	
Melting point / freezing point	No data available	None known
Boiling point / boiling range	> 100 °C	
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Miscible in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

<u>Other information</u>	No information available
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SECTION 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	None under normal processing.
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Conditions to avoid

Conditions to avoid None known based on information supplied.

Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.
Skin contact	Specific test data for the substance or mixture is not available. May cause irritation. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May be absorbed through the skin in harmful amounts. Causes mild skin irritation. Harmful in contact with skin.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives. Prolonged contact may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

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

ATEmix (oral)	4,248.20 mg/kg
ATEmix (dermal)	1,346.60 mg/kg
ATEmix (inhalation-vapor)	24.60 mg/l

47.34001 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity.

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg (Rat)		
Urea	= 8471 mg/kg (Rat)		
2-Mercaptoethanol	= 244 mg/kg (Rat)	112 - 224 mg/kg (Rabbit)	
1,2,3-Propanetriol	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 2.75 mg/L (Rat) 4 h
3,6,9,12-Tetraaetetradecane-1,	= 1600 mg/kg (Rat)		

14-diamine			
Ethyl acrylate	= 550 mg/kg (Rat)	= 1790 mg/kg (Rabbit)	= 1410 ppm (Rat) 4 h
L-Arginine, monohydrochloride	= 12 g/kg (Rat)		
Sodium azide	= 27 mg/kg (Rat)	= 20 mg/kg (Rabbit)	0.054 - 0.52 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	Classification based on data available for ingredients.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns.
Respiratory or skin sensitization	May cause an allergic skin reaction.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Based on available data, the classification criteria are not met.
STOT - single exposure	Based on available data, the classification criteria are not met.
STOT - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Classification not possible.

SECTION 12: Ecological information

Ecotoxicity

Ecotoxicity	Harmful to aquatic life with long lasting effects.
Unknown aquatic toxicity	Contains 1E-05 % of components with unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Urea	-	LC50: 16200 - 18300mg/L (96h, Poecilia reticulata)	EC50: =3910mg/L (48h, Daphnia magna)
2-Mercaptoethanol	EC50: =12mg/L (72h, Desmodesmus subspicatus)	-	EC50: =1.52mg/L (48h, Daphnia magna)
1,2,3-Propanetriol	-	LC50: 51 - 57mL/L (96h, Oncorhynchus mykiss)	-
Ethyl acrylate	EC50: =48mg/L (72h, Desmodesmus subspicatus)	LC50: =4.6mg/L (96h, Oncorhynchus mykiss) LC50: 2.31 - 2.7mg/L (96h, Pimephales promelas)	EC50: =7.9mg/L (48h, Daphnia magna)
Sodium azide	-	LC50: =0.8mg/L (96h, Oncorhynchus mykiss) LC50: =0.7mg/L (96h, Lepomis macrochirus) LC50: =5.46mg/L (96h, Pimephales promelas)	-

Persistence and degradability

Persistence and degradability	No information available.
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Bioaccumulative potential

Bioaccumulation There is no data for this product.

Chemical name	Partition coefficient
Urea	-1.73
2-Mercaptoethanol	-0.056
1,2,3-Propanetriol	-1.75
Ethyl acrylate	1.18

Mobility

Mobility in soil No information available.

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Urea	The substance is not PBT / vPvB PBT assessment does not apply
2-Mercaptoethanol	The substance is not PBT / vPvB
1,2,3-Propanetriol	The substance is not PBT / vPvB
Ethyl acrylate	The substance is not PBT / vPvB
Sodium azide	The substance is not PBT / vPvB PBT assessment does not apply

Other adverse effects

Other adverse effects No information available

SECTION 13: Disposal considerations

Waste treatment methods

Waste from residues/unused products Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

ADR

UN number or ID number 2810
UN proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.
Transport hazard class(es) 6.1
Labels 6.1
Packing group III
Classification code T1
Tunnel restriction code (E)
Special Provisions 274, 614
Description 2810, TOXIC LIQUID, ORGANIC, N.O.S. (Ethyl acrylate, Sodium azide), 6.1, III

IMDG

UN number or ID number UN2810
UN proper shipping name TOXIC LIQUID, ORGANIC, N.O.S.
Description UN2810, TOXIC LIQUID, ORGANIC, N.O.S. (Ethyl acrylate, Sodium azide), 6.1, III
Transport hazard class(es) 6.1
Packing group III
Marine pollutant NP
Special Provisions 223, 274
EmS-No F-A, S-A

Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

IATA

UN number or ID number UN2810
 UN proper shipping name Toxic liquid, organic, n.o.s.
 Description UN2810, Toxic liquid, organic, n.o.s. (Ethyl acrylate, Sodium azide), 6.1, III
 Transport hazard class(es) 6.1
 Packing group III
 Special Provisions A3, A4, A137
 ERG Code 6L

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****Singapore****Environmental Protection and Management (Hazardous Substances) Regulations**

Verify that licence requirements are met.

Chemical name	Hazardous Substances	transport
Sodium azide	Exclusions: Air bag devices in motor vehicles	0kg

Environmental Public Health Act

Dispose of waste product or used containers according to local regulations.

Fire Safety (Petroleum and Flammable Materials) Regulations

Verify that licence requirements are met.

Chemical name	Regulated	Hazard class
Ethyl acrylate	SCDEAR1917L2	3

Hazardous Waste (Control of Export, Import and Transit) Act

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Maritime and Port Authority of Singapore (Dangerous Goods, Petroleum and Explosives) Regulations

Regulated. See section 14 for more information.

Poison

Verify that licence requirements are met Verify that requirements related to using, handling, and storing substances subject to prohibition, authorisation or restriction are met

Chemical name	Poison	Poison Schedule Number
Urea	X	First schedule

Workplace Safety and Health Act

See section 8 for national exposure control parameters. Comply with the health and safety at work laws.

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

SECTION 16: Other information**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

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGl(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Label elements

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P310 - Immediately call a POISON CENTER or doctor
P273 - Avoid release to the environment
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

Issuing Date Bio-Rad Laboratories, Environmental Health and Safety

Revision date 04-Oct-2022

Revision Note Reformatted and updated existing information.

This safety data sheet complies with the requirements of: SS586: 2008 (2014)

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