



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GB/T 16483-2008, GB/T 17519-2013

Product Name 40% Acrylamide/Bis Solution, 29:1

Revision date 10-Aug-2022

Revision Number 3

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

Product identifier

Product Name 40% Acrylamide/Bis Solution, 29:1

Catalogue Number(s) 1610146, 1610147, 1610147EDU, 1610146EDU, 9703330

Other means of identification

UN/ID no UN3426

Pure substance/mixture Mixture

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
2000 Alfred Nobel Drive
Hercules, California 94547
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Legal Entity / Contact Address

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Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC Hong Kong: 800-968-793

Recommended use of the chemical and restrictions on use

Recommended use Laboratory chemicals

SECTION 2: Hazards identification

Emergency Overview

Irritating to skin
Irritating to eyes
May cause allergic skin reaction
Contains a known or suspected carcinogen

Appearance aqueous solution **Physical state** Liquid **Odour** Odourless

Classification of the substance or mixture

Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 5
Acute toxicity - Inhalation (Dusts/Mists)	Category 4

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Skin sensitisation	Category 1
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 1B
Specific target organ toxicity - Single exposure	Category 1
Specific target organ toxicity - Repeated exposure	Category 1
Hazardous to the Aquatic Environment - Acute Hazard	Category 3
Hazardous to the Aquatic Environment - Chronic Hazard	Category 3

Label elements**Signal word**

Danger

Hazard statements

Harmful if swallowed
 May be harmful in contact with skin
 Harmful if inhaled
 Causes skin irritation
 Causes serious eye irritation
 May cause an allergic skin reaction
 May cause genetic defects
 May cause cancer
 May damage fertility or the unborn child
 Causes damage to organs
 Causes damage to organs through prolonged or repeated exposure
 Harmful to aquatic life with long lasting effects

Precautionary statements**Prevention**

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
 Contaminated work clothing should not be allowed out of the workplace
 Do not breathe dust/fume/gas/mist/vapours/spray
 Avoid release to the environment
 Wear protective gloves/protective clothing/eye protection/face protection

Response

IF exposed or concerned: Call a POISON CENTER or doctor
 IF INHALED: Remove person to fresh air and keep comfortable for breathing
 Call a POISON CENTRE or doctor if you feel unwell
 IF ON SKIN: Wash with plenty of water and soap
 Take off all contaminated clothing and wash it before reuse
 If skin irritation or rash occurs: Get medical advice/attention
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If eye irritation persists: Get medical advice/attention
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell
 Rinse mouth

Disposal

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

Physical and chemical hazards

Not applicable.

Health hazards

Immediate Health Effects: Harmful. Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed. Causes skin irritation (pain, redness and swelling). Causes severe irritation (tears, blurred vision and redness). Irritating, but will not permanently injure eye tissue. Allergic reactions (sensitiser). Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing.

Chronic effects: Contains a known or suspected mutagen. Contains a known or suspected carcinogen. Contains a known or suspected reproductive toxin. Target organ(s).

Environmental hazards

This material is a water pollutant. Keep out of drains, sewers, ditches and waterways. Minimise use of water to prevent environmental contamination

Other hazards which do not result in classification

Not applicable

SECTION 3: Composition/information on ingredients**Substance**

Not applicable.

Mixture

Chemical name	Weight-%	CAS No
Acrylamide	35 - 50	79-06-1
Methylene diacrylamide	1 - 2.5	110-26-9

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

Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.

Inhalation

Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur. If symptoms persist, call a doctor. If breathing has stopped, give artificial respiration. Get medical attention immediately.

Eye contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a doctor. Keep eye wide open while rinsing. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists. Do not rub affected area.

Skin contact

May cause an allergic skin reaction. If symptoms persist, call a doctor. Wash off immediately with soap and plenty of water for at least 15 minutes.

Ingestion

Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms and effects, both acute and delayed

Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation. Coughing and/ or wheezing. Difficulty in breathing.

For emergency responders

Avoid contact with skin, eyes or clothing. Ensure that medical personnel are aware of the

material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid breathing vapours or mists. Use personal protective equipment as required. See section 8 for more information.

Note to doctors May cause sensitisation in susceptible persons. Treat symptomatically.

SECTION 5: Firefighting measures

Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical Product is or contains a sensitiser. May cause sensitisation by skin contact.

Special protective actions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

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. Avoid breathing vapours or mists.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

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

Methods and material for containment and cleaning up Prevent further leakage or spillage if safe to do so. Pick up and transfer to properly labelled containers.

Precautions to prevent secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

SECTION 7: Handling and storage

Precautions for safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash it before reuse. Remove contaminated clothing and shoes. Avoid breathing vapours or mists. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing. See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Store according to product and label instructions.

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

SECTION 8: Exposure controls/personal protection**Occupational exposure limits**

Chemical name	China	ACGIH TLV
Acrylamide - 79-06-1	TWA: 0.3 mg/m ³ Skin* G2A(C**)	dermal sensitizer TWA: 0.03 mg/m ³ inhalable fraction and vapor S*

Note See section 16 for terms and abbreviations

Biological occupational exposure limits

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

Monitoring and observation processes

No applicable information was found.

Engineering controls

Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin and body protection	Wear suitable protective clothing. Long sleeved clothing.
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	Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Wear suitable gloves and eye/face protection. Avoid contact with skin, eyes or clothing.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties**

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

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		None known
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	No data available	

limits		
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	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known

Additional information

Explosive properties	Not applicable
Oxidising properties	Not applicable

SECTION 10: Stability and reactivity

Stability Stable under normal conditions.

Possibility of hazardous reactions None under normal processing.

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Conditions to avoid Excessive heat.

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information**Acute toxicity****Numerical measures of toxicity**

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

ATEmix (oral)	307.60 mg/kg
ATEmix (dermal)	2,753.20 mg/kg
ATEmix (inhalation-dust/mist)	3.88 mg/l

Unknown acute toxicity

0 % of the mixture consists of ingredient(s) of unknown acute oral toxicity

0 % of the mixture consists of ingredient(s) of unknown acute dermal toxicity

1.3 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity (dust/mist)

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acrylamide	= 124 mg/kg (Rat)	= 1148 mg/kg (Rabbit)	-
Methylene diacrylamide	= 390 mg/kg (Rat)	-	-

Skin corrosion/irritation	Classification based on data available for ingredients. Irritating to skin.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitisation	May cause sensitisation by skin contact.
Germ cell mutagenicity	Contains a known or suspected mutagen. Classification based on data available for ingredients. May cause genetic defects.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. May cause cancer.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	China	IARC
Acrylamide	Probably carcinogenic to humans	Group 2A

Legend

IARC (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

Reproductive toxicity	Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.
Specific target organ toxicity — 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.
Specific target organ toxicity — repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Target organ effects	Eyes. Skin. Central nervous system. Peripheral Nervous System (PNS). Reproductive system. Thyroid. Lungs.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

Ecotoxicity Harmful to aquatic life with long lasting effects.

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

Chemical name	Algae/aquatic plants	Fish	Crustacea
Acrylamide	-	LC50: 103 - 115mg/L (96h, Pimephales promelas) LC50: 137 - 191mg/L (96h, Oncorhynchus mykiss) LC50: 74 - 150mg/L (96h, Oncorhynchus mykiss) LC50: 81 - 150mg/L (96h, Lepomis macrochirus) LC50: =124mg/L (96h, Pimephales promelas)	EC50: =98mg/L (48h, Daphnia magna)

Persistence and degradability No information available.

Bioaccumulative potential There is no data for this product.

Component Information

Chemical name	Partition coefficient
Acrylamide	-0.9
Methylene diacrylamide	-0.08

Mobility in soil No information available.

SECTION 13: Disposal considerations

Waste chemicals Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IMDG**

UN number or ID number UN3426
 UN proper shipping name ACRYLAMIDE SOLUTION
 Description UN3426, ACRYLAMIDE SOLUTION, 6.1, III
 Transport hazard class(es) 6.1
 Packing group III
 Marine pollutant NP
 Special Provisions 223
 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 UN3426
 UN proper shipping name Acrylamide solution
 Description UN3426, Acrylamide solution, 6.1, III
 Transport hazard class(es) 6.1
 Packing group III
 Special Provisions A3
 ERG Code 6L

China

UN number or ID number UN3426
 UN proper shipping name ACRYLAMIDE SOLUTION
 Transport hazard class(es) 6.1
 Packing group III
 Description UN3426, ACRYLAMIDE SOLUTION, 6.1, III

Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

SECTION 15: Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Law of the People's Republic of China on Prevention and Control of Occupational Diseases**

Catalogue of occupational hazard factors:
 Catalogue of occupational diseases:

Listed. Chemical hazards.
 Listed. Occupational poisoning.

Chemical name	Category
Acrylamide	Chemical hazards

Regulations on the Control over Safety of Hazardous ChemicalsInventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed.

Weight-% 39

Chemical name	Inventory of hazardous chemicals
Acrylamide	Listed

GB 18218-2009 Identification of major hazard installations for dangerous chemicals

Not applicable

List of hazardous chemicals under priority management

Not applicable

Regulations on Labour Protection in Workplaces Where Toxic Substances Are UsedInventory of highly toxic goods

Chemical name	TWA (time-weighted average)	STEL (Short Term Exposure Limit)	Maximum limit value
Acrylamide	0.3 mg/m ³	0.9 mg/m ³	

Regulations for Environmental Management on the First Import of Chemicals and the Import and Export of Toxic Chemicals

List of toxic chemicals severely restricted for import and export in China

Not applicable

Measures for the Environmental Management of New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances Contact supplier for inventory compliance status.

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

SECTION 16: Other information

Prepared By Bio-Rad Laboratories, Environmental Health and Safety

Revision date 10-Aug-2022

Revision Note Significant changes throughout SDS. Review all sections.

Abbreviations and acronymsLegend 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		

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

Disclaimer

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End of Safety Data Sheet