



# SAFETY DATA SHEET

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

Revision date 24-May-2023

Revision Number 2.1

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

### Product identifier

**Product Name** 30% Acrylamide/Bis Solution, 29:1

### Other means of identification

**Catalogue Number(s)** 9702419, 1610156, 1610157, 1610157EDU, 1610156EDU

**UN proper shipping name** ACRYLAMIDE SOLUTION

**Description** 3426, ACRYLAMIDE SOLUTION, 6.1, III

**Pure substance/mixture** Mixture

Contains Acrylamide, Methylene diacrylamide

### 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

For further information, please contact

#### **Manufacturer**

Bio-Rad Laboratories, Life Science Group  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

#### **Legal Entity / Contact Address**

Bio-Rad Laboratoires (Singapore) PTE LTD  
3A International Business Park #11-10/16  
ICON@IBP  
Singapore 609935

#### **Technical Service**

6424 0262  
ctssingapore@bio-rad.com

### Emergency telephone number

**24 Hour Emergency Phone Number** CHEMTREC Singapore: 65-31581349

## SECTION 2: Hazards identification

### GHS Classification

<b>Acute toxicity - Oral</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 2
<b>Serious eye damage/eye irritation</b>	Category 2
<b>Skin sensitisation</b>	Category 1
<b>Germ cell mutagenicity</b>	Category 1B
<b>Carcinogenicity</b>	Category 1B
<b>Reproductive toxicity</b>	Category 1B
<b>Specific target organ toxicity — single exposure</b>	Category 1

**Specific target organ toxicity — repeated exposure**

Category 1

**Label elements****Signal word**

Danger

**Hazard statements**

H302 - Harmful if swallowed  
 H315 - Causes skin irritation  
 H317 - May cause an allergic skin reaction  
 H319 - Causes serious eye irritation  
 H340 - May cause genetic defects  
 H350 - May cause cancer  
 H372 - Causes damage to organs through prolonged or repeated exposure

**Precautionary Statements - Prevention**

Obtain special instructions before use  
 Do not handle until all safety precautions have been read and understood  
 Do not breathe dust/fume/gas/mist/vapours/spray  
 Wash face, hands and any exposed skin thoroughly after handling  
 Do not eat, drink or smoke when using this product  
 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  
 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  
 If eye irritation persists: Get medical advice/attention  
 Rinse mouth  
 IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell

**Precautionary Statements - Storage**

Store locked up

**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**

Chemical name	EC No (EU Index No)	CAS No	Weight-%
Water	231-791-2	7732-18-5	50 - 100
Acrylamide	(616-003-00-0) 201-173-7	79-06-1	20 - 35
Methylene diacrylamide	203-750-9	110-26-9	1 - 2.5

Non-hazardous  
ingredients

Proprietary

Balance

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

<b>General advice</b>	Show this safety data sheet to the doctor in attendance. IF exposed or concerned: Get medical advice/attention.
<b>Inhalation</b>	Remove to fresh air. IF exposed or concerned: Get medical advice/attention. Get medical attention immediately if symptoms occur.
<b>Eye contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If symptoms persist, call a doctor. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	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.
<b>Ingestion</b>	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a doctor.

**Most important symptoms and effects, both acute and delayed**

<b>Symptoms</b>	Itching. Rashes. Hives. May cause redness and tearing of the eyes. Burning sensation.
-----------------	---

**For emergency responders**

<b>Self-protection of the first aider</b>	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).
---	---

**Indication of any immediate medical attention and special treatment needed**

<b>Note to doctors</b>	May cause sensitisation in susceptible persons. Treat symptomatically.
------------------------	--

**SECTION 5: Firefighting measures****Suitable Extinguishing Media**

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

<b>Unsuitable extinguishing media</b>	No information available.
---------------------------------------	---------------------------

**Specific hazards arising from the chemical**

<b>Specific hazards arising from the chemical</b>	Product is or contains a sensitiser. May cause sensitisation by skin contact.
---	---

**Special protective actions for fire-fighters**

<b>Special protective equipment and precautions for fire-fighters</b>	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.

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

**For emergency responders** Use personal protection recommended in Section 8.

#### **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 labelled 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. 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.

**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.

#### **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. Store locked up.

### **SECTION 8: Exposure controls/personal protection**

#### **Control parameters**

##### **Occupational exposure limits**

Chemical name	Singapore	ACGIH TLV
Acrylamide 79-06-1	PEL: 0.03 mg/m <sup>3</sup>	dermal sensitizer TWA: 0.03 mg/m <sup>3</sup> inhalable fraction and vapor S*

##### **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**

<b>Eye/face protection</b>	Wear safety glasses with side shields (or goggles).
<b>Skin and body protection</b>	Wear suitable protective clothing. Long sleeved clothing.
<b>Hand protection</b>	Wear suitable gloves. Impervious gloves.
<b>Respiratory protection</b>	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
<b>Environmental exposure controls</b>	No information available.

### **SECTION 9: Physical and chemical properties**

#### **Information on basic physical and chemical properties**

<b>Physical state</b>	Liquid
<b>Appearance</b>	aqueous solution
<b>Colour</b>	colourless
<b>Odour</b>	Odourless.
<b>Odour threshold</b>	No information available

<b>Property</b>	<b>Values</b>	<b>Remarks • Method</b>
<b>pH</b>		None known
<b>Melting point / freezing point</b>	No data available	None known
<b>Boiling point / boiling range</b>	> 100 °C	
<b>Flash point</b>	No data available	None known
<b>Evaporation rate</b>	No data available	None known
<b>Flammability (solid, gas)</b>	No data available	None known
<b>Flammability Limit in Air</b>		None known
<b>Upper flammability or explosive limits</b>	No data available	
<b>Lower flammability or explosive limits</b>	No data available	
<b>Vapour pressure</b>	No data available	None known
<b>Vapour density</b>	No data available	None known
<b>Relative density</b>	No data available	None known
<b>Water solubility</b>	Miscible in water	
<b>Solubility(ies)</b>	No data available	None known
<b>Partition coefficient</b>	No data available	None known
<b>Autoignition temperature</b>	424 °C	
<b>Decomposition temperature</b>		None known
<b>Kinematic viscosity</b>	No data available	None known
<b>Dynamic viscosity</b>	No data available	None known
<b>Other information</b>	No information available	

### **SECTION 10: Stability and reactivity**

#### **Reactivity**

<b>Reactivity</b>	No information available.
-------------------	---------------------------

#### **Chemical stability**

<b>Stability</b>	Stable under normal conditions.
------------------	---------------------------------

**Explosion data****Sensitivity to mechanical impact** None.**Sensitivity to static discharge** None.**Possibility of hazardous reactions** None under normal processing.**Conditions to avoid****Conditions to avoid** None known based on information supplied.**Incompatible materials****Incompatible materials** Strong acids. Strong bases. Strong oxidising 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**

<b>Inhalation</b>	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
<b>Eye contact</b>	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
<b>Skin contact</b>	May cause sensitisation by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.
<b>Ingestion</b>	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Harmful if swallowed. (based on components).

**Symptoms related to the physical, chemical and toxicological characteristics****Symptoms** Itching. Rashes. Hives. Redness. May cause redness and tearing of the eyes.**Acute toxicity****Numerical measures of toxicity****The following values are calculated based on chapter 3.1 of the GHS document**

<b>ATEmix (oral)</b>	410.10 mg/kg
<b>ATEmix (dermal)</b>	3,671.10 mg/kg
<b>ATEmix (inhalation-dust/mist)</b>	5.17 mg/l

**Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Water	> 90 mL/kg ( Rat )		
Acrylamide	= 124 mg/kg ( Rat )	= 1148 mg/kg ( Rabbit )	
Methylene diacrylamide	= 390 mg/kg ( Rat )		

--	--	--	--

**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. Causes skin irritation.

**Serious eye damage/eye irritation** Classification based on data available for ingredients. Causes serious eye irritation.

**Respiratory or skin sensitisation** May cause an allergic skin reaction.

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

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

Chemical name	European Union
Acrylamide	Muta. 1B

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

Chemical name	European Union
Acrylamide	Carc. 1B

**Reproductive toxicity** Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage fertility or the unborn child.

Chemical name	European Union
Acrylamide	Repr. 2

**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.

**STOT - repeated exposure** Causes damage to organs through prolonged or repeated exposure.

**Aspiration hazard** Classification not possible.

**SECTION 12: Ecological information****Ecotoxicity**

**Ecotoxicity** Harmful to aquatic life with long lasting effects.

**Unknown aquatic toxicity** Contains 0 % of components with unknown hazards to the aquatic environment

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

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

**Bioaccumulation** There is no data for this product.

Chemical name	Partition coefficient
Acrylamide	-0.9
Methylene diacrylamide	-0.08

### Mobility

**Mobility in soil** No information available.

### **PBT and vPvB assessment**

Chemical name	PBT and vPvB assessment
Acrylamide	The substance is not PBT / vPvB
Methylene diacrylamide	The substance is not PBT / vPvB

### 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** 3426  
**UN proper shipping name** ACRYLAMIDE SOLUTION  
**Transport hazard class(es)** 6.1  
**Labels** 6.1  
**Packing group** III  
**Classification code** T1  
**Tunnel restriction code** (E)  
**Description** 3426, ACRYLAMIDE SOLUTION, 6.1, III

### 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



<b>Description</b>	UN3426, Acrylamide solution, 6.1, III
<b>Transport hazard class(es)</b>	6.1
<b>Packing group</b>	III
<b>Special Provisions</b>	A3
<b>ERG Code</b>	6L

## SECTION 15: Regulatory information

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

#### Singapore

##### **Environmental Public Health Act**

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

##### **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**

None Listed

##### **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  
Australian 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)  
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications  
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme  
Organisation for Economic Co-operation and Development Screening Information Data Set  
RTECS (Registry of Toxic Effects of Chemical Substances)  
World Health Organization

**Label elements**

P260 - Do not breathe dust/fume/gas/mist/vapours/spray  
P264 - Wash face, hands and any exposed skin thoroughly after handling  
P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P308 + P311 - IF exposed or concerned: 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** 24-May-2023

**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**