



# SAFETY DATA SHEET

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

Revision date 08-Nov-2021

Revision Number 2

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

### Product identifier

**Product Name** Affi-Gel Hz Hydrazide

### Other means of identification

**Catalogue Number(s)** 1536047, 1536050, 9701043

**UN proper shipping name** ISOPROPANOL

**Description** 1219, ISOPROPANOL, 3, II

**Pure substance/mixture** Mixture

Contains Isopropyl alcohol

### 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  
2000 Alfred Nobel Drive  
Hercules, California 94547  
USA

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

Bio-Rad Laboratories Ltd.  
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Pathumwan, Bangkok 10330  
Thailand

For further information, please contact

**Technical Service** +66 2 652 8313  
ctsthailand@bio-rad.com

### Emergency telephone number

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

## SECTION 2: Hazards identification

### GHS Classification

Serious eye damage/eye irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Flammable liquids	Category 2

### Label elements

**Signal word**

Danger

**Hazard statements**

H319 - Causes serious eye irritation

H336 - May cause drowsiness or dizziness

H225 - Highly flammable liquid and vapor

**Precautionary Statements - Prevention**

Keep container tightly closed

Keep cool

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

Wash face, hands and any exposed skin thoroughly after handling

Use only outdoors or in a well-ventilated area

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

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

**Precautionary Statements - Response**

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

Call a POISON CENTRE or doctor if you feel unwell

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

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

**Precautionary Statements - Storage**

Store locked up

Store in a well-ventilated place. Keep container tightly closed

**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	CAS No	Weight-%
Isopropyl alcohol	200-661-7	67-63-0	50 - 100

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.

**Inhalation**

Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

<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 medical attention if irritation develops and persists.
<b>Skin contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
<b>Ingestion</b>	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**

<b>Symptoms</b>	May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
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**For emergency responders**

<b>Self-protection of the first aider</b>	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing.
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**Indication of any immediate medical attention and special treatment needed**

<b>Note to physicians</b>	Treat symptomatically.
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**SECTION 5: Firefighting measures****Suitable Extinguishing Media**

<b>Suitable Extinguishing Media</b>	Dry chemical. Carbon dioxide (CO <sub>2</sub> ). Water spray. Alcohol resistant foam.
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<b>Unsuitable extinguishing media</b>	No information available.
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**Specific hazards arising from the chemical**

<b>Specific hazards arising from the chemical</b>	Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
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**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.
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**SECTION 6: Accidental release measures****Personal precautions, protective equipment and emergency procedures**

<b>Personal precautions</b>	Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material.
<b>Other information</b>	Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

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

### **Environmental precautions**

**Environmental precautions** Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

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

**Methods for containment** Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal.

**Methods for cleaning up** Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. 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** Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment.

**General hygiene considerations** Do not eat, drink or smoke when using this product. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection.

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

**Storage Conditions** Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations.

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

### **Control parameters**

#### **Occupational exposure limits**

Chemical name	Singapore	ACGIH TLV
Isopropyl alcohol 67-63-0	PEL: 400 ppm PEL: 983 mg/m <sup>3</sup> STEL: 500 ppm STEL: 1230 mg/m <sup>3</sup>	STEL: 400 ppm TWA: 200 ppm

#### **Biological occupational exposure limits**

Chemical name	Singapore	ACGIH
Isopropyl alcohol 67-63-0	No data available	40 mg/L - urine (Acetone) - end of shift at end of workweek

**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. Chemical resistant apron.  
    Antistatic boots.

**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.

**Environmental exposure controls**        No information available.

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

**Physical state**                                Liquid  
**Appearance**                                Slurry  
**Colour**                                        colourless  
**Odour**                                        Alcohol.  
**Odour threshold**                            No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH		None known
Melting point / freezing point	-89.5 °C	
Boiling point / boiling range	82 °C	
Flash point	13 °C	
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	Partially miscible	
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

**Other information**                            No information available

**SECTION 10: Stability and reactivity**

**Reactivity**

**Reactivity** No information available.

**Chemical stability**

**Stability** Stable under normal conditions.

**Explosion data**

**Sensitivity to mechanical impact** None.

**Sensitivity to static discharge** Yes.

**Possibility of hazardous reactions** None under normal processing.

**Conditions to avoid**

**Conditions to avoid** Heat, flames and sparks.

**Incompatible materials**

**Incompatible materials** None known based on information supplied.

**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. May cause drowsiness or dizziness.
<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>	Specific test data for the substance or mixture is not available. May cause irritation. Prolonged contact may cause redness and irritation.
<b>Ingestion</b>	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** May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

**Acute toxicity****Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Isopropyl alcohol	= 1870 mg/kg ( Rat )	= 4059 mg/kg ( Rabbit )	= 72600 mg/m <sup>3</sup> ( Rat ) 4 h

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

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

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

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

Chemical name	Algae/aquatic plants	Fish	Crustacea
Isopropyl alcohol	EC50: >1000mg/L (72h, <i>Desmodesmus subspicatus</i> ) EC50: >1000mg/L (96h, <i>Desmodesmus subspicatus</i> )	LC50: =11130mg/L (96h, <i>Pimephales promelas</i> ) LC50: =9640mg/L (96h, <i>Pimephales promelas</i> ) LC50: >1400000µg/L (96h, <i>Lepomis macrochirus</i> )	EC50: =13299mg/L (48h, <i>Daphnia magna</i> )

**Persistence and degradability**

**Persistence and degradability** No information available.

**Bioaccumulative potential**

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

Chemical name	Partition coefficient
Isopropyl alcohol	0.05

**Mobility**

**Mobility in soil** No information available.

**PBT and vPvB assessment**

Chemical name	PBT and vPvB assessment
Isopropyl alcohol	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** Should not be released into the environment. Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

**Contaminated packaging** Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers.

## SECTION 14: Transport information

### ADR

UN number or ID number 1219  
UN proper shipping name ISOPROPANOL  
Transport hazard class(es) 3  
Labels 3  
Packing group II  
Classification code F1  
Tunnel restriction code (D/E)  
Special Provisions 601  
Description 1219, ISOPROPANOL, 3, II

### IMDG

UN number or ID number UN1219  
UN proper shipping name ISOPROPANOL  
Description UN1219, ISOPROPANOL, 3, II, (13°C C.C.)  
Transport hazard class(es) 3  
Packing group II  
Marine pollutant NP  
EmS-No F-E, S-D  
Transport in bulk according to Annex II of MARPOL and the IBC No information available  
Code

### IATA

UN number or ID number UN1219  
UN proper shipping name Isopropanol  
Description UN1219, Isopropanol, 3, II  
Transport hazard class(es) 3  
Packing group II  
Special Provisions A180  
ERG Code 3L

## 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.



**Fire Safety (Petroleum and Flammable Materials) Regulations**

Verify that licence requirements are met.

Chemical name	Regulated	Hazard class
Isopropyl alcohol	SCDIPA1219L2	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**

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**

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray

P312 - Call a POISON CENTER or doctor if you feel unwell

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

P501 - Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

P403 + P235 - Store in a well-ventilated place. Keep cool

**Issuing Date** Bio-Rad Laboratories, Environmental Health and Safety

**Revision date** 08-Nov-2021

**Revision Note** Significant changes throughout SDS. Review all sections.

**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**