



SAFETY DATA SHEET

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

Product Name UCAT/UMET Acidic Reagent
Revision date 20-Feb-2021
Revision Number 1

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

Product identifier

Product Name UCAT/UMET Acidic Reagent
Catalogue Number(s) 1956037

Other means of identification

UN/ID no UN3265
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 (Shanghai) Ltd.
3rd Floor, Build E Poly Plaza, No.18
Dong Fang Road, Pudong
Shanghai, China 200120

Legal Entity / Contact Address

Bio-Rad Laboratories Ltd.
1st and 2nd Floor, Lumpini 1 Building
239/2, Rajdamri Road, Lumpini,
Pathumwan, Bangkok 10330
Thailand

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

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 In-vitro laboratory reagent or component

SECTION 2: Hazards identification

Emergency Overview

CORROSIVE - CAUSES IRREVERSIBLE EYE (AND SKIN) DAMAGE
Risk of serious damage to eyes
HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames

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

Classification of the substance or mixture

Corrosive to metals	Category 1
Flammable liquids	Category 3
Skin corrosion/irritation	Category 1 Sub-category A

Revision date 20-Feb-2021

Serious eye damage/eye irritation

Category 1

Label elements



Signal word

Danger

Hazard statements

May be corrosive to metals
Flammable liquid and vapour
Causes severe skin burns and eye damage

Precautionary statements

Prevention

Do not breathe dust/fume/gas/mist/vapours/spray
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep only in original container

Response

Immediately call a POISON CENTRE or doctor
IF INHALED: Remove person to fresh air and keep comfortable for breathing
Immediately call a POISON CENTRE or doctor
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
Wash contaminated clothing before reuse
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
IF SWALLOWED: rinse mouth. Do NOT induce vomiting
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
Absorb spillage to prevent material damage

Storage

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Physical and chemical hazards

Flammable; may be ignited by heat, sparks or flames. Vapours may form explosive mixtures with air. Vapours can travel considerable distances to a source of ignition where they can ignite, flash back, or explode. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated.

Health hazards

Immediate Health Effects: Contact may cause burns to skin and eyes. Risk of serious damage to eyes. Impairment of vision.
Chronic effects: Not applicable.

Environmental hazards

Not applicable

Other hazards which do not result in classification

Revision date 20-Feb-2021

Not applicable

SECTION 3: Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	Weight-%	CAS No
Acetic acid	5 - 10	64-19-7

SECTION 4: First aid measures

Description of necessary first aid measures

General advice	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
Inhalation	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. Remove to fresh air.
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 while removing all contaminated clothes and shoes. Get immediate medical advice/attention.
Ingestion	Get immediate medical advice/attention. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting.
<u>Most important symptoms and effects, both acute and delayed</u>	Burning sensation.
<u>For emergency responders</u>	Remove all sources of ignition. Use personal protective equipment as required. See section 8 for more information. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Avoid direct contact with skin. Use barrier to give mouth-to-mouth resuscitation. Avoid contact with skin, eyes or clothing.
<u>Note to doctors</u>	Product is a corrosive material. Use of gastric lavage or emesis is contra-indicated. 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.

SECTION 5: Firefighting measures

Revision date 20-Feb-2021

Extinguishing media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical 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. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of irritating gases and vapours.

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 See section 8 for more information. 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. Attention! Corrosive material. Ensure adequate ventilation. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Other information 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 Refer to protective measures listed in Sections 7 and 8. Should not be released into the environment. Do not allow to enter into soil/subsoil. Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapour suppressing foam may be used to reduce vapours. Dyke far ahead of spill to collect run-off 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. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. 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 Use personal protection equipment. Avoid breathing vapours 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 spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. In case of insufficient ventilation, wear suitable respiratory equipment. Handle product only in closed system or provide appropriate exhaust ventilation. Take off contaminated clothing and wash it before reuse. Handle in accordance with good industrial hygiene and safety practice.

Revision date 20-Feb-2021

Avoid contact with skin, eyes or clothing. 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. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. See Section 8 for information on appropriate personal protective equipment.

Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labelled 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. Protect from moisture. Store away from other materials. Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children. Store according to product and label instructions.

Incompatible materials

Acids. Bases. Oxidising agent.

SECTION 8: Exposure controls/personal protection

Occupational exposure limits

Chemical name	China	ACGIH TLV
Acetic acid - 64-19-7	TWA: 10 mg/m ³ STEL: 20 mg/m ³	STEL: 15 ppm TWA: 10 ppm

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

Face protection shield. Tight sealing safety goggles.

Skin and body protection

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

Hand protection

Impervious gloves. 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.

General hygiene considerations

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

Revision date 20-Feb-2021

product.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

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

Property	Values	Remarks • Method
pH	No information available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	100 °C	
Flash point	> 55 °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	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

<u>Stability</u>	Stable under normal conditions.
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<u>Possibility of hazardous reactions</u>	None under normal processing.
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Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

<u>Conditions to avoid</u>	Heat, flames and sparks. Exposure to air or moisture over prolonged periods.
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<u>Incompatible materials</u>	Acids. Bases. Oxidising agent.
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<u>Hazardous decomposition products</u>	None known based on information supplied.
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SECTION 11: Toxicological information

Acute toxicity

Revision date 20-Feb-2021

Numerical measures of toxicity

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

ATEmix (oral)	50,923.10 mg/kg
ATEmix (dermal)	16,307.70 mg/kg
ATEmix (inhalation-dust/mist)	175.40 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acetic acid	= 3310 mg/kg (Rat)	= 1060 mg/kg (Rabbit)	= 11.4 mg/L (Rat) 4 h

Skin corrosion/irritation	Classification based on data available for ingredients. Causes burns.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.
Respiratory or skin sensitisation	Based on available data, the classification criteria are not met.
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.
Specific target organ toxicity — single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity — repeated exposure	Based on available data, the classification criteria are not met.
Target organ effects	Respiratory system. Eyes. Skin. Teeth.
Aspiration hazard	Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

Ecotoxicity

Unknown aquatic toxicity	0 % of the mixture consists of component(s) of unknown hazards to the aquatic environment
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Chemical name	Algae/aquatic plants	Fish	Crustacea
Acetic acid	-	LC50: =75mg/L (96h, Lepomis macrochirus) LC50: =79mg/L (96h, Pimephales promelas)	EC50: =47mg/L (24h, Daphnia magna) EC50: =65mg/L (48h, Daphnia magna)

<u>Persistence and degradability</u>	No information available.
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<u>Bioaccumulative potential</u>	There is no data for this product.
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Component Information

Revision date	20-Feb-2021
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Chemical name	Partition coefficient
Acetic acid	-0.31

Mobility in soil No information available.

SECTION 13: Disposal considerations

Waste chemicals 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

IMDG

UN number UN3265
UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Description UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Acetic acid), 8, III
Transport hazard class(es) 8
Packing group III
Marine pollutant NP
Special Provisions 223, 274
EmS-No F-A, S-B
Transport in bulk according to Annex II of MARPOL and the IBC Code No information available

IATA

UN number UN3265
UN proper shipping name Corrosive liquid, acidic, organic, n.o.s.
Description UN3265, Corrosive liquid, acidic, organic, n.o.s. (Acetic acid), 8, III
Transport hazard class(es) 8
Packing group III
Special Provisions A3, A803
ERG Code 8L

China

UN proper shipping name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
Description .?1 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S..?2

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:

Listed. Chemical hazards.

Catalogue of occupational diseases:

Listed. Occupational poisoning.

Chemical name	Category
Acetic acid	Chemical hazards

Revision date 20-Feb-2021

Regulations on the Control over Safety of Hazardous Chemicals

Inventory of hazardous chemicals

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed. Verify that licence requirements are met.

Flammable liquid - Category 3 Weight-% 7

Chemical name	Inventory of hazardous chemicals
Acetic acid	Listed

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

Category

Flammable liquids

Threshold quantity (T)

5000

List of hazardous chemicals under priority management

Not applicable

Regulations on Labour Protection in Workplaces Where Toxic Substances Are Used

Inventory of highly toxic goods

Not applicable

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 20-Feb-2021

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

Abbreviations and acronyms

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		

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) (AELG(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

Revision date 20-Feb-2021

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

Disclaimer

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End of Safety Data Sheet