

Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

SECTION 1: Identification

Product identifier

Trade name/designation:	Acetonitrile BAKER ANALYZED® HPLC Ultra Gradient Solvent For use in Liquid Chromatography (HPLC & UHPLC) & Spectrophotometry
Product No.:	9017
Synonyms:	none

Relevant identified uses of the substance or mixture and uses advised against

Recommended use	For Laboratory, Research or Manufacturing Use.
Uses advised against	Not determined.

Details of the supplier of the safety data sheet

Supplier

Avantor Performance Materials, LLC.

Street	100 Matsonford Rd, Suite 200
Postal code/City	Radnor, PA 19087, United States
Telephone	+1-855-282-6867
Telefax	+1-610-573-2610

Emergency phone number

Telephone	+1-800-424-9300 (Chemtrec, 24 hrs/day, 7 days/week, USA and Canada)
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Preparation Information

Product Information Compliance

E-mail	SDS@avantorsciences.com
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SECTION 2: Hazard identification

Classification of the substance or mixture

Label elements

Physical hazards

Flammable liquid, category 2

Health hazards

Acute toxicity, category 4, oral, dermal and inhalation

Eye irritation, category 2

Hazard pictograms



Signal word: Danger

Hazard statements

H225 - Highly flammable liquid and vapor.

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled.

H319 - Causes serious eye irritation.

Precautionary statements

Prevention:

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

P241 - Use explosion-proof electrical/ventilating/lighting/equipment.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

Response:

P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Hazard(s) not otherwise classified (HNOC)

none

SECTION 3: Composition/information on ingredients

Substances

Substance name:	Acetonitrile
Molecular formula:	CH ₃ CN
Molecular weight:	41.05 g/mol
CAS No.:	75-05-8

SECTION 4: First aid measures

General information

When in doubt or if symptoms are observed, get medical advice. Change contaminated, saturated clothing. Do not leave affected person unattended.

In case of inhalation

Remove casualty to fresh air and keep warm and at rest. In case of respiratory tract irritation, consult a physician. When in doubt or if symptoms are observed, get medical advice.

In case of skin contact

Take off immediately all contaminated clothing. Wash off any skin contamination immediately.

After eye contact:

Rinse immediately carefully and thoroughly with eye-bath or water. Remove contact lenses, if present and easy to do. Continue rinsing. Consult an ophthalmologist. Call a POISON CENTER or doctor/physician.

In case of ingestion

Rinse mouth thoroughly with water. Immediately call a POISON CENTER/doctor. Never give anything by mouth to an unconscious person or a person with cramps.

Most important symptoms/effects, acute and delayed

After eye contact: Irritation Conjunctival redness. Following skin contact: Erythema (Redness). Oedema. Following ingestion: Vomiting. Irritation. After inhalation: Cough. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Indication of any immediate medical attention and special treatment needed

Upon absorption and metabolism acetonitrile immediately begins a slow release of cyanide, which can continue for several hours. The toxic effects and associated clinical signs of cyanide poisoning may therefore be delayed. Take a blood sample in all cases for blood cyanide using fluoride/oxalate tube and chill immediately and arrange urgent analysis. Blood cyanide levels will take some time to become available, and are generally only useful as a retrospective indicator of exposure. Treatment decisions must therefore be based on the clinical features of each individual case, without waiting for blood cyanide results. If the patient is conscious and breathing normally, administration of oxygen is the only treatment necessary. One ampoule of dicobalt edetate (300 mg) diluted in 20 ml glucose solution is given by slow intravenous injection, being careful to avoid extravasation. Constant pulse and blood pressure monitoring is required, along with facilities for resuscitation, as sudden severe fall in blood pressure can occur during injection. Treatment may be repeated if there is an inadequate response to the initial injection.

SECTION 5: Fire fighting measures

Extinguishing media

Suitable extinguishing media

ABC-powder
Carbon dioxide (CO₂).
Dry sand
Nitrogen

Extinguishing media which must not be used for safety reasons

In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion. Use dry extinguishing powder to extinguish.

Specific hazards arising from the chemical

Flammable liquids.
Risk of ignition.
Vapor may form explosive mixtures with air.
Causes eye irritation.
Vapors can travel considerable distances to a source of ignition where they can ignite, flash back, or explode.

Closed containers may burst when pressure and temperature rise.
In case of fire may be liberated:
Carbon monoxide
Carbon dioxide (CO₂).
Nitrogen oxides (NO_x)

Advice for firefighters

In case of fire and/or explosion do not breathe fumes.
Protective equipment and precautions for firefighters:
Wear a self-contained breathing apparatus and chemical protective clothing.
Co-ordinate fire-fighting measures to the fire surroundings.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: Wear personal protection equipment (refer to section 8). Avoid contact with eyes and skin. Avoid breathing dust/mist. Provide adequate ventilation. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Remove victim out of the danger area.

Environmental precautions

Cover drains. Do not allow to enter into surface water or drains. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water. Explosion risk.

Methods and material for containment and cleaning up

Clear spills immediately. Collect in closed and suitable containers for disposal. Small amounts of spillages: Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Large amounts of spillages: Take up mechanically.

Additional information

Personal protection equipment (PPE): see section 8 Safe handling: see section 7 Disposal information: see section 13

SECTION 7: Handling and storage

Precautions for safe handling

Advices on safe handling
Vapors may form explosive mixtures with air.
Use personal protective equipment as required.
Use extractor hood (laboratory).
Use only in well-ventilated areas.
Avoid breathing vapours.
Avoid contact with eyes and skin.
Measures to prevent fire, aerosol and dust generation
Usual measures for fire prevention.
Have fire-extinguishers in readiness before opening containers.
Take precautionary measures against static discharges.
Use only in well-ventilated areas.
Measures required to protect the environment
Do not empty into drains.
Collect spillage.

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Conditions for safe storage, including any incompatibilities

Recommended storage temperature: Ambient temperature

Keep container tightly closed and in a well-ventilated place. Keep away from sources of heat (e.g. hot surfaces), sparks and open flames. Protect from sunlight. Take precautionary measures against static discharge. Suitable container/equipment material: Glass High density polyethylene (HDPE) Stainless steel

Unsuitable container/equipment material: No information available.

SECTION 8: Exposure controls/personal protection

Control parameters

Ingredient (Designation)	Source	Country	parameter	Limit value
Acetonitrile	NIOSH	US	LTV	34 mg/m ³ - 20 ppm
Acetonitrile	OSHA	US	LTV	70 mg/m ³ - 40 ppm

Engineering controls

Appropriate engineering controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Personal protection equipment (PPE)

Wear suitable protective clothing. When handling with chemical substances, protective clothing must be worn.

Eye/face protection

Eye glasses with side protection

Skin protection

Wear suitable gloves. When handling with chemical substances, protective gloves must be worn. In the case of wanting to use the gloves again, clean them before taking off and air them well. Check leak tightness/impermeability prior to use.

By short-term hand contact

Suitable material: NBR (Nitrile rubber)
 Thickness of the glove material: 0,425 mm
 Breakthrough time: 14 min

By long-term hand contact

Suitable material: Butyl caoutchouc (butyl rubber)
 Thickness of the glove material: 0,30 mm
 Breakthrough time: > 480 min

Respiratory protection

Respiratory protection necessary at: aerosol or mist formation If exposure limits are exceeded or irritation is experienced, NIOSH approved respiratory protection should be worn.

Additional information

Wash hands before breaks and after work. Avoid contact with eyes and skin. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Environmental exposure controls

no data available

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

- | | |
|---------------------|-------------------|
| (a) Appearance | |
| Physical state: | liquid |
| Color: | colorless |
| (b) Odor: | ether-like |
| (c) Odor threshold: | no data available |

Safety relevant basic data

- | | |
|--|------------------------------------|
| (d) pH: | no data available |
| (e) Melting point/freezing point: | -45.7 °C |
| (f) Initial boiling point and boiling range: | 81.6 °C (1013 hPa) |
| (g) Flash point: | 2 °C (closed cup) |
| (h) Evaporation rate: | no data available |
| (i) Flammability (solid, gas): | Highly flammable liquid and vapor. |
| (j) Flammability or explosive limits | |
| Lower explosion limit: | 3 % (v/v) |
| Upper explosion limit: | 17 % (v/v) |
| (k) Vapor pressure: | 97 hPa (20 °C) |
| (l) Vapor density: | 1.42 (20 °C) |
| (m) Density: | 0.782 g/cm ³ (20 °C) |
| (n) Solubility(ies) | |
| Water solubility: | soluble (20 °C) |
| Soluble (g/L) in Ethanol: | no data available |
| (o) Partition coefficient: n-octanol/water: | -0.34 (20 °C; IUCLID) |
| (p) Auto-ignition temperature: | 524 °C |
| (q) Decomposition temperature: | Not applicable |
| (r) Viscosity | |
| Kinematic viscosity: | no data available |
| Dynamic viscosity: | 0.316 mPa*s (25 °C) |
| (s) Explosive properties: | Not applicable |
| (t) Oxidising properties: | Not applicable |

Other information

- | | |
|------------------------|-------------------------|
| Bulk density: | no data available |
| Refraction index: | 1.34604 (589 nm; 20 °C) |
| Dissociation constant: | no data available |
| Surface tension: | no data available |
| Henry's Law Constant: | no data available |

SECTION 10: Stability and reactivity

Reactivity

- Vapor may form explosive mixtures with air.
- Risk of ignition.
- In case of warming:

Risk of ignition.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature).

Possibility of hazardous reactions

Violent reaction with:

Oxidising agent.

Reducing agent.

Acid

Alkali metals

Peroxides

Conditions to avoid

This material is combustible and can be ignited by heat, sparks, flames, or other sources of ignition (e.g. static electricity, pilot lights, or mechanical/electrical equipment).

Avoid high temperatures or direct sunlight.

Incompatible materials:

Rubber articles

Plastic articles

Hazardous decomposition products

Decomposition products in case of fire: see section 5.

SECTION 11: Toxicological information

Information on toxicological effects

Acute effects

Acute oral toxicity:

TDL_o: > 64 mg/kg - Human

LD₅₀: 617 mg/kg - Mouse - (IUCLID)

LD₅₀: 617 mg/kg - Mouse - (OECD 401)

Acute dermal toxicity:

LD₅₀: > 2000 mg/kg - Rabbit - (IUCLID)

LD₅₀: > 2000 mg/kg - Rabbit - (OECD 402)

Acute inhalation toxicity:

LC₅₀: 6022 mg/m³ - Mouse - (IUCLID)

LC₅₀: 6022 mg/m³ (4 h) - Mouse - (OECD 403)

Irritant and corrosive effects:

Primary irritation to the skin:

Not applicable

Irritation to eyes:

Causes serious eye irritation.

Irritation to respiratory tract:

Not applicable

Respiratory or skin sensitization

In case of skin contact: not sensitizing

In case of inhalation: not sensitizing

STOT-single exposure

Not applicable

STOT-repeated exposure

Not applicable

CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)**Carcinogenicity**

No indication of human carcinogenicity.

Germ cell mutagenicity

No indications of human germ cell mutagenicity exist.

Reproductive toxicity

No indications of human reproductive toxicity exist.

Aspiration hazard

Not applicable

Other adverse effects

no data available

SECTION 12: Ecological information

Ecotoxicity**Fish toxicity:**

LC50: 1640 mg/l (96 h) - Brooke, L.T., D.J. Call, D.L. Geiger, and C.E. Northcott 1984. Acute Toxicities of Organic Chemicals to Fathead Minnows (*Pimephales promelas*), Vol. 1. Center for Lake Superior Environmental Stud., Univ. of Wisconsin-Superior, Superior, WI :414

Daphnia toxicity:

LC50: 3600 mg/l (48 h) - Tong, Z., Z. Huailan, and J. Hongjun 1996. Chronic Toxicity of Acrylonitrile and Acetonitrile to *Daphnia magna* in 14-d and 21-d Toxicity Tests. Bull. Environ. Contam. Toxicol. 57(4):655-659

Algae toxicity:

no data available

Bacteria toxicity:

no data available

Persistence and degradability

no data available

Bioaccumulative potential

Partition coefficient: n-octanol/water: -0.34 (20 °C; IUCLID)

Mobility in soil:

no data available

Other adverse effects

no data available

SECTION 13: Disposal considerations**Waste treatment methods****Appropriate disposal / Product**

Dispose according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Appropriate disposal / Package

Dispose according to legislation. Handle contaminated packages in the same way as the substance itself.

SECTION 14: Transport information**Land transport (DOT)**

UN-No.:	UN1648
Proper Shipping Name:	ACETONITRILE
Class(es):	3
Hazard label(s):	3
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	

Sea transport (IMDG)

UN-No.:	1648
Proper Shipping Name:	ACETONITRILE
Class(es):	3
Hazard label(s):	3
Packing group:	II
Environmental hazards:	No
Marine pollutant:	No
Special precautions for user:	
Segregation group:	-
EmS-No.	F-E S-D
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	
not relevant	

Air transport (ICAO-TI / IATA-DGR)

UN-No.:	1648
Proper Shipping Name:	ACETONITRILE
Class(es):	3

Classification code:
Hazard label(s): 3
Packing group: II
Special precautions for user:

SECTION 15: Regulatory information

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

National regulations

Toxic Substances Control Act (TSCA)

Listed

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 313 Components

Listed

US State Regulations

Massachusetts Right To Know Components

Listed

Pennsylvania Right To Know Components

Listed

New Jersey Right To Know Components

Listed

California Prop. 65 Components



WARNING:

This product can expose you to chemicals including Acetonitrile which is known to the State of California to cause cancer.

For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

Abbreviations and acronyms

ACGIH - American Conference of Governmental Industrial Hygienists
DOT - Department of Transportation
IARC - International Agency for Research on Cancer
IATA-DGR - International Air Transport Association-Dangerous Goods Regulations
ICAO-TI - International Civil Aviation Organization-Technical Instructions
IMDG - International Maritime Code for Dangerous Goods
LTV - Long Term Value
NIOSH - National Institute for Occupational Safety and Health
NTP - National Toxicology Program
OSHA - Occupational Safety & Health Administration
PBT - Persistent, Bioaccumulative and Toxic
PEL - Permissible Exposure Limit
STV - Short Term Value
SVHC - Substances of Very High Concern
TDG - Transport of Dangerous Goods
TLV - Threshold Limit Value
vPvB - very Persistent, very Bioaccumulative

Key literature references and sources for data

This Safety Data Sheet has been prepared based on information available for public as TOXNET information, European Chemicals Agency (ECHA) substance dossier, papers from international cancer research institutes (IARC Monographs), U.S. National Toxicology Program data, U.S. Agency for Toxic Substances and Disease Control (ATSDR), PubChem websites and SDS from our raw material manufacturers.

Revision date	Version	Print date
10.05.2024	1.5	2024-05-10

Additional information

Indication of changes:

general update

If you need an explanation of the change, contact the supplier (SDS@avantorsciences.com).

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