

# SAFETY DATA SHEET

## 1. Identification

**Product identifier:** Acetonitrile

### Other means of identification

**Product No.:** 0043, 2855, 2856, 9011, 9012, 9017, 9018, 9019, 9035, 9150, 9152, 9411, 9255, 9829, 9853, H076, H338, H454, 10114, RM1414

### Recommended use and restriction on use

**Recommended use:** For Laboratory, Research or Manufacturing Use.

**Restrictions on use:** Not determined.

### Details of the supplier of the safety data sheet

	Avantor Performance Materials, LLC 100 Matsonford Rd, Suite 200 Radnor, PA 19087
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Product Information Compliance
E-mail:	info@avantormaterials.com

### Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

## 2. Hazard identification

### Hazard Classification

#### Physical Hazards

Flammable liquids	Category 2
Static-accumulating flammable liquid	Category 1

#### Health Hazards

Acute toxicity (Oral)	Category 4
Acute toxicity (Inhalation - gas)	Category 4
Serious Eye Damage/Eye Irritation	Category 2A

### Label Elements

#### Hazard Symbol:



<b>Signal Word:</b>	Danger
<b>Hazard Statement:</b>	Highly flammable liquid and vapor. Harmful if swallowed. Harmful if inhaled. Causes serious eye irritation.
<b>Precautionary Statements</b>	
<b>Prevention:</b>	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Avoid breathing dust/fume/gas/mist/vapors/spray.
<b>Response:</b>	In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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/doctor if you feel unwell. Rinse mouth.
<b>Storage:</b>	Store in a well-ventilated place. Keep cool.
<b>Disposal:</b>	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
<b>Other hazards which do not result in GHS classification:</b>	None.

### 3. Composition/information on ingredients

#### Substances

Chemical name	Common name and synonyms	CAS number	Content in percent (%)*
Acetonitrile		75-05-8	99 - 100%
Acrylonitrile		107-13-1	<0,1%

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

### 4. First-aid measures

<b>General information:</b>	Get medical advice/attention if you feel unwell. If medical advice is needed, have product container or label at hand. Show this safety data sheet to the doctor in attendance.
<b>Ingestion:</b>	Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.
<b>Inhalation:</b>	Move to fresh air. Get medical attention if symptoms persist.

**Skin Contact:** Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

**Eye contact:** Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.

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

**Symptoms:** Irritating to eyes, respiratory system and skin.

**Hazards:** None known.

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

**Treatment:** The exposure should be treated as a cyanide poisoning. Symptoms may be delayed.

**5. Fire-fighting measures**

**General Fire Hazards:** Highly flammable liquid and vapor.

**Suitable (and unsuitable) extinguishing media**

**Suitable extinguishing media:** Water spray, fog, CO2, dry chemical, or alcohol resistant foam.

**Unsuitable extinguishing media:** Avoid water in straight hose stream; will scatter and spread fire.

**Specific hazards arising from the chemical:** Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger.

**Special protective equipment and precautions for firefighters**

**Special fire fighting procedures:** Move containers from fire area if you can do so without risk. Use water spray to keep fire-exposed containers cool. Cool containers exposed to flames with water until well after the fire is out.

**Special protective equipment for fire-fighters:** Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** Use personal protective equipment. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Contact local authorities in case of spillage to drain/aquatic environment.

**Methods and material for containment and cleaning up:** In case of leakage, eliminate all ignition sources. Dike far ahead of larger spill for later recovery and disposal. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination.

**Notification Procedures:** Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk. Inform authorities if large amounts are involved.

**Environmental Precautions:** Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

## 7. Handling and storage

**Precautions for safe handling:** Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid heat, sparks, open flames and other ignition sources. Take precautionary measures against static discharges. Avoid contact with eyes, skin, and clothing. Avoid breathing mist or vapor. Use only with adequate ventilation.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed. Store in a well-ventilated place. Keep far from flame and heat source, prevent contact with direct sunlight. Keep away from food, drink and animal feeding stuffs. Follow rules for flammable liquids. Ground container and transfer equipment to eliminate static electric sparks.

## 8. Exposure controls/personal protection

### Control Parameters

#### Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Acetonitrile	TWA	20 ppm 34 mg/m <sup>3</sup>	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Acetonitrile	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Acetonitrile	TWA	20 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
Acetonitrile	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Acetonitrile	15 MIN ACL	30 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	8 HR ACL	20 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Acetonitrile	STEL	60 ppm 101 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	40 ppm 67 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Acetonitrile	TWA	20 ppm	US. ACGIH Threshold Limit Values (2011)
Acrylonitrile	TWA	2 ppm 4,3 mg/m <sup>3</sup>	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Acrylonitrile	TWA	2 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Acrylonitrile	TWA	2 ppm	Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act) (03 2011)
Acrylonitrile	CEV	10 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
	TWA	2 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

Acrylonitrile	8 HR ACL	2 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
	15 MIN ACL	4 ppm	Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21) (05 2009)
Acrylonitrile	TWA	2 ppm 4,3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Acrylonitrile	TWA	2 ppm	US. ACGIH Threshold Limit Values (2011)

**Appropriate Engineering Controls** No data available.

### Individual protection measures, such as personal protective equipment

**General information:** Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

**Eye/face protection:** Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

#### Skin Protection

**Hand Protection:** Chemical resistant gloves

**Other:** Wear suitable protective clothing.

**Respiratory Protection:** In case of inadequate ventilation use suitable respirator. Chemical respirator with organic vapor cartridge and full facepiece.

**Hygiene measures:** Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

## 9. Physical and chemical properties

### Appearance

**Physical state:** Liquid

**Form:** Liquid

**Color:** Colorless

**Odor:** Ether-like odor

**Odor threshold:** No data available.

**pH:** No data available.

**Melting point/freezing point:** -46 °C

**Initial boiling point and boiling range:** 81 °C

**Flash Point:** 2 °C (Pensky-Martens Closed Cup)

**Evaporation rate:** 5,79 (n-butyl acetate=1)

**Flammability (solid, gas):** No data available.

#### Upper/lower limit on flammability or explosive limits

**Flammability limit - upper (%):** 16 %(V)

**Flammability limit - lower (%):** 4,4 %(V)

**Explosive limit - upper (%):** No data available.

**Explosive limit - lower (%):** No data available.

<b>Vapor pressure:</b>	9,73 kPa (20 °C)
<b>Vapor density:</b>	1,42
<b>Density:</b>	0,79 g/ml (20 °C)
<b>Relative density:</b>	0,79 (20 °C)
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Miscible
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	524 °C
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.
<b>Other information</b>	
<b>Liquid conductivity:</b>	0,7 µS/cm
<b>Molecular weight:</b>	41,05 g/mol

## 10. Stability and reactivity

<b>Reactivity:</b>	No dangerous reaction known under conditions of normal use.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Hazardous polymerization does not occur.
<b>Conditions to avoid:</b>	Heat, sparks, flames.
<b>Incompatible Materials:</b>	Strong oxidizing agents. Strong acids. Nitrates.
<b>Hazardous Decomposition Products:</b>	By fire, toxic gases may be formed (COx, NOx). Cyanides.

## 11. Toxicological information

**General information:** Cyanosis may result from overexposure to vapor or skin exposure.

### Information on likely routes of exposure

<b>Inhalation:</b>	Harmful if inhaled. Spray mists irritate the respiratory system, and cause coughing and difficulties in breathing.
<b>Skin Contact:</b>	Prolonged or repeated skin contact may cause drying, cracking, or irritation. May be harmful in contact with skin. Causes mild skin irritation.
<b>Eye contact:</b>	Causes serious eye irritation.
<b>Ingestion:</b>	Harmful if swallowed. Irritating. May cause nausea, stomach pain and vomiting.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

<b>Oral</b>	
<b>Product:</b>	LD 50 (Rat): 1.320 mg/kg
<b>Dermal</b>	
<b>Product:</b>	LD 50 (Rabbit): 2.000 mg/kg

**Inhalation**  
**Product:** ATEmix (Rat): 3 mg/l

**Repeated dose toxicity**  
**Product:** No data available.

**Skin Corrosion/Irritation**  
**Product:** Causes mild skin irritation.

**Serious Eye Damage/Eye Irritation**  
**Product:** Causes serious eye irritation.

**Respiratory or Skin Sensitization**  
**Product:** Not a skin nor a respiratory sensitizer.

**Carcinogenicity**  
**Product:** This substance has no evidence of carcinogenic properties.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**  
No carcinogenic components identified

**US. National Toxicology Program (NTP) Report on Carcinogens:**  
No carcinogenic components identified

**ACGIH Carcinogen List:**  
No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**  
**Product:** No mutagenic components identified

**In vivo**  
**Product:** No mutagenic components identified

**Reproductive toxicity**  
**Product:** No components toxic to reproduction

**Specific Target Organ Toxicity - Single Exposure**  
**Product:** Not known.

**Specific Target Organ Toxicity - Repeated Exposure**  
**Product:** None known.

**Aspiration Hazard**  
**Product:** Not classified

**Other effects:** None known.

<b>12. Ecological information</b>
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**Ecotoxicity:**

**Acute hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Specified substance(s):**

Acetonitrile LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 1.000 - 1.690 mg/l  
LC 50 (Guppy (*Poecilia reticulata*), 96 h): 1.650 mg/l  
LC 50 (Bluegill (*Lepomis macrochirus*), 96 h): 1.850 mg/l

Acrylonitrile LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 10,1 mg/l  
LC 50 (Bluegill (*Lepomis macrochirus*), 96 h): 11,8 mg/l  
LC 50 (Carp (*Cyprinus carpio*), 96 h): 18,07 mg/l  
LC 50 (*Cyprinodon variegatus*, 96 h): 8,6 mg/l  
NOAEL (*Cyprinodon variegatus*, 96 h): 5,4 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s):**

Acetonitrile LC 50 (Brine shrimp (*Artemia salina*), 24 h): 328 - 486,9 mg/l  
LC 50 (Water flea (*Daphnia magna*), 48 h): 3.600 mg/l  
EC 50 (Water flea (*Daphnia magna*), 48 h): > 1.000 mg/l

Acrylonitrile EC 50 (Water flea (*Daphnia magna*), 48 h): 7,38 - 12,56 mg/l  
EC 50 (Brine shrimp (*Artemia salina*), 48 h): 12,58 - 14,12 mg/l  
LC 50 (Water flea (*Daphnia magna*), 48 h): 6,2 - 10 mg/l

**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Specified substance(s):**

Acetonitrile NOAEL (*Oryzias latipes*, 21 d): 102 mg/l  
LOAEL (*Oryzias latipes*, 21 d): > 102 mg/l  
LC 50 (*Oryzias latipes*, 7 d): > 102 mg/l  
LC 50 (*Oryzias latipes*, 21 d): > 102 mg/l  
LC 50 (*Oryzias latipes*, 14 d): > 102 mg/l

Acrylonitrile LOAEL (*Pimephales promelas*, 30 d): 0,34 mg/l  
NOAEL (*Pimephales promelas*, 30 d): 0,17 mg/l

**Aquatic Invertebrates**

**Product:** No data available.

**Specified substance(s):**

Acetonitrile NOAEL (*Daphnia magna*, 21 d): 160 mg/l  
EC 50 (*Daphnia magna*, 21 d): > 960 mg/l  
LOAEL (*Daphnia magna*, 21 d): 320 mg/l

Acrylonitrile LOAEL (*Daphnia magna*, 21 d): > 4 mg/l  
LOAEL (*Daphnia magna*, 14 d): > 4 mg/l  
NOAEL (*Daphnia magna*, 21 d): 0,5 mg/l  
NOAEL (*Daphnia magna*, 14 d): 2 mg/l

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** There are no data on the degradability of this product.



**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available on bioaccumulation.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** No data available.

**Specified substance(s):**

Acetonitrile Log Kow: -0,34

Acrylonitrile Log Kow: 0,25

**Mobility in soil:**

The product is partly soluble in water. May spread in the aquatic environment.

**Other adverse effects:**

The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**13. Disposal considerations**

**Disposal instructions:**

Discharge, treatment, or disposal may be subject to national, state, or local laws.

**Contaminated Packaging:**

Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container.

**14. Transport information**

**TDG**

UN Number: UN 1648  
 UN Proper Shipping Name: ACETONITRILE  
 Transport Hazard Class(es)  
     Class: 3  
     Label(s): 3  
 Packing Group: II  
 Marine Pollutant: No  
 Special precautions for user: Not determined.

**IMDG**

UN Number: UN 1648  
 UN Proper Shipping Name: ACETONITRILE  
 Transport Hazard Class(es)  
     Class: 3  
     Label(s): 3  
     EmS No.: F-E, S-D  
 Packing Group: II  
 Marine Pollutant: No

Special precautions for user: Not determined.

**IATA**

UN Number:	UN 1648
UN Proper Shipping Name:	Acetonitrile
Transport Hazard Class(es):	
Class:	3
Label(s):	3
Packing Group:	II
Marine Pollutant:	No
Special precautions for user:	Not determined.
Cargo aircraft only:	Allowed.

Transport in bulk according to Annex II of MARPOL and the IBC Code: Not applicable

<b>15. Regulatory information</b>
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**Canada Federal Regulations**

**List of Toxic Substances (CEPA, Schedule 1)**

**Chemical Identity**

Acrylonitrile

**Export Control List (CEPA 1999, Schedule 3)**

Not Regulated

**National Pollutant Release Inventory (NPRI)**

**Canada. National Pollutant Release Inventory (NPRI) Substances, Part 5, VOCs with Additional Reporting Requirements**

NPRI PT5 Not Regulated

**Canada. National Pollutant Release Inventory (NPRI) (Schedule 1, Parts 1-4)**

NPRI Acetonitrile

**Greenhouse Gases**

Not Regulated

**Controlled Drugs and Substances Act**

CA CDSI Not Regulated

CA CDSII Not Regulated

CA CDSIII Not Regulated

CA CDSIV Not Regulated

CA CDSV Not Regulated

CA CDSVII Not Regulated

CA CDSVIII Not Regulated

**Precursor Control Regulations**

Not Regulated

**International regulations**

**Montreal protocol**

Not applicable

**Stockholm convention**

Not applicable

**Rotterdam convention**

Not applicable

**Kyoto protocol**

Not applicable

**Inventory Status:**

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory

<b>16. Other information</b>
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**Revision Date:** 25.09.2020

**Version #:** 1.4

**Source of information:** Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.

**Further Information:** No data available.

**Disclaimer:**

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