SAFETY DATA SHEET

According to US Regulation 29 CFR 1910.1200 (HazCom 2012)

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 restrictions

Recommended use: For Laboratory, Research or Manufacturing Use.
Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Company Name:	Avantor Performance Materials, LLC
Address:	100 Matsonford Rd, Suite 200 Radnor, PA 19087
Telephone:	Customer Service: 855-282-6867
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(s) identification

Hazard Classification

Physical Hazards

Flammable liquids	Category 2

Health Hazards

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

Label Elements

Hazard Symbol:

Signal Word: Danger

Hazard Statement: Highly flammable liquid and vapor.
Harmful if swallowed.
Harmful if inhaled.
Causes serious eye irritation.

Precautionary Statements

Prevention: 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.

Response: 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.

Storage: Store in a well-ventilated place. Keep cool.

Disposal: 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.

Hazard(s) not otherwise classified (HNOC): Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Substances

Chemical Identity	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

General information: 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.

Ingestion: Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

Inhalation: 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	SKIN_DES	Can be absorbed through the skin.		US. ACGIH Threshold Limit Values (2011)
	TWA	20 ppm		US. ACGIH Threshold Limit Values (2011)
	REL	20 ppm	34 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	40 ppm	70 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	60 ppm	105 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	40 ppm	70 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	40 ppm	70 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		200 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL		20 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	AN ESL		34 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	ST ESL		340 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (12 2010)
	STEL	60 ppm	105 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	40 ppm	70 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	SKIN_DES	Can be absorbed through the skin.		US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	STEL	60 ppm	105 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
Acrylonitrile	TWA	2 ppm		US. ACGIH Threshold Limit Values (2011)
	SKIN_DES	Can be absorbed through the skin.		US. ACGIH Threshold Limit Values (2011)
	REL	1 ppm		US. NIOSH: Pocket Guide to Chemical

				Hazards (2010)
	Ceil_Time	10 ppm		US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	SKIN_DES	Can be absorbed through the skin.		US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REF	29 CFR 1910.1045		US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2012)
	TWA	2 ppm		US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	STEL	10 ppm		US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	OSHA_ACT	1 ppm		US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	TWA	2 ppm		US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	10 ppm		US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	10 ppm		US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	TWA	2 ppm		US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	SKIN_DES	Can be absorbed through the skin.		US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	ST ESL	Health	330 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	AN ESL	Health	2.1 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	AN ESL	Health	0.97 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health	150 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)

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.
Vapor pressure:	9.73 kPa (20 °C)
Vapor density:	1.42
Density:	0.79 g/ml (20 °C)
Relative density:	0.79 (20 °C)
Solubility(ies)	
Solubility in water:	Miscible
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	524 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

Other information

Liquid conductivity:	0.7 µS/cm
Molecular weight:	41.05 g/mol

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames.
Incompatible Materials:	Strong oxidizing agents. Strong acids. Nitrates.
Hazardous Decomposition Products:	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

Inhalation: Harmful if inhaled. Spray mists irritate the respiratory system, and cause coughing and difficulties in breathing.

Skin Contact: Prolonged or repeated skin contact may cause drying, cracking, or irritation. May be harmful in contact with skin. Causes mild skin irritation.

Eye contact: Causes serious eye irritation.

Ingestion: Harmful if swallowed. Irritating. May cause nausea, stomach pain and vomiting.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD 50 (Rat): 1,320 mg/kg

Dermal
Product: LD 50 (Rabbit) 2,000 mg/kg

Inhalation
Product: ATEmix (Rat, 4 h) 3 mg/l Vapour

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

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
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.

12. Ecological information

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

DOT

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
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.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Chemical Identity	OSHA hazard(s)
Acrylonitrile	Liver
	Central nervous system
	Flammability
	Eye irritation
	Skin irritation
	Skin sensitization
	Respiratory irritation
	Cancer
	Acute toxicity

CERCLA Hazardous Substance List (40 CFR 302.4):

Chemical Identity	Reportable quantity
Acetonitrile	5000 lbs.
Acrylonitrile	100 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation
Hazards Not Otherwise Classified (HNOC)

SARA 302 Extremely Hazardous Substance

Chemical Identity	Reportable quantity	Threshold Planning Quantity
Acrylonitrile	100 lbs.	10000 lbs.

SARA 304 Emergency Release Notification

Chemical Identity	Reportable quantity
Acetonitrile	5000 lbs.
Acrylonitrile	100 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Acrylonitrile	500 lbs.
Acetonitrile	10000 lbs.

SARA 313 (TRI Reporting)

Chemical Identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
Acetonitrile	10000 lbs.	25000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

Chemical Identity	Reportable quantity
Acrylonitrile	20000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

Chemical Identity	Reportable quantity
Acrylonitrile	Reportable quantity: 100 lbs.

US State Regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

Acrylonitrile	Carcinogenic.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Acetonitrile

US. Massachusetts RTK - Substance List

Chemical Identity
Acetonitrile
Acrylonitrile

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Acetonitrile

US. Rhode Island RTK

Chemical Identity
Acetonitrile

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

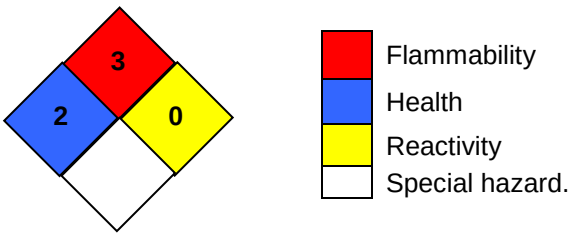
Not applicable

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

16.Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	09-25-2020
Revision Information:	Not relevant.
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.

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