



# SAFETY DATA SHEET

Creation Date 16-Jun-2009

Revision Date 19-Feb-2014

Revision Number 1

## 1. Identification

**Product Name** Acetonitrile  
**Cat No. :** AC364310000; AC364310010; AC364310025; AC364311000;  
AC364315000  
**Synonyms** AN; Methyl cyanide  
**Recommended Use** Laboratory chemicals  
**Uses advised against** No Information available

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

Company	Entity / Business Name	Emergency Telephone Number
Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410 Tel: (201) 796-7100	Acros Organics One Reagent Lane Fair Lawn, NJ 07410	For information <b>US</b> call: 001-800-ACROS-01 / <b>Europe</b> call: +32 14 57 52 11 Emergency Number <b>US</b> :001-201-796-7100 / <b>Europe</b> : +32 14 57 52 99 <b>CHEMTREC</b> Tel. No. <b>US</b> :001-800-424-9300 / <b>Europe</b> :001-703-527-3887

## 2. Hazard(s) identification

### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system, Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Kidney, Liver.	

### Label Elements

#### Signal Word

Danger

#### Hazard Statements

Highly flammable liquid and vapor

Harmful if inhaled  
Harmful if swallowed  
Harmful in contact with skin  
Causes serious eye irritation  
May cause respiratory irritation  
May cause drowsiness or dizziness  
May cause damage to organs through prolonged or repeated exposure

**Precautionary Statements****Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Do not eat, drink or smoke when using this product  
Wear protective gloves/protective clothing/eye protection/face protection  
Use only outdoors or in a well-ventilated area  
Do not breathe dust/fume/gas/mist/vapors/spray  
Keep away from heat/sparks/open flames/hot surfaces. - No smoking  
Keep container tightly closed  
Ground/bond container and receiving equipment  
Use explosion-proof electrical/ventilating/lighting/equipment  
Use only non-sparking tools  
Take precautionary measures against static discharge  
Keep cool

**Response**

Get medical attention/advice if you feel unwell

**Inhalation**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
Call a POISON CENTER or doctor/physician if you feel unwell

**Skin**

Call a POISON CENTER or doctor/physician if you feel unwell

Wash contaminated clothing before reuse

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

**Eyes**

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.

**Ingestion**

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
Rinse mouth

**Fire**

In case of fire: Use CO<sub>2</sub>, dry chemical, or foam for extinction

**Storage**

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

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition / Information on ingredients

#### Haz/Non-haz

Component	CAS-No	Weight %
Acetonitrile	75-05-8	>95

### 4. First-aid measures

<b>General Advice</b>	Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.
<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
<b>Inhalation</b>	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.
<b>Ingestion</b>	Do not induce vomiting. Call a physician or Poison Control Center immediately.
<b>Most important symptoms/effects</b>	Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.
<b>Notes to Physician</b>	Treat symptomatically.

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray. CO <sub>2</sub> , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.
<b>Unsuitable Extinguishing Media</b>	Water may be ineffective, Do not use a solid water stream as it may scatter and spread fire
<b>Flash Point</b>	12.8°C / 55°F
<b>Method -</b>	No information available.
<b>Autoignition Temperature</b>	525°C / 977°F
<b>Explosion Limits</b>	
<b>Upper</b>	16 vol %
<b>Lower</b>	3 vol %
<b>Oxidizing Properties</b>	Not oxidising
<b>Sensitivity to mechanical impact</b>	No information available.
<b>Sensitivity to static discharge</b>	No information available.

#### Specific Hazards Arising from the Chemical

Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

**Hazardous Combustion Products** Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NO<sub>x</sub>), Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>).

**Protective Equipment and Precautions for Firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

**NFPA**

<b>Health</b> 2	<b>Flammability</b> 3	<b>Instability</b> 0	<b>Physical hazards</b> N/A
--------------------	--------------------------	-------------------------	--------------------------------

**6. Accidental release measures**

**Personal Precautions** Remove all sources of ignition. Take precautionary measures against static discharges. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Ensure adequate ventilation. Use personal protective equipment.

**Environmental Precautions** Should not be released into the environment.

**Methods for Containment and Clean Up** Remove all sources of ignition. Take precautionary measures against static discharges. Provide adequate ventilation. Use spark-proof tools and explosion-proof equipment. Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Prevent product from entering drains.

**7. Handling and storage**

**Handling** Wear personal protective equipment. Ensure adequate ventilation. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Use spark-proof tools and explosion-proof equipment..

**Storage** Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

**8. Exposure controls / personal protection**

**Exposure Guidelines**

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Acetonitrile	TWA: 20 ppm Skin	(Vacated) TWA: 40 ppm (Vacated) TWA: 70 mg/m <sup>3</sup> (Vacated) STEL: 60 ppm (Vacated) STEL: 105 mg/m <sup>3</sup> TWA: 40 ppm TWA: 70 mg/m <sup>3</sup>	IDLH: 500 ppm TWA: 20 ppm TWA: 34 mg/m <sup>3</sup>

Component	Quebec	Mexico OEL (TWA)	Ontario TWA EV
Acetonitrile	TWA: 40 ppm TWA: 67 mg/m <sup>3</sup> STEL: 60 ppm STEL: 101 mg/m <sup>3</sup> Ceiling: 10 ppm Ceiling: 11 mg/m <sup>3</sup> Skin	TWA: 40 ppm TWA: 70 mg/m <sup>3</sup> STEL: 60 ppm STEL: 105 mg/m <sup>3</sup>	TWA: 20 ppm Skin

**Legend**

**ACGIH** - American Conference of Industrial Hygiene

**OSHA** - Occupational Safety and Health Administration

**NIOSH IDLH**: Immediately Dangerous to Life or Health

<b>Engineering Measures</b>	Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.
<b>Personal Protective Equipment</b>	
<b>Eye/face Protection</b>	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
<b>Skin and body protection</b>	Wear appropriate protective gloves and clothing to prevent skin exposure.
<b>Respiratory Protection</b>	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
<b>Hygiene Measures</b>	When using, do not eat, drink or smoke. Provide regular cleaning of equipment, work area and clothing.

## 9. Physical and chemical properties

<b>Physical State</b>	Liquid
<b>Appearance</b>	Colorless
<b>Odor</b>	aromatic
<b>Odor Threshold</b>	170 ppm
<b>pH</b>	Not applicable
<b>Melting Point/Range</b>	-46°C / -50.8°F
<b>Boiling Point/Range</b>	81 - 82°C / 177.8 - 179.6°F @ 760 mmHg
<b>Flash Point</b>	12.8°C / 55°F
<b>Evaporation Rate</b>	5.79
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	16 vol %
<b>Lower</b>	3 vol %
<b>Vapor Pressure</b>	97 mbar @ 20 °C
<b>Vapor Density</b>	1.42
<b>Relative Density</b>	0.781
<b>Solubility</b>	Soluble in water
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	525°C / 977°F
<b>Decomposition temperature</b>	No information available.
<b>Viscosity</b>	0.36 cP at 20 °C
<b>Molecular Formula</b>	C2 H3 N
<b>Molecular Weight</b>	41.04

## 10. Stability and reactivity

<b>Reactive Hazard</b>	None known, based on information available.
<b>Stability</b>	Stable under normal conditions.
<b>Conditions to Avoid</b>	Incompatible products. Keep away from open flames, hot surfaces and sources of ignition. Exposure to moisture.
<b>Incompatible Materials</b>	Strong oxidizing agents, Strong acids, Reducing agents, Bases
<b>Hazardous Decomposition Products</b>	Hydrogen cyanide (hydrocyanic acid), Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur

**Hazardous Reactions** None under normal processing

## 11. Toxicological information

### Acute Toxicity

### Product Information

#### Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Acetonitrile	450-787 mg/kg (Rat) 2460 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	7551 ppm ( Rat ) 8 h

**Toxicologically Synergistic Products** No information available.

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

**Irritation** Irritating to eyes

**Sensitization** No information available.

**Carcinogenicity** The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Acetonitrile	75-05-8	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** Mutagenic effects have occurred in experimental animals.

**Reproductive Effects** Experiments have shown reproductive toxicity effects on laboratory animals.

**Developmental Effects** Developmental effects have occurred in experimental animals.

**Teratogenicity** Teratogenic effects have occurred in experimental animals..

**STOT - single exposure** Respiratory system, Central nervous system (CNS).

**STOT - repeated exposure** Kidney, Liver.

**Aspiration hazard** No information available.

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness, and possible death. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

**Endocrine Disruptor Information** No information available

**Other Adverse Effects** The toxicological properties have not been fully investigated.

## 12. Ecological information

### Ecotoxicity

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Acetonitrile	Not listed	1850 mg/L LC50 96 h 1650 mg/L LC50 96 h 1000 mg/L LC50 96 h 1600-1690 mg/L LC50 96 h	EC50 = 28000 mg/L 48 h EC50 = 73 mg/L 24 h EC50 = 7500 mg/L 15 h	5838 mg/L EC50 = 18 h

**Persistence and Degradability** Persistence is unlikely, based on information available.

**Bioaccumulation/ Accumulation** No information available

**Mobility** Will likely be mobile in the environment due to its volatility.

Component	log Pow
Acetonitrile	-0.34

### 13. Disposal considerations

**Waste Disposal Methods** Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Acetonitrile - 75-05-8	U003	-

### 14. Transport information

**DOT**

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

**TDG**

UN-No UN1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

**IATA**

UN-No 1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

**IMDG/IMO**

UN-No 1648  
 Proper Shipping Name ACETONITRILE  
 Hazard Class 3  
 Packing Group II

### 15. Regulatory information

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Acetonitrile	T	X	-	200-835-2	-		X	X	X	X	X

**Legend:**

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

**U.S. Federal Regulations**

**TSCA 12(b)**

Component	TSCA 12(b)
Acetonitrile	Section 4

**SARA 313**

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Acetonitrile	75-05-8	>95	1.0

**SARA 311/312 Hazardous Categorization**

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

**Clean Water Act** Not applicable

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Acetonitrile	-	-	X	-

**Clean Air Act**

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Acetonitrile	X		-

**OSHA Occupational Safety and Health Administration**  
**OSHA - Occupational Safety and Health Administration**

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Acetonitrile	5000 lb	-

**California Proposition 65** This product does not contain any Proposition 65 chemicals.

**State Right-to-Know**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Acetonitrile	X	X	X	X	X



**U.S. Department of Transportation**

Reportable Quantity (RQ): N  
DOT Marine Pollutant N  
DOT Severe Marine Pollutant N

**U.S. Department of Homeland Security**

This product does not contain any DHS chemicals.

**Other International Regulations**

**Mexico - Grade** Serious risk, Grade 3

**Canada**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**WHMIS Hazard Class** B2 Flammable liquid  
D1A Very toxic materials  
D2B Toxic materials

**16. Other information**

**Prepared By** Regulatory Affairs  
Thermo Fisher Scientific  
Email: EMSDS.RA@thermofisher.com

**Creation Date** 16-Jun-2009

**Revision Date** 19-Feb-2014

**Print Date** 19-Feb-2014

**Revision Summary** This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

**Disclaimer**

The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

**End of SDS**