

## SAFETY DATA SHEET

Creation Date 22-Sep-2009

Revision Date 19-Jan-2018

Revision Number 3

### 1. Identification

**Product Name** Benzonitrile

**Cat No. :** AC105540000; AC105540010; AC105540025; AC105540050

**CAS-No** 100-47-0  
**Synonyms** BN

**Recommended Use** Laboratory chemicals.  
**Uses advised against** Not for food, drug, pesticide or biocidal product use

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

##### Company

Fisher Scientific  
One Reagent Lane  
Fair Lawn, NJ 07410  
Tel: (201) 796-7100

Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

##### **Emergency Telephone Number**

For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11  
Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99  
**CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**: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 4
Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4

#### **Label Elements**

##### **Signal Word**

Warning

##### **Hazard Statements**

Combustible liquid  
Harmful if swallowed  
Harmful in contact with skin



**Precautionary Statements****Prevention**

Wear protective gloves/protective clothing/eye protection/face protection

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Take precautionary measures against static discharge

Do not eat, drink or smoke when using this product

Wash face, hands and any exposed skin thoroughly after handling

**Skin**

IF ON SKIN: Wash with plenty of soap and water

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

Take off contaminated clothing and wash before reuse

**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 cool

**Disposal**

Dispose of contents/container to an approved waste disposal plant

**Hazards not otherwise classified (HNOC)**

None identified

### 3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Benzonitrile	100-47-0	>95

### 4. First-aid measures

<b>Eye Contact</b>	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
<b>Skin Contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
<b>Inhalation</b>	Move to fresh air. Obtain medical attention. If not breathing, give artificial respiration.
<b>Ingestion</b>	Do not induce vomiting. Obtain medical attention.
<b>Most important symptoms and effects</b>	Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
<b>Notes to Physician</b>	Treat symptomatically

### 5. Fire-fighting measures

<b>Suitable Extinguishing Media</b>	Water spray. Carbon dioxide (CO <sub>2</sub> ). Dry chemical. alcohol-resistant foam. Cool closed containers exposed to fire with water spray.
<b>Unsuitable Extinguishing Media</b>	No information available
<b>Flash Point</b>	71 °C / 159.8 °F
<b>Method -</b>	No information available
<b>Autoignition Temperature</b>	550 °C / 1022 °F

**Explosion Limits**

<b>Upper</b>	7.20%
<b>Lower</b>	1.40%
<b>Sensitivity to Mechanical Impact</b>	No information available
<b>Sensitivity to Static Discharge</b>	No information available

**Specific Hazards Arising from the Chemical**

Combustible material. Flammable. Vapors may form explosive mixtures with air. Containers may explode when heated.

**Hazardous Combustion Products**

Nitrogen oxides (NOx) 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.

**NFPA**

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

**6. Accidental release measures****Personal Precautions**

Ensure adequate ventilation. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Avoid contact with skin, eyes and clothing.

**Environmental Precautions**

Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

**Methods for Containment and Clean Up**

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Provide adequate ventilation. Do not flush into surface water or sanitary sewer system. Remove all sources of ignition.

**7. Handling and storage****Handling**

Ensure adequate ventilation. Wear personal protective equipment. Take precautionary measures against static discharges. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin, eyes and clothing. Avoid breathing dust/fume/gas/mist/vapors/spray.

**Storage**

Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Material darkens in color during storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area.

**8. Exposure controls / personal protection****Exposure Guidelines**

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Benzonitrile		(Vacated) TWA: 5 mg/m <sup>3</sup>	IDLH: 14 ppm IDLH: 25 mg/m <sup>3</sup>	TWA: 5 mg/m <sup>3</sup>

**Legend**

OSHA - Occupational Safety and Health Administration

NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

**Engineering Measures**

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

**Personal Protective Equipment**

<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>	Handle in accordance with good industrial hygiene and safety practice.

**9. Physical and chemical properties**

<b>Physical State</b>	Liquid
<b>Appearance</b>	Clear
<b>Odor</b>	bitter almond
<b>Odor Threshold</b>	No information available
<b>pH</b>	No information available
<b>Melting Point/Range</b>	-13 °C / 8.6 °F
<b>Boiling Point/Range</b>	188 - 191 °C / 370.4 - 375.8 °F @ 760 mmHg
<b>Flash Point</b>	71 °C / 159.8 °F
<b>Evaporation Rate</b>	No information available
<b>Flammability (solid,gas)</b>	Not applicable
<b>Flammability or explosive limits</b>	
<b>Upper</b>	7.20%
<b>Lower</b>	1.40%
<b>Vapor Pressure</b>	1.33 mbar @ 20 °C
<b>Vapor Density</b>	3.56
<b>Specific Gravity</b>	1.010
<b>Solubility</b>	No information available
<b>Partition coefficient; n-octanol/water</b>	No data available
<b>Autoignition Temperature</b>	550 °C / 1022 °F
<b>Decomposition Temperature</b>	No information available
<b>Viscosity</b>	1.24 cPs at 25 °C
<b>Molecular Formula</b>	C7 H5 N
<b>Molecular Weight</b>	103.12

**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>	Temperatures above 30°C. Exposure to air. Incompatible products. Keep away from open flames, hot surfaces and sources of ignition.
<b>Incompatible Materials</b>	Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents
<b>Hazardous Decomposition Products</b>	Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO <sub>2</sub> )
<b>Hazardous Polymerization</b>	Hazardous polymerization does not occur.
<b>Hazardous Reactions</b>	None under normal processing.

**11. Toxicological information****Acute Toxicity**

**Product Information**  
**Component Information**

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzonitrile	LD50 = 700 mg/kg ( Rat )	LD50 = 1250 mg/kg ( Rabbit )	Not listed

**Toxicologically Synergistic Products** No information available

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

**Irritation** No information available

**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
Benzonitrile	100-47-0	Not listed	Not listed	Not listed	Not listed	Not listed

**Mutagenic Effects** Not mutagenic in AMES Test

**Reproductive Effects** No information available.

**Developmental Effects** No information available.

**Teratogenicity** No information available.

**STOT - single exposure** None known

**STOT - repeated exposure** None known

**Aspiration hazard** No information available

**Symptoms / effects, both acute and delayed** Symptoms of overexposure may be 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**

Contains a substance which is: Harmful to aquatic organisms. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Benzonitrile	EC50: = 231 mg/L, 6h (Chlorella vulgaris)	LC50: = 78 mg/L, 96h static (Pimephales promelas) LC50: = 400 mg/L, 96h static (Poecilia reticulata) LC50: = 64 mg/L, 96h (Pimephales promelas) LC50: = 130 mg/L, 96h (Brachydanio rerio) LC50: = 78 mg/L, 96h static (Lepomis macrochirus)	EC50 = 10.1 mg/L 5 min EC50 = 10.6 mg/L 15 min EC50 = 11.6 mg/L 30 min EC50 = 32 mg/L 24 h	EC50: = 122 mg/L, 24h (Daphnia magna)

**Persistence and Degradability** Persistence is unlikely

**Bioaccumulation/ Accumulation** No information available.

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

Component	log Pow
Benzonitrile	1.6

### 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.

### 14. Transport information

**DOT**

UN-No UN2224  
 Proper Shipping Name BENZONITRILE  
 Hazard Class 6.1  
 Packing Group II

**TDG**

UN-No UN2224  
 Proper Shipping Name BENZONITRILE  
 Hazard Class 6.1  
 Packing Group II

**IATA**

UN-No UN2224  
 Proper Shipping Name BENZONITRILE  
 Hazard Class 6.1  
 Packing Group II

**IMDG/IMO**

UN-No UN2224  
 Proper Shipping Name BENZONITRILE  
 Hazard Class 6.1  
 Packing Group II

### 15. Regulatory information

**International Inventories**

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Benzonitrile	X	X	-	202-855-7	-		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) Not applicable

SARA 313 Not applicable

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Benzonitrile	100-47-0	>95	1.0

SARA 311/312 Hazard Categories See section 2 for more information

**CWA (Clean Water Act)**

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Benzonitrile	X	5000 lb	X	X

**Clean Air Act**

Not applicable

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

**OSHA** Occupational Safety and Health Administration  
Not applicable

**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
Benzonitrile	5000 lb	-

**California Proposition 65**

This product does not contain any Proposition 65 chemicals

**U.S. State Right-to-Know Regulations**

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzonitrile	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**

No information available

**16. Other information****Prepared By**

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

**Creation Date**

22-Sep-2009

**Revision Date**

19-Jan-2018

**Print Date**

19-Jan-2018

**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 in 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text

**End of SDS**