

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Benzonitrile

Product Number : 294098  
Brand : Sigma-Aldrich

Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
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Emergency Phone # : (314) 776-6555

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

##### OSHA Hazards

Combustible Liquid, Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Irritant

##### Target Organs

Liver, Blood, Kidney, Heart, Central nervous system

##### Other hazards which do not result in classification

Vesicant.

##### GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H227 Combustible liquid  
H302 + H312 Harmful if swallowed or in contact with skin.  
H315 Causes skin irritation.  
H332 Harmful if inhaled.  
H402 Harmful to aquatic life.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P322 Specific measures (see supplemental first aid instructions on this label).  
P330 Rinse mouth.  
P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.  
P403 + P235 Store in a well-ventilated place. Keep cool.  
P501 Dispose of contents/container to an approved waste disposal plant.

#### HMIS Classification

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 0

#### NFPA Rating

Health hazard: 2  
Fire: 2  
Reactivity Hazard: 0

#### Potential Health Effects

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation.  
**Skin** Harmful if absorbed through skin. Causes skin irritation.  
**Eyes** Causes eye irritation.  
**Ingestion** Harmful if swallowed.

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### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Phenyl cyanide

Formula : C<sub>7</sub>H<sub>5</sub>N

Molecular Weight : 103.12 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
<b>Benzonitrile</b>			
100-47-0	202-855-7	608-012-00-3	-

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### 4. FIRST AID MEASURES

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

#### In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

#### In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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### 5. FIRE-FIGHTING MEASURES

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

#### Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

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### 6. ACCIDENTAL RELEASE MEASURES

#### Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

#### Environmental precautions

Do not let product enter drains.

### Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

### Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

hygroscopic Handle and store under inert gas.

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

### Personal protective equipment

#### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Handle with gloves.

#### Eye protection

Face shield and safety glasses

#### Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

#### Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form	liquid
Colour	colourless

### Safety data

pH	no data available
Melting point	-13 °C (9 °F) - lit.
Boiling point	191 °C (376 °F) - lit.
Flash point	70 °C (158 °F) - closed cup
Ignition temperature	550 °C (1,022 °F)
Lower explosion limit	1.4 %(V)
Upper explosion limit	7.2 %(V)
Vapour pressure	1 hPa (1 mmHg) at 20 °C (68 °F)
Density	1.000 g/cm <sup>3</sup>
Water solubility	ca.10 g/l
Partition coefficient: n-octanol/water	log Pow: 1.56

Relative vapour density 3.56  
- (Air = 1.0)

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Conditions to avoid

Avoid moisture. Do not heat over: 30°C

### Materials to avoid

Strong bases, Strong oxidizing agents, Strong reducing agents, acids, Chlorates, Nitrates, Plastics

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - mouse - 971 mg/kg

LC50 Inhalation - mouse - 1,800 mg/m<sup>3</sup>

LD50 Dermal - rabbit - 1,250 mg/kg

### Skin corrosion/irritation

Skin - rabbit - Skin irritation - 24 h

### Serious eye damage/eye irritation

no data available

### Respiratory or skin sensitization

no data available

### Germ cell mutagenicity

no data available

### Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

### Reproductive toxicity

no data available

### Specific target organ toxicity - single exposure (GHS)

no data available

### Specific target organ toxicity - repeated exposure (GHS)

no data available

### Aspiration hazard

no data available

### Potential health effects

<b>Inhalation</b>	May be harmful if inhaled. Causes respiratory tract irritation.
<b>Ingestion</b>	Harmful if swallowed.
<b>Skin</b>	Harmful if absorbed through skin. Causes skin irritation.
<b>Eyes</b>	Causes eye irritation.

### Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**Additional Information**

RTECS: DI2450000

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**12. ECOLOGICAL INFORMATION**

**Toxicity**

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 32 mg/l - 96 h

**Persistence and degradability**

Biodegradability Biotic/Aerobic  
Result: - Readily biodegradable.

Biotic/Aerobic

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

no data available

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**13. DISPOSAL CONSIDERATIONS**

**Product**

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

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**14. TRANSPORT INFORMATION**

**DOT (US)**

UN-Number: 2224 Class: 6.1 Packing group: II  
Proper shipping name: Benzonitrile  
Reportable Quantity (RQ): 5000 lbs  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

UN-Number: 2224 Class: 6.1 Packing group: II EMS-No: F-A, S-A  
Proper shipping name: BENZONITRILE  
Marine pollutant: No

**IATA**

UN-Number: 2224 Class: 6.1 Packing group: II  
Proper shipping name: Benzonitrile

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**15. REGULATORY INFORMATION**

**OSHA Hazards**

Combustible Liquid, Target Organ Effect, Harmful by ingestion., Harmful by skin absorption., Irritant

**DSL Status**

All components of this product are on the Canadian DSL list.

**SARA 302 Components**

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

	CAS-No.	Revision Date
Benzonitrile	100-47-0	1993-04-24

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Benzonitrile	100-47-0	1993-04-24

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Benzonitrile	100-47-0	1993-04-24

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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**16. OTHER INFORMATION****Further information**

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