



SIGMA-ALDRICH

Material Safety Data Sheet

Date Printed: 04/22/2003
Date Updated: 09/02/2002
Version 1.10

Section 1 - Product and Company Information

Product Name BENZONITRILE, 99%
Product Number B8959
Brand Aldrich Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
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Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>
BENZONITRILE	100-47-0	No

Formula C7H5N
Synonyms Benzene, cyano-, Benzenenitrile, Benzoic acid nitrile, Cyanobenzene, Fenylkjanid (Czech), Phenyl cyanide

Section 3 - Hazards Identification

Emergency Overview
Harmful.
Harmful in contact with skin and if swallowed. Risk of serious damage to eyes. Irritating to skin.
Combustible.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure
Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

Information for Physician
Contamination of the eyes should be treated by immediate and prolonged irrigation with copious amounts of water.

Section 5 - Fire Fighting Measures

Flash Point: 158 °F 70 °C

Explosion Limits: Lower: 1.4 % Upper: 7.2 %

Autoignition Temp: 550 °C

Extinguishing Media
Suitable
Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions.

Exposure Hazard(s)
Material
Harmful liquid.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill
Evacuate area.

Procedure(s) of Personal Precaution(s)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Absorb on sand or vermiculite and place in closed containers for disposal.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe vapor. Do not get in eyes, on skin, on clothing.

Storage
Suitable
Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath.

Personal Protective Equipment
Other
Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

General Hygiene Measures
Wash thoroughly after handling. Remove and wash contaminated clothing promptly.

Molecular Weight: 103.12 AMU

pH N/A
BP/BP Range 191 °C
MP/MP Range -13 °C
Freezing Point N/A
Vapor Pressure 1 mmHg 20 °C
Vapor Density 3.6 g/l
Saturated Vapor Conc. N/A

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Dupl

SG/Density 1 g/cm3
Bulk Density N/A
Odor Threshold N/A
Volatile% N/A
VOC Content N/A
Water Content < 0.03 %
Solvent Content N/A
Evaporation Rate N/A
Viscosity 1.24 Pas 25 °C
Surface Tension 38.79 mN/m 25 °C
Partition Coefficient Log Kow: 1.56
Decomposition Temp. N/A
Flash Point °F 158 °F
Flash Point °C 70 °C
Explosion Limits Lower: 1.4 %
Upper: 7.2 %
Flammability N/A
Autoignition Temp 550 °C
Refractive Index 1.528
Solubility
Solubility in Water: 10 mg/ml H2O hot
Solubility in Water: 2 mg/ml H2O

Method: closed cup
Method: closed cup

N/A = not available

Section 10 - Stability and Reactivity

Stability

Conditions to Avoid

Sensitive to air.

Materials to Avoid

Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents.

Hazardous Decomposition Products

Hazardous Decomposition Products

Thermal decomposition may produce carbon monoxide, carbon dioxide, and nitrogen oxides.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact

Causes skin irritation.

Inhalation

May be harmful if inhaled.

Multiple Routes

Harmful if swallowed or absorbed through skin.

RTECS Number: DI2450000

Toxicity Data

Skin - Rat: 1,200 mg/kg (LD50)

Intraperitoneal - Rat: 740 MG/KG (LD50)

Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Etoxis.

Behavioral: Muscle weakness.

Lungs, Thorax, or Respiration: Acute pulmonary edema.

Oral - Mouse: 971 mg/kg (LD50)

Inhalation - Mouse: 1,800 mg/m3 (LC50)

Intraperitoneal - Mouse: 400 MG/KG (LD50)

Oral - Cat: 800 mg/kg (LD50)

Remarks: Behavioral: Tremor.

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Behavioral: Convulsions or effect on seizure threshold.

Oral - Rabbit: 800 mg/kg (LD50)

Remarks: Behavioral: Tremor.

Behavioral: Convulsions or effect on seizure threshold.

Skin - Rabbit: 1,250 mg/kg (LD50)

Intraperitoneal - Rabbit: 1250 MG/KG (LD50)

Oral - Mammal: 800 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 500 mg 24H

Remarks: Moderate irritation effect

Section 12 - Ecological Information

Acute Ecotoxicity Tests

Test Type

EC50 Daphnia

Species

Daphnia magna

Time:

24.0 h

Value:

122 - 155 mg/l

Test Type

LC50 Fish

Species

Leuciscus idus

Time:

96.0 h

Value:

54 mg/l

Test Type

LC50 Fish

Species

Pimephales promelas (Fathead minnow)

Time:

96.0 h

Value:

78 - 135 mg/l

Test Type

LC50 Fish

Species

Onchorhynchus mykiss (Rainbow trout)

Time:

96.0 h

Value:

32 mg/l

Test Type

LC50 Fish

Species

Lepomis macrochirus (Bluegill)

Time:

96.0 h

Value:

78 mg/l

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

IATA

Proper Shipping Name: Benzonitrile

IATA UN Number: 2224

Hazard Class: 6.1

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Packing Group: II

Section 15 - Regulatory Information

EU Directives Classification

Symbol of Danger: Xn

Indication of Danger

Harmful.

Risk Statements R: 21/22

Harmful in contact with skin and if swallowed.

Safety Statements S: 23

Do not breathe vapor.

US Classification and Label Text

Indication of Danger

Harmful.

Risk Statements

Harmful in contact with skin and if swallowed. Risk of serious damage to eyes. Irritating to skin.

Safety Statements

In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Take off immediately all contaminated clothing. Wear suitable protective clothing, gloves, and eye/face protection.

US Statements

Combustible.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2003 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.