

Material Safety Data Sheet

Benzonitrile, 99+%, spectrophotometric grade

ACC# 91971

Section 1 - Chemical Product and Company Identification

MSDS Name: Benzonitrile, 99+%, spectrophotometric grade

Catalog Numbers: AC167672500

Synonyms: Phenyl cyanide; Benzenenitrile; Benzoic acid nitrile; Cyanobenzene; BN.

Company Identification:

Acros Organics N.V.

One Reagent Lane

Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
100-47-0	Benzonitrile	99	202-855-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear to light yellow liquid. Flash Point: 159.8 deg F.

Danger! Exposure to high levels of benzonitrile by breathing or skin contact can cause trouble breathing, convulsions, coma and death. Lower exposures can cause dizziness, lightheadedness, headache, nausea and sleepiness. Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye, skin, and respiratory tract irritation. **Combustible liquid and vapor.**

Target Organs: Central nervous system, liver, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. May be harmful if absorbed through the skin. Effects of contact may be delayed.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May be harmful if swallowed.

Inhalation: Causes respiratory tract irritation. Effects of inhalation may be delayed.

Chronic: Repeated exposure to benzonitrile may damage the liver and nervous system. Intermittent inhalation in animal studies demonstrated adverse effects to liver, blood, and metabolism.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid immediately.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: POISON material. If inhaled, get medical aid immediately. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Combustible liquid. Containers may explode when heated. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products.

Extinguishing Media: Do NOT get water inside containers. Do NOT use straight streams of water. For small fires, use dry chemical, carbon dioxide, or water spray. For large fires, use water spray, fog or regular foam. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 159.8 deg F (71.00 deg C)

Autoignition Temperature: 550 deg C (1,022.00 deg F)

Explosion Limits, Lower: 1.40 vol %

Upper: 7.20 vol %

NFPA Rating: (estimated) Health: 3; Flammability: 2; Instability: 1

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section.

Remove all sources of ignition. Provide ventilation. Cover solids with a plastic sheet to prevent dissolving in rain or fire fighting waters.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Benzonitrile	none listed	none listed	none listed

OSHA Vacated PELs: Benzonitrile: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: 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.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear to light yellow

Odor: almond-like

pH: Not available.

Vapor Pressure: .97 mm Hg @ 20C

Vapor Density: 3.56

Evaporation Rate:Not available.

Viscosity: 1.24 cps @ 25 deg C

Boiling Point: 188.0 - 191.0 deg C @ 760.00m

Freezing/Melting Point:0 deg C

Decomposition Temperature:Not available.

Solubility: Slightly soluble.

Specific Gravity/Density:1.0100g/cm3

Molecular Formula:C7H5N

Molecular Weight:103.12

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: High temperatures, mechanical shock, incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong acids, strong bases, air.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide, cyanide fumes, nitrogen.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 100-47-0: DI2450000

LD50/LC50:

CAS# 100-47-0:

Draize test, rabbit, skin: 500 mg/24H Moderate;

Inhalation, mouse: LC50 = 1800 mg/m3;

Oral, mouse: LD50 = 971 mg/kg;

Oral, rabbit: LD50 = 800 mg/kg;

Skin, rabbit: LD50 = 1250 mg/kg;

Skin, rat: LD50 = 1200 mg/kg;

Carcinogenicity:

CAS# 100-47-0: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: Sex chromosome loss and nondisjunction; Yeast-Saccharomyces cerevisiae=1580 mg/L.

Neurotoxicity: No information available.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 78 mg/L; 96 Hr.; Hard WaterFish: Fathead Minnow: LC50 =135 mg/L; 96 Hr.; Soft WaterFish: Bluegill/Sunfish: LC50 =78 mg/L; 96 Hr.; Soft WaterFish: Goldfish: LC50 = 400 mg/L; 96 Hr.; Soft WaterBacteria: Phytobacterium phosphoreum: LC50 = 400 mg/L; 5,15,30 mg/L; Microtox test No data available.

Environmental: Biodegradation is expected to be a major environmental fate process for benzonitrile in soil. Estimated Koc values of 30-70 suggest that benzonitrile will leach readily in soil. Based upon an evaporation rate of 13 (butyl acetate standard of 100), benzonitrile will evaporate from dry surfaces.

Physical: Log P (oct) = 1.5 @ 20°C

Other: Based upon a measured log Kow of 1.56 and a water solubility of 2000 mg/l at 25 deg C, the BCF for benzonitrile can be estimated to be about 9 and 8, respectively, from recommended regression-derived equations which suggests that bioconcentration in aquatic organisms is not important environmentally.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	BENZONITRILE	No information available.
Hazard Class:	6.1	
UN Number:	UN2224	
Packing Group:	II	

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 100-47-0 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 100-47-0: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 100-47-0: immediate, delayed, fire.

Section 313

No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 100-47-0 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 100-47-0 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 21/22 Harmful in contact with skin and if swallowed.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

WGK (Water Danger/Protection)

CAS# 100-47-0: 2

Canada - DSL/NDSL

CAS# 100-47-0 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B3, D2B, D1B.

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

Canadian Ingredient Disclosure List

CAS# 100-47-0 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 4/30/1999

Revision #5 Date: 10/11/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.