

MATERIAL SAFETY DATA SHEET

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Version 1.6

Section 1 - Product and Company Information

Product Name 2,2'-AZOBISISOBUTYRONITRILE, 98%
Product Number 441090
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
2,2'-AZOBIS(2-METHYLPROPIONITRILE)	78-67-1	No

Formula C8H12N4
Synonyms Aceto AZIB * AIBN * Azobisisobutylonitrile *
Azobisisobutyronitrile *
alpha,alpha'-Azobisisobutylonitrile *
2,2'-Azobis(isobutyronitrile) *
2,2'-Azobis(2-methylpropionitrile) *
alpha,alpha'-Azodiisobutyronitrile *
2,2'-Azodiisobutyronitrile *
2,2'-Dicyano-2,2'-azopropane * Poly-Zole AZDN *
Porofor 57 * Porophor N * VAZO 64

RTECS Number: UG0800000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Explosive. Toxic (USA) Harmful (EU).
Risk of explosion by shock, friction, fire, or other sources of ignition. Highly flammable. Harmful by inhalation and if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Target organ(s): Liver. Kidneys.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 3

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 3

*additional chronic hazards present.

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

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

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 skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

EXPLOSION HAZARDS

May explode when heated. Container explosion may occur under fire conditions.

EXPLOSION DATA

Sensitivity to Mechanical Impact: May be shock-sensitive.

CONDITIONS OF FLAMMABILITY

Vigorously supports combustion.

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. 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): Flammable solid. Emits toxic fumes under fire conditions.

Specific Method(s) of Fire Fighting: Use water spray to cool fire-exposed containers.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame.

Unsuitable: Self-heating runaway reaction may occur above 40°
Store at 2-8°C

SPECIAL REQUIREMENTS

Store under inert gas. May develop pressure. Open carefully.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Use only in a chemical fume hood. Safety shower and eye bath. Use nonsparking tools.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N99 (US) or type P2 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Color: White Form: Fine crystals	
Property	Value	At Temperature or Pressure
Molecular Weight	164.21 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	102 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	

Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	< 2 %
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Conditions of Instability: May explode when heated.

Conditions to Avoid: Heat.

Materials to Avoid: Aldehydes, Strong oxidizing agents, Alcohols, Alkali metals, Heptane, Chemical contamination, Acetone.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Tetramethylsuccinonitrile, Hydrogen cyanide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: May cause eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. Harmful if inhaled.

Ingestion: Harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Nerves. Liver. Kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE

Unconsciousness. Drowsiness. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. Nausea, dizziness, and headache.

Exposure can cause:

TOXICITY DATA

Oral

Rat

100 mg/kg

LD50

Remarks: Behavioral:General anesthetic. Behavioral:Somnolence

(general depressed activity). Behavioral:Ataxia.

Intraperitoneal

Rat

25 MG/KG

LD50

Remarks: Behavioral:Ataxia. Behavioral:Somnolence (general depressed activity). Behavioral:General anesthetic.

Oral

Mouse

700 mg/kg

LD50

Intraperitoneal

Mouse

25 MG/KG

LD50

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Self-reactive solid type C

UN#: 3224

Class: 4.1

Packing Group: Packing Group II

Hazard Label: Flammable solid

PIH: Not PIH

IATA

Proper Shipping Name: SELF-REACTIVE SOLID TYPE C,
TEMPERATURE CONTROLLED

IATA UN Number: 3234

Hazard Class: 4.1

Not Allowed - Aircraft: Not permitted for air transport.

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: E-Xn

Indication of Danger: Explosive. Harmful.

R: 2-11-20/22-52/53

Risk Statements: Risk of explosion by shock, friction, fire, or other sources of ignition. Highly flammable. Harmful by inhalation and if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S: 39-41-47-61

Safety Statements: Wear eye/face protection. In case of fire and/or explosion do not breathe fumes. Keep at temperature not exceeding 40°C Avoid release to the environment. Refer to

special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Explosive. Toxic (USA) Harmful (EU).
Risk Statements: Risk of explosion by shock, friction, fire, or other sources of ignition. Highly flammable. Harmful by inhalation and if swallowed. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Safety Statements: Wear eye/face protection. In case of fire and/or explosion do not breathe fumes. Keep at temperature not exceeding 40°C Avoid release to the environment. Refer to special instructions/safety data sheets.
US Statements: Target organ(s): Liver. Kidneys.

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. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. 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 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.