

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,2'-Azobis(2-methylpropionitrile)

Product Number : 441090  
Brand : Aldrich

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

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052  
Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation  
Product Safety - Americas Region  
1-800-521-8956

### 2. HAZARDS IDENTIFICATION

#### Emergency Overview

#### OSHA Hazards

Flammable solid, Target Organ Effect, Toxic by ingestion

#### Target Organs

Nerves., Liver, Kidney

#### GHS Classification

Self reactive substances (Type C)  
Acute toxicity, Oral (Category 3)  
Acute toxicity, Inhalation (Category 4)  
Acute aquatic toxicity (Category 3)  
Chronic aquatic toxicity (Category 3)

#### GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H242 Heating may cause a fire.  
H301 Toxic if swallowed.  
H332 Harmful if inhaled.  
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P273 Avoid release to the environment.  
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

#### HMIS Classification

Health hazard: 2  
Chronic Health Hazard: \*  
Flammability: 3

Physical hazards: 3

**NFPA Rating**

Health hazard: 2

Fire: 3

Reactivity Hazard: 3

**Potential Health Effects**

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

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : AIBN  
Azobisisobutyronitrile  
 $\alpha,\alpha'$ -Azobisisobutyronitrile

Formula :  $C_8H_{12}N_4$   
Molecular Weight : 164.21 g/mol

Component	Concentration
<b>2,2'-Dimethyl-2,2'-azodipropionitrile</b>	
CAS-No.	78-67-1
EC-No.	201-132-3
Index-No.	608-019-00-1

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**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. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Flush eyes with water as a precaution.

**If swallowed**

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

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**5. FIREFIGHTING MEASURES**

**Conditions of flammability**

Not flammable or combustible.

**Suitable extinguishing media**

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

**Special protective equipment for firefighters**

Wear self contained breathing apparatus for fire fighting if necessary.

**Hazardous combustion products**

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

**Further information**

Use water spray to cool unopened containers.

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**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**

Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

**Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up**

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Keep in suitable, closed containers for disposal. Contain spillage, pick up with an electrically protected vacuum cleaner or by wet-brushing and transfer to a container for disposal according to local regulations (see section 13).

**7. HANDLING AND STORAGE****Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep away from sources of ignition - No smoking. Keep away from heat and sources of ignition.

**Conditions for safe storage**

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

Recommended storage temperature: 2 - 8 °C

Store under inert gas. Handle and open container with care. Air and light sensitive.

**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 particle respirator type N100 (US) or type P3 (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. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Hand protection**

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Eye protection**

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin and body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Hygiene measures**

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

**9. PHYSICAL AND CHEMICAL PROPERTIES****Appearance**

Form crystalline

Colour white

**Safety data**

pH no data available

Melting Melting point/range: 102 - 104 °C (216 - 219 °F) - dec.

point/freezing point	
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	no data available
Density	no data available
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

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## 10. STABILITY AND REACTIVITY

### Chemical stability

Stable under recommended storage conditions.

### Possibility of hazardous reactions

no data available

### Conditions to avoid

Heat, flames and sparks.

### Materials to avoid

Aldehydes, Strong oxidizing agents, Alcohols, Alkali metals, Heptane, Contamination, Acetone

### Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)  
Other decomposition products - no data available

### Thermal decomposition

Type C

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## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

#### Oral LD50

LD50 Oral - rat - 100 mg/kg

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

#### Inhalation LC50

LC50 Inhalation - rat - 1 h - > 7.780 mg/l

#### Dermal LD50

no data available

### Other information on acute toxicity

no data available

### Skin corrosion/irritation

no data available

**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

**Teratogenicity**

no data available

**Specific target organ toxicity - single exposure (Globally Harmonized System)**

no data available

**Specific target organ toxicity - repeated exposure (Globally Harmonized System)**

no data available

**Aspiration hazard**

no data available

**Potential health effects**

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

**Signs and Symptoms of Exposure**

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

**Synergistic effects**

no data available

**Additional Information**

RTECS: UG0800000

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**12. ECOLOGICAL INFORMATION****Toxicity**

no data available

**Persistence and degradability**

no data available

**Bioaccumulative potential**

no data available

**Mobility in soil**

no data available

**PBT and vPvB assessment**

no data available

**Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life with long lasting effects.

**13. DISPOSAL CONSIDERATIONS****Product**

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN number: 3224 Class: 4.1

Packing group: II

Proper shipping name: Self-reactive solid type C (Self-reactive solid, sample) (2,2'-Dimethyl-2,2'-azodipropionitrile)

Marine pollutant: No

Poison Inhalation Hazard: No

**IMDG**

UN number: 3234 Class: 4.1

EMS-No: F-F, S-K

Proper shipping name: SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED (2,2'-AZODI(ISOBUTYRONITRILE)) (2,2'-Dimethyl-2,2'-azodipropionitrile)

Marine pollutant: No

**IATA**

UN number: 3234 Class: 4.1

Proper shipping name: 2,2'-Azodi (Isobutyronitrile) (2,2'-Dimethyl-2,2'-azodipropionitrile)

IATA Passenger: Not permitted for transport

IATA Cargo: Not permitted for transport

**15. REGULATORY INFORMATION****OSHA Hazards**

Flammable solid, Target Organ Effect, Toxic by ingestion

**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**

2,2'-Dimethyl-2,2'-azodipropionitrile

CAS-No.  
78-67-1Revision Date  
1993-04-24**Pennsylvania Right To Know Components**

2,2'-Dimethyl-2,2'-azodipropionitrile

CAS-No.  
78-67-1Revision Date  
1993-04-24**New Jersey Right To Know Components**

CAS-No.

Revision Date

**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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