

## SAFETY DATA SHEET

Version 6.1  
Revision Date 05/28/2017  
Print Date 10/04/2019

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : 2,2'-Azobis(2-methylpropionitrile)  
Product Number : 441090  
Brand : Aldrich  
Index-No. : 608-019-00-1  
CAS-No. : 78-67-1

**1.2 Relevant identified uses of the substance or mixture and uses advised against**

Identified uses : Laboratory chemicals, Synthesis of substances

**1.3 Details of the supplier of the safety data sheet**

Company : Sigma-Aldrich Inc.  
3050 Spruce Street  
ST. LOUIS MO 63103  
UNITED STATES  
Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone number**

Emergency Phone # : +1-703-527-3887

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**2. HAZARDS IDENTIFICATION****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Self-reactive substances and mixtures (Type C), H242  
Acute toxicity, Oral (Category 4), H302  
Acute toxicity, Inhalation (Category 4), H332  
Acute aquatic toxicity (Category 3), H402  
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Danger

Hazard statement(s)

H242

Heating may cause a fire.

H302 + H332

Harmful if swallowed or if inhaled

H412

Harmful to aquatic life with long lasting effects.

Precautionary statement(s)	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220	Keep/Store away from clothing/ combustible materials.
P234	Keep only in original container.
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/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P411	Store at temperatures not exceeding .? °C/ .? °F.
P420	Store away from other materials.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Synonyms	: AIBN Azobisisobutyronitrile <I>α,α'</I>-Azoisobutyronitrile
Formula	: C<SB>8</SB>H<SB>12</SB>N<SB>4</SB>
Molecular weight	: 164.21 g/mol
CAS-No.	: 78-67-1
EC-No.	: 201-132-3
Index-No.	: 608-019-00-1

#### Hazardous components

Component	Classification	Concentration
<b>2,2'-Dimethyl-2,2'-azodipropionitrile</b>	Self-react. C; Acute Tox. 4; Aquatic Acute 3; Aquatic Chronic 3; H242, H302 + H332, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

## 4. FIRST AID MEASURES

### 4.1 Description of 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

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.

**4.2 Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**5. FIREFIGHTING MEASURES****5.1 Extinguishing media****Suitable extinguishing media**

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

**5.2 Special hazards arising from the substance or mixture**

Carbon oxides, Nitrogen oxides (NOx)

**5.3 Advice for firefighters**

Wear self-contained breathing apparatus for firefighting if necessary.

**5.4 Further information**

Use water spray to cool unopened containers.

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**6.2 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.

**6.3 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).

**6.4 Reference to other sections**

For disposal see section 13.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combu formation should be taken into consideration before additional processing 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. For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in original container. 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.

**7.3 Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1 Control parameters

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters

### 8.2 Exposure controls

#### Appropriate engineering controls

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

#### Personal protective equipment

##### Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

##### Skin 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industria situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

##### 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.

##### Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use (EN 143) respirator cartridges as a backup to engineering controls. If th full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

##### Control of environmental exposure

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

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

- |                                 |                                                         |
|---------------------------------|---------------------------------------------------------|
| a) Appearance                   | Form: crystalline<br>Colour: white                      |
| b) Odour                        | none                                                    |
| c) Odour Threshold              | No data available                                       |
| d) pH                           | No data available                                       |
| e) Melting point/freezing point | Melting point/range: 102 - 104 °C (216 - 219 °F) - dec. |

- |                                                 |                                                |
|-------------------------------------------------|------------------------------------------------|
| f) Initial boiling point and boiling range      | ( )Decomposes below the boiling point.         |
| g) Flash point                                  | ( )No data available                           |
| h) Evaporation rate                             | No data available                              |
| i) Flammability (solid, gas)                    | No data available                              |
| j) Upper/lower flammability or explosive limits | No data available                              |
| k) Vapour pressure                              | 0.01 hPa at 25 °C (77 °F)                      |
| l) Vapour density                               | No data available                              |
| m) Relative density                             | 1.11 g/cm <sup>3</sup>                         |
| n) Water solubility                             | 350 g/l at 25 °C (77 °F)                       |
| o) Partition coefficient: n-octanol/water       | log Pow: 1.1 at 25 °C (77 °F)                  |
| p) Auto-ignition temperature                    | No data available                              |
| q) Decomposition temperature                    | Type C                                         |
| r) Viscosity                                    | No data available                              |
| s) Explosive properties                         | Risk of explosion if heated under confinement. |
| t) Oxidizing properties                         | No data available                              |

## 9.2 Other safety information

No data available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

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

### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available 2,2'-Dimethyl-2,2'-azodipropionitrile

LC50 Inhalation - Rat - 1 h - > 7.780 mg/l(2,2'-Dimethyl-2,2'-azodipropionitrile)

Dermal: No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Skin corrosion/irritation**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Serious eye damage/eye irritation**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Respiratory or skin sensitisation**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Germ cell mutagenicity**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**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.

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(2,2'-Dimethyl-2,2'-azodipropionitrile)

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Specific target organ toxicity - single exposure**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**Additional Information**

RTECS: UG0800000

Nausea, Dizziness, Headache, Drowsiness, Unconsciousness, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(2,2'-Dimethyl-2,2'-azodipropionitrile)

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence(2,2'-Dimethyl-2,2'-azodipropionitrile)

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

No data available

**12.2 Persistence and degradability**

No data available

**12.3 Bioaccumulative potential**

No data available

**12.4 Mobility in soil**

No data available(2,2'-Dimethyl-2,2'-azodipropionitrile)

**12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**12.6 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.

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

Harmful to aquatic life with long lasting effects.

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## 13. DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product

Burn in a chemical incinerator equipped with an afterburner and scrubber b 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.

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## 14. TRANSPORT INFORMATION

### DOT (US)

UN number: 3224      Class: 4.1      Packing group: II  
Proper shipping name: Self-reactive solid type C (2,2'-AZODI(ISOBUTYRONITRILE))  
Poison Inhalation Hazard: No  
CA9503005

### 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))  
BAM/16/02

### IATA

UN number: 3234      Class: 4.1  
Proper shipping name: Self-reactive solid type C, temperature controlled (2,2'-Azodi (Isobutyronitrile))  
IATA Passenger: Not permitted for transport  
IATA Cargo: Not permitted for transport

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## 15. REGULATORY INFORMATION

### SARA 302 Components

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

### SARA 313 Components

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
2,2'-AZODI(ISOBUTYRONITRILE)	78-67-1	

### Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2'-AZODI(ISOBUTYRONITRILE)	78-67-1	

### New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2'-AZODI(ISOBUTYRONITRILE)	78-67-1	

### 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

### Full text of H-Statements referred to under sections 2 and 3.

H242	Heating may cause a fire.
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled
H332	Harmful if inhaled.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

### HMIS Rating

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

### NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	3

### Further information

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### Preparation Information

Sigma-Aldrich Corporation  
Product Safety – Americas Region  
1-800-521-8956  
Version: 6.1

Revision Date: 05/28/2017

Print Date: 10/04/2019