

## Material Safety Data Sheet

Date Printed: 23/AUG/2005  
Date Updated: 08/FEB/2005  
Version 1.4  
According to 91/155/EEC

Classified as Hazardous according to the criteria of EU Annex 1 and NOHSC.

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#### 1 - Product and Company Information

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|                   |  |
|-------------------|--|
| Product Name      | 2,2'-AZOBISISOBUTYRONITRILE, 98%   |
| Product Number    | 441090   |
| Company           | Sigma-Aldrich Pty. Ltd.<br>12 Anella Avenue<br>Castle Hill NSW 2154<br>Australia |
| Technical Phone # | +61 2 9841 0555 (1800 800 097)   |
| Fax               | +61 2 9841 0500 (1800 800 096)   |
| Emergency Phone # | +44 8701906777 (1800 448 465)  |

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#### 2 - Composition/Information on Ingredients

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|                                    |  |           |                         |
|------------------------------------|--|-----------|-------------------------|
| Product Name                       | CAS #  | EC no     | Annex I<br>Index Number |
| 2,2'-AZOBIS(2-METHYLPROPIONITRILE) | 78-67-1  | 201-132-3 | 608-019-00-1            |
| Formula                            | C8H12N4  |           |                         |
| Molecular Weight                   | 164.21 AMU   |           |                         |
| Synonyms                           | Aceto AZIB * AIBN * Azobisisobutylonitrile *<br>Azobisisobutylonitrile *<br>alpha,alpha'-Azobisisobutylonitrile *<br>2,2'-Azobis(isobutyronitrile) *<br>2,2'-Azobis(2-methylpropionitrile) *<br>alpha,alpha'-Azodiisobutylonitrile *<br>2,2'-Azodiisobutylonitrile *<br>2,2'-Dicyano-2,2'-azopropane * Poly-Zole AZDN *<br>Porofor 57 * Porophor N * VAZO 64 |           |                         |

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#### 3 - Hazards Identification

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##### SPECIAL INDICATION OF HAZARDS TO HUMANS AND THE ENVIRONMENT

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.

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#### 4 - First Aid Measures

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##### AFTER INHALATION

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

##### AFTER SKIN CONTACT

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

#### AFTER EYE CONTACT

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.

#### AFTER INGESTION

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

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### 5 - Fire Fighting Measures

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#### EXPLOSION DATA

Sensitivity to Mechanical Impact: May be shock-sensitive.

#### CONDITIONS OF FLAMMABILITY

Vigorously supports combustion.

#### EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

#### SPECIAL RISKS

Specific Hazard(s): Flammable solid. Emits toxic fumes under fire conditions.

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

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

#### SPECIFIC METHOD(S) OF FIRE FIGHTING

Use water spray to cool fire-exposed containers.

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### 6 - Accidental Release Measures

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#### PERSONAL PRECAUTION PROCEDURES 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.

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### 7 - Handling and Storage

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#### HANDLING

Directions for Safe Handling: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

#### STORAGE

Conditions of Storage: 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.

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## 8 - Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

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

### GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

### PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: Government approved respirator.

Hand Protection: Compatible chemical-resistant gloves.

Eye Protection: Chemical safety goggles.

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## 9 - Physical and Chemical Properties

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| Appearance            | Color: White<br>Form: Fine crystals | At Temperature or Pressure |
|-----------------------|-------------------------------------|----------------------------|
| Property              | Value                               |                            |
| pH                    | N/A                                 |                            |
| BP/BP Range           | N/A                                 |                            |
| MP/MP Range           | 102 °C                              |                            |
| Flash Point           | N/A                                 |                            |
| Flammability          | N/A                                 |                            |
| Autoignition Temp     | N/A                                 |                            |
| Oxidizing Properties  | N/A                                 |                            |
| Explosive Properties  | N/A                                 |                            |
| Explosion Limits      | N/A                                 |                            |
| Vapor Pressure        | N/A                                 |                            |
| SG/Density            | N/A                                 |                            |
| Partition Coefficient | N/A                                 |                            |
| Viscosity             | N/A                                 |                            |
| Vapor Density         | N/A                                 |                            |
| Saturated Vapor Conc. | N/A                                 |                            |
| Evaporation Rate      | N/A                                 |                            |
| Bulk Density          | N/A                                 |                            |
| Decomposition Temp.   | N/A                                 |                            |
| Solvent Content       | N/A                                 |                            |
| Water Content         | < 2 %                               |                            |
| Surface Tension       | N/A                                 |                            |
| Conductivity          | N/A                                 |                            |
| Miscellaneous Data    | N/A                                 |                            |
| Solubility            | N/A                                 |                            |

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## 10 - Stability and Reactivity

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### 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

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## 11 - Toxicological Information

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RTECS NUMBER: UG0800000

### ACUTE TOXICITY

LD50

Oral

Rat

100 mg/kg

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

LD50

Intraperitoneal

Rat

25 MG/KG

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

LD50

Oral

Mouse

700 mg/kg

LD50

Intraperitoneal

Mouse

25 MG/KG

### SIGNS AND SYMPTOMS OF EXPOSURE

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

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

Ingestion: Harmful if swallowed.

### TARGET ORGAN INFORMATION

Nerves. Liver. Kidneys.

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## 12 - Ecological Information

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No data available.

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## 13 - Disposal Considerations

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### SUBSTANCE DISPOSAL

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

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## 14 - Transport Information

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**RID/ADR**

UN#: 3234

Class: 4.1

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

**IMDG**

UN#: 3234

Class: 4.1

PG: II

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

Marine Pollutant: No

Severe Marine Pollutant: No

Technical Name: Required

**IATA**

UN#: 3234

Class: 4.1

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

Inhalation Packing Group I: No

Technical Name: Required

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**15 - Regulatory Information****CLASSIFICATION AND LABELING ACCORDING TO EU DIRECTIVES**

ANNEX I INDEX NUMBER: 608-019-00-1

INDICATION OF DANGER: E Xn

Explosive. Harmful.

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

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-PHRASES: 39 41 47 61

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.

**SWITZERLAND**

SWISS POISON CLASS: 1

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**16 - Other Information****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 2005 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

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