

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : 2,2'-Azobis(2-methylpropionamidine) dihydrochloride

Product Number : 440914
Brand : Aldrich

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

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2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable solid, Toxic by ingestion, Skin sensitiser

GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H242 : Heating may cause a fire.
H302 : Harmful if swallowed.
H316 : Causes mild skin irritation.
H317 : May cause an allergic skin reaction.
H401 : Toxic to aquatic life.

Precautionary statement(s)

P280 : Wear protective gloves.

HMIS Classification

Health hazard: 2
Flammability: 0
Physical hazards: 3

NFPA Rating

Health hazard: 2
Fire: 0
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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : α,α' -Azodiisobutyramidinedihydrochloride

AAPH

Formula : $C_8H_{18}N_6 \cdot 2HCl$
Molecular Weight : 271.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
2,2'-Azobis[2-methylpropionamide] dihydrochloride			
2997-92-4	221-070-0	-	-

4. 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

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

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

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

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

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Conditions for safe storage

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

Store under inert gas. Moisture sensitive. Heat 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 dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	granular
Colour	light yellow

Safety data

pH	no data available
Melting point	175 - 177 °C (347 - 351 °F) - lit.
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Water solubility	slightly soluble

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Conditions to avoid

Keep away from direct sunlight. Heat.

Materials to avoid

Strong oxidizing agents, Strong acids

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NO_x), Hydrogen chloride gas

Thermal decomposition

65 °C - Type D

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 410 mg/kg

LD50 Dermal - rat - > 5,900 mg/kg

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation

Serious eye damage/eye irritation

no data available

Respiratory or skin sensitization

May cause allergic skin reaction.

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

Specific target organ toxicity - single exposure (GHS)

no data available

Specific target organ toxicity - repeated exposure (GHS)

no data available

Aspiration hazard

no data available

Potential health effects

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

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional Information

12. ECOLOGICAL INFORMATION**Toxicity**

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - > 100 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 4.84 mg/l - 48 h

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

no data available

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. Observe all federal, state, and local environmental regulations. 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: 3226 Class: 4.1

Packing group: II

Proper shipping name: Self-reactive solid type D(2,2'-AZOBIS(2-AMIDINOPROPANE)-DIHYDROCHLORIDE) (2,2'-Azobis[2-methylpropionamidine] dihydrochloride)

Marine pollutant: No

Poison Inhalation Hazard: No

IMDG

UN-Number: 3226 Class: 4.1

EMS-No: F-J, S-G

Proper shipping name: SELF-REACTIVE SOLID TYPE D(2,2'-AZOBIS(2-AMIDINOPROPANE)-DIHYDROCHLORIDE) (2,2'-Azobis[2-methylpropionamidine] dihydrochloride)

Marine pollutant: No

IATA

UN-Number: 3226 Class: 4.1 (HEAT)

Proper shipping name: Self-reactive solid type D(2,2'-AZOBIS(2-AMIDINOPROPANE)-DIHYDROCHLORIDE) (2,2'-Azobis[2-methylpropionamidine] dihydrochloride)

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable solid, Toxic by ingestion, Skin sensitiser

DSL Status

All components of this product are on the Canadian DSL list.

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

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

2,2'-Azobis[2-methylpropionamidine] dihydrochloride

CAS-No.
2997-92-4

Revision Date

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.

16. OTHER INFORMATION

Further information

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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 Co., 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.
