

1 Identification

Product identifier

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

Stock number: 36307

CAS Number:

78-67-1

EC number:

201-132-3

Index number:

608-019-00-1

Relevant identified uses of the substance or mixture and uses advised against.

Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet

Manufacturer/Supplier:

Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency telephone number:

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS01 Exploding bomb

Unst. Expl. H200 Unstable explosives.



GHS02 Flame

Flam. Sol. 1 H228 Flammable solid.

Self-react. CD. H242 Heating may cause a fire.



GHS07

Acute Tox. 4 H302 Harmful if swallowed.

Acute Tox. 4 H332 Harmful if inhaled.

Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



GHS01 GHS02 GHS07

Signal word

Danger

Hazard statements

H200 Unstable explosives.

H228 Flammable solid.

H242 Heating may cause a fire.

H302+H332 Harmful if swallowed or if inhaled.

Precautionary statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P373 DO NOT fight fire when fire reaches explosives.

P380 Evacuate area.

P401 Store in accordance with local/regional/national/international regulations.

P411 Store at temperatures not exceeding 113°F.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification

B4 - Flammable solid

F - Dangerously reactive material



Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH 3 Health (acute effects) = 3

FIRE 3 Flammability = 3

REACTIVITY 3 Physical Hazard = 3

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

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

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3 Composition/information on ingredients

Chemical characterization: Substances

CAS# Description:

78-67-1 2,2'-Azobis(2-methylpropionitrile)

Identification number(s):

EC number: 201-132-3

Index number: 608-019-00-1

4 First-aid measures

Description of first aid measures

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek medical treatment.

Information for doctor

Most important symptoms and effects, both acute and delayed No further relevant information available.

Indication of any immediate medical attention and special treatment needed No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents Water spray

Special hazards arising from the substance or mixture

During heating or in case of fire poisonous gases are produced.

If this product is involved in a fire, the following can be released:

Advice for firefighters

Protective equipment:

Do not inhale explosion gases or combustion gases.

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Mount respiratory protective device.

Remove persons from danger area.

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Environmental precautions: Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Keep away from ignition sources.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards: Keep away from ignition sources.

Reference to other sections

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Keep away from heat and direct sunlight.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires:

Protect against electrostatic charges.

Prevent impact and friction.

Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles:

Unsuitable material for containers: metals and alloys.

Unsuitable material for container: ceramic, glass

Store in a cool location.

Information about storage in one common storage facility: Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Protect from heat and direct sunlight.

Maximum storage temperature: 15°C

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

Exposure controls

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

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USA

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

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Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Maintain an ergonomically appropriate working environment.
Breathing equipment: Use suitable respirator when high concentrations are present.
Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.
Penetration time of glove material (in minutes) Not determined
Eye protection: Safety glasses
Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

Form: Powder
Color: White
Odor: Not determined
Odor threshold: Not determined.

pH-value: Not applicable.

Change in condition

Melting point/Melting range: 107 °C (225 °F)
Boiling point/Boiling range: Not determined
Sublimation temperature / start: Not determined

Flash point: Not applicable
Flammability (solid, gaseous) Highly flammable.
Ignition temperature: Not determined
Decomposition temperature: 40°C
Auto igniting: Not determined.

Danger of explosion: Risk of explosion by shock, friction, fire or other sources of ignition.

Explosion limits:

Lower: Not determined
Upper: Not determined
Vapor pressure: Not applicable.
Density at 20 °C (68 °F): 1.13 g/cm³ (9.43 lbs/gal)
Relative density Not determined.
Vapor density Not applicable.
Evaporation rate Not applicable.
Solubility in / Miscibility with
Water: Not determined
Partition coefficient (n-octanol/water): Not determined.
Viscosity:
dynamic: Not applicable.
kinematic: Not applicable.
Other information No further relevant information available.

10 Stability and reactivity

Reactivity Unstable explosives.
Chemical stability Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided: Exothermic thermal decomposition
Decomposition will begin at: 40°C
Possibility of hazardous reactions
Danger of explosion
Danger of bursting
Conditions to avoid No further relevant information available.
Incompatible materials:
Oxidizing agents
Alkali metals
Alcohols
Hazardous decomposition products:
Nitrogen oxides
Carbon monoxide and carbon dioxide
Danger of toxic pyrolysis products

11 Toxicological information

Information on toxicological effects

Acute toxicity:
Harmful if inhaled.
Harmful if swallowed.

LD/LC50 values that are relevant for classification:

Oral LD50 700 mg/kg (mouse)

Skin irritation or corrosion: Irritant to skin and mucous membranes.

Eye irritation or corrosion: Irritating effect.

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: No effects known.

Carcinogenicity: No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity: No effects known.

Specific target organ system toxicity - repeated exposure: No effects known.

Specific target organ system toxicity - single exposure: No effects known.

Aspiration hazard: No effects known.






Subacute to chronic toxicity: No effects known.

Subacute to chronic toxicity:

2,2'-Azobis(2-methylpropionitrile) is irritating to skin, eyes and the respiratory tract. Exposure may also cause nausea, dizziness, headache and central nervous

system depression. Decomposition results in toxic tetramethylsuccinonitrile.

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USA

Product name: 2,2'-Azobis(2-methylpropionitrile)	
Additional toxicological information: To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.	
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12 Ecological information	
<p>Toxicity Aquatic toxicity: No further relevant information available. Persistence and degradability No further relevant information available. Bioaccumulative potential No further relevant information available. Mobility in soil No further relevant information available. Ecotoxicological effects: Remark: Harmful to aquatic organisms Additional ecological information: General notes: Do not allow product to reach ground water, water course or sewage system. Do not allow material to be released to the environment without proper governmental permits. Danger to drinking water if even small quantities leak into the ground. May cause long lasting harmful effects to aquatic life. Avoid transfer into the environment. Harmful to aquatic organisms Results of PBT and vPvB assessment PBT: Not applicable. vPvB: Not applicable. Other adverse effects No further relevant information available.</p>	
13 Disposal considerations	
<p>Waste treatment methods Recommendation Consult state, local or national regulations to ensure proper disposal. Uncleaned packagings: Recommendation: Disposal must be made according to official regulations.</p>	
14 Transport information	
UN-Number DOT, IMDG, IATA	UN3234
UN proper shipping name DOT	Self-reactive solid type C, temperature controlled (2,2'-Azobis(2-methylpropionitrile))
IMDG, IATA	SELF-REACTIVE SOLID TYPE C, TEMPERATURE CONTROLLED (2,2'-Azobis(2-methylpropionitrile))
Transport hazard class(es) DOT	
	
Class Label Class	4.1 Flammable solids, self-reactive substances and solid desensitised explosives. 4.1 4.1 (SR2) Flammable solids, self-reactive substances and solid desensitised explosives
Label IMDG	4.1
	
Class Label IATA Class	4.1 Flammable solids, self-reactive substances and solid desensitised explosives. 4.1 4.1 Flammable solids, self-reactive substances and solid desensitised explosives.
Packing group DOT	II
Environmental hazards:	Not applicable.
Special precautions for user	Warning: Flammable solids, self-reactive substances and solid desensitised explosives
EMS Number:	F-F,S-K
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
Transport/Additional information:	
DOT Marine Pollutant (DOT): Remarks:	No letter of approval for quantities of 100g.
UN "Model Regulation":	UN3234, Self-reactive solid type C, temperature controlled (2,2'-Azobis(2-methylpropionitrile)), 4.1
15 Regulatory information	
<p>Safety, health and environmental regulations/legislation specific for the substance or mixture GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS) Hazard pictograms</p>	
  	
GHS01 GHS02 GHS07	
<p>Signal word Danger Hazard statements H200 Unstable explosives. H228 Flammable solid.</p>	
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Product name: 2,2'-Azobis(2-methylpropionitrile)

H242 Heating may cause a fire.
H302+H332 Harmful if swallowed or if inhaled.
Precautionary statements
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P373 DO NOT fight fire when fire reaches explosives.
P380 Evacuate area.
P401 Store in accordance with local/regional/national/international regulations.
P411 Store at temperatures not exceeding 113°F.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
SARA Section 313 (specific toxic chemical listings) Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

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16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.
Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/23/2015 / -
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)