

α, α' -Azobis(isobutyronitrile),
JUNSEI CHEMICAL CO., LTD., 11325jis_J_E1-3, 05/02/2021

Date of issue for the 1st edition : 29/10/2013

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Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: α, α' -Azobis(isobutyronitrile)

Reference number(SDS): 11325jis_J_E1-3

Product type:

Reagent

Details of the supplier of the safety data sheet

Manufacturer/Supplier: JUNSEI CHEMICAL CO., LTD.

Address: 1-6, Ohmano-cho, Koshigaya-shi, Saitama 343-0844, Japan

Division: Quality Assurance Department

Telephone number: +81-48-986-6161

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e-mail address: shiyaku-t@junsei.co.jp

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Self-reactive substances and mixtures: Type C

HEALTH HAZARDS

Acute toxicity (Oral): Category 3

Specific target organ toxicity – single exposure: Category 1 (central nervous system)

Specific target organ toxicity – single exposure: Category 3 (Narcosis)

Specific target organ toxicity – repeated exposure: Category 2 (liver)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements



Signal word: Danger

HAZARD STATEMENT

H242-Heating may cause a fire

H301-Toxic if swallowed

H370-Causes damage to organs after single exposure

H336-May cause drowsiness or dizziness

H373-May cause damage to organs through prolonged or repeated exposure

PRECAUTIONARY STATEMENT

Prevention

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

Keep only in original container.

Keep cool.

Ground/bond container and receiving equipment.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves/protective clothing/eye protection/face protection.

Do not eat, drink or smoke when using this product.

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Response

In case of fire: Use appropriate media other for extinction.
Get medical advice/attention if you feel unwell.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF exposed or concerned: Call a POISON CENTER or doctor/physician.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF SWALLOWED: Rinse mouth .Immediately call a POISON CENTER or doctor/physician.

Storage

Store in a well-ventilated place. Keep container tightly closed.
Store locked up.
Store at temperatures not exceeding specified values(10°C).
Store away from other materials.

Disposal

Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards

Burn explosively by shock or heating.

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Common name, synonyms: 2,2'-Azobis(2-methylpropionitrile); AIBN

Ingredient name: α , α' -Azobis(isobutyronitrile)

Content (%):98.0 <

Chemical formula:C₈H₁₂N₄

Chemicals No, Japan:2-1531

CAS No.:78-67-1

MW:164.21

ECNO:201-132-3

4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical attention/advice if you feel unwell.
Call a POISON CENTER or doctor/physician if you feel unwell.
IF exposed or concerned: Call a POISON CENTER or doctor/physician.
Keep victim warm and quiet.
Call emergency medical service.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Give artificial respiration if victim is not breathing.
Administer oxygen if breathing is difficult.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation or rash occurs: Get medical advice/attention.
Remove and isolate contaminated clothing and shoes.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

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Induce vomiting (ONLY IN CONSCIOUS PERSONS!).

Give a slurry of activated charcoal in water to drink.

Immediately call a POISON CENTER or doctor/physician.

Call a POISON CENTER or doctor/physician if you feel unwell.

Most important symptoms and effects, both acute and delayed

(Symptoms when inhalation or ingestion)

Headache. Nausea. Weakness. Convulsions.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

In case of fire, use water in large amounts to extinguish.

Unsuitable extinguishing media

Unsuitable extinguishing media data is not available.

Specific hazards arising from the substance or mixture

Containers may explode when heated.

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

Advice for firefighters

Specific fire-fighting measures

Evacuate non-essential personnel to safe area.

Cool container with water spray.

Special protective equipment and precautions for fire-fighters

Wear fire/flame resistant/retardant clothing.

Wear protective gloves/protective clothing/eye protection/face protection.

Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Do not touch or walk through spilled material.

Environmental precautions

Avoid release to headsprings, rivers, lakes, ocean and groundwater.

Methods and materials for containment and cleaning up

DO NOT CLEAN-UP OR DISPOSE OF, EXCEPT UNDER SUPERVISION OF A SPECIALIST.

Take up with inert, damp, noncombustible material using clean non-sparking tools and place into loosely covered plastic containers for later disposal.

If appropriate, moisten first to prevent dusting.

Preventive measures for secondary accident

Collect spillage.

Stop leak if you can do it without risk.

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Prevent entry into waterways, sewers, basements or confined areas.

DO NOT allow the substance to warm up. Obtain liquid nitrogen, dry ice or ice for cooling.

If none can be obtained, evacuate the area immediately.

Keep out of low areas.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

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

Ground/bond container and receiving equipment.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves/protective clothing/eye protection/face protection.

Wear protective gloves, protective clothing or face protection.

Use personal protective equipment as required.

When using do not eat, drink or smoke.

May be ignited by heat, sparks or flames.

Any incompatibilities

Oxidizing agents, Alcohols, Ketones such as acetone, Aldehydes, Hydrocarbons such as heptane should not be mixed with the chemicals.

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Storage

Conditions for safe storage

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

Keep cool. Protect from sunlight.

Store locked up.

Store at temperatures not exceeding specified values (10°C).

(Incompatible storage condition)

Store away from other materials.

Container and packaging materials for safe handling

Keep only in original container.

Specific end use(s)

See information in Section 7.1 and 7.2 for handling and storage recommendations. See Section 8 for exposure controls and personal protection recommendations.

8. Exposure controls/personal protection

Control parameters

Control value in MHLW is not available.

Adopted value

Adopted value in JSOH is not available.

Adopted value in ACGIH is not available.

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

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Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Consult with your glove and/or personnel equipment manufacturer for selection of appropriate compatible materials.

Eye protection

Wear safety glasses with side-shields.

Wear eye/face protection.

Skin and body protection

Wear impervious clothing and boots in case of repeated or prolonged treatment.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Powder

Color: White

Odor: None

Odor threshold data is not available.

Melting point/Freezing point: 105°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids): Ignitable

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature: 64°C

Decomposition temperature: 107°C

Self-Accelerating Decomposition Temperature/SADT: 50°C

pH data is not available.

Dynamic viscosity data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 350mg/L(25°C)

Solubility in solvent: Soluble in many organic solvents.

n-Octanol/water partition coefficient: log Pow1.1

Vapor pressure: <1 Pa (20°C)

Vapor density data is not available.

VOC data is not available.

Evaporation rate data is not available.

Density and/or relative density: 1.11g/cm³(20°C)

Relative vapor density (Air=1) data is not available.

Relative density of the Vapor/air – mixture at 20°C (Air = 1) data is not available.

Critical temperature data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Reactivity data is not available.

Chemical stability

Stable under normal storage/handling conditions.

Highly flammable.

Explosive.

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Possibility of hazardous reactions

- If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.
- Decomposes on warming. This produces toxic fumes.
- May decompose explosively on shock, friction or concussion.
- May explode on heating. Reacts violently with alcohols, oxidants, ketones such as acetone, aldehydes and hydrocarbons such as heptane. This generates fire and explosion hazard.

Conditions to avoid

- Contact with incompatible materials.
- Open flames. Heat. Sparks. Shock. Friction. Concussion. Light.

Incompatible materials

- Oxidizing agents, Strong oxidizing agents, Alcohols, Ketones such as acetone, Aldehydes, Hydrocarbons such as heptane.

Hazardous decomposition products

- Carbon oxides, Nitrogen oxides, Tetramethylsuccinonitrile. Cyanide.

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

- [GHS Cat. Japan, base data]
- rat LD50=100mg/kg (SIDS, 2002)

Acute toxicity (Dermal)

- [GHS Cat. Japan, base data]
- rabbit LD50 >5010 mg/kg (NITE risk primary assessment, 2007)

Acute toxicity (Inhalation)

- [GHS Cat. Japan, base data]
- mist : rat LC50 >12 mg/L/4hr (NITE risk primary assessment, 2007 et al.)

Irritant properties

Skin corrosion/irritation

- [GHS Cat. Japan, base data]
- rabbit(OECD TG 404) : No irritating (SIDS, 2002; NITE risk primary assessment, 2007)

Serious eye damage/irritation

- [GHS Cat. Japan, base data]
- rabbit(OECD TG 405) : No irritating (SIDS, 2002; NITE risk primary assessment, 2007)

Sensitization

Skin sensitization

- [GHS Cat. Japan, base data]
- guinea pig(OECD TG 406) : No sensitizing(SIDS, 2002; NITE risk primary assessment, 2007)

Germ cell mutagenicity

- [GHS Cat. Japan, base data]
- no in vivo data,
- Reverse-mutation assay in bacteria (Ames test) :Negative(NITE risk primary assessment, 2007 et al.)
- Chromosome aberration test :Negative(NITE risk primary assessment, 2007 et al.)

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

STOT

STOT-single exposure

[cat.1]

- [GHS Cat. Japan, base data]
- CNS (NITE primary risk assessment, 2007)

[cat.3 (drow./dizz.)]

- [GHS Cat. Japan, base data]
- narcotic effect (NITE primary risk assessment, 2007)

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STOT-repeated exposure

[cat.2]

[GHS Cat. Japan, base data]

liver (JECDB, Access on November 2015)

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

Algae (*Pseudokirchneriella subcapitata*) ErC50 >7.8mg/L/72hr

(Environmental Risk Assessment for Chemical Substances by MOE vol. 11, 2013)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

Crustacea (*Daphnia magna*) NOEC=2.2mg/L/21days

(Environmental Risk Assessment for Chemical Substances by MOE vol. 11, 2013)

Water solubility

350mg/L(25°C) (SIDS, 2002)

Persistence and degradability

Not degrade rapidly [BOD_Degradation : 0%/28 days (MITI official bulletin)]

Bioaccumulative potential

log Pow=1.1 (PHYSPROP DB, 2005)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No., UN CLASS

UN No. or ID No.: 3234

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

Class or division (Transport hazard class) : 4.1

Packing group : Not applicable

ERG GUIDE No.: 150

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 3234

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

Class or division : 4.1

IATA Dangerous Goods Regulations

UN No.: 3234

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

Class or division : 4.1

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Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

Maritime transport in bulk according to IMO instruments

Not applicable to Maritime transport in bulk according to IMO instruments

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

Chemicals listed in TSCA Inventory

α, α' -Azobis(isobutyronitrile)

Other regulatory information

We are not able to check up the regulatory information with regard to the substances in your country or region, therefore, we request this matter would be filled by your responsibility. Regulatory information with regard to this substance in your country or in your region should be examined by your own responsibility.

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Regulatory information in this section are limited to intentional ingredient(s), but does not contain information on non-intentional ingredients or impurities which are not informed by supplier(s).

Chemical safety assessment

Advice on safe handling for this product can be found in sections 7 and 8 of this SDS.

16. Other information

GHS classification and labelling

H242–Self-react. C: H242 Heating may cause a fire

H301–Acute Tox. 3: H301 Toxic if swallowed

H370–STOT SE 1: H370 Causes damage to organs after single exposure

H336–STOT SE 3: H336 May cause drowsiness or dizziness

H373–STOT RE 2: H373 May cause damage to organs through prolonged or repeated exposure

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (7th revised edition, 2017), UN Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN

IMDG Code, 2018 Edition (Incorporating Amendment 39–18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

JIS Z 7252 : 2019

JIS Z 7253 : 2019

2019 Recommendation on TLVs (JISOH)

Supplier's data/information

Chemicals safety data management system "GHS Assistant" Version 4.10 (<https://www.asahi-ghs.com/>)

NITE Chemical Risk Information Platform "NITE-CHRIP"

(https://www.nite.go.jp/en/chem/chrip/chrip_search/systemTop)

GHS Classification Guidance for Enterprises 2019 Revised Edition (Ver. 2.0) (Mar. 2020, METI)

Definitions and Abbreviations

SDS (Safety Data Sheet)

LD50 (Lethal Dose, 50%)

LC50 (Lethal Concentration, 50%)

IARC (International Agency for Research on Cancer)

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ACGIH (American Conference of Governmental Industrial Hygienists)

EPA (US Environmental Protection Agency)

NTP (US National Toxicology Program)

JSOH (Japan Society for Occupational Health)

EU (European Union)

EC50 (Effective Concentration, 50%)

NOEC (No Observed Effect Concentration)

BOD (Biochemical Oxygen Demand)

COD (Chemical Oxygen Demand)

BCF (Bioconcentration Factor)

anh (anhydride)

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2019).