SAFETY DATA SHEETS

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Sixth revised edition

Version: 1.0

Creation Date: Aug 12, 2017

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1.Identification

1.1GHS Product identifier

Product name	Azodicarbonamide

1.2Other means of identification

Product number	-
Other names	Carbamoyliminourea

1.3Recommended use of the chemical and restrictions on use

Identified uses	For industry use only. Food Additives: FLOUR_TREATMENT_AGENT
Uses advised against	no data available

2.Hazard identification

2.1Classification of the substance or mixture

Respiratory sensitization, Category 1

2.2GHS label elements, including precautionary statements

Pictogram(s)	
Signal word	Danger
Hazard statement(s)	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)	
Prevention	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P284 [In case of inadequate ventilation] wear respiratory protection.
Response	P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor/...
Storage	none
Disposal	P501 Dispose of contents/container to ...

2.3Other hazards which do not result in classification

none

3.Composition/information on ingredients

3.1Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Azodicarbonamide	Azodicarbonamide	123-77-3	none	100%

4.First-aid measures

4.1Description of necessary first-aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

Fresh air, rest. Refer for medical attention.

In case of skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

In case of eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

If swallowed

Rinse mouth. Give one or two glasses of water to drink. Rest.

4.2Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 149 [Substances (Self-Reactive)]: Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death. May produce irritating, toxic and/or corrosive gases. Runoff from fire control may cause pollution. (ERG, 2016)

4.3Indication of immediate medical attention and special treatment needed, if necessary

After inhalation exposure, first aid treatment includes: Fresh air, rest. Refer for medical attention. After skin exposure: Remove contaminated clothes. Rinse and then wash skin with water and soap. After eye exposure: Rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor. After ingestion: Rinse mouth. Give plenty of water to drink. Rest. /from table/

5.Fire-fighting measures

5.1Extinguishing media

Suitable extinguishing media

Use foam or powder. /from table/

5.2Specific hazards arising from the chemical

Excerpt from ERG Guide 149 [Substances (Self-Reactive)]: Self-decomposition, self-polymerization, or self-ignition may be triggered by heat, chemical reaction, friction or impact. May be ignited by heat, sparks or flames. Some may decompose explosively when heated or involved in a fire. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. May burn violently. Decomposition or polymerization may be self-accelerating and produce large amounts of gases. Vapors or dust may form explosive mixtures with air. (ERG, 2016)

5.3Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

6.Accidental release measures

6.1Personal 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.

6.2Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered sealable containers. If appropriate, moisten first to prevent dusting. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3Methods and materials for containment and cleaning up

Sweep spilled substance into sealable containers; if appropriate, moisten first to prevent dusting. Carefully collect remainder, then remove to safe place.

7.Handling and storage

7.1Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Avoid exposure - obtain special instructions before use.Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2Conditions for safe storage, including any incompatibilities

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

8.Exposure controls/personal protection

8.1Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2Appropriate engineering controls

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

8.3Individual protection measures, such as personal protective equipment (PPE)

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

Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. 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. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

Wear dust mask when handling large quantities.

Thermal hazards

no data available

9.Physical and chemical properties

Physical state	orange crystalline powder
Colour	Orange-red crystals
Odour	no data available
Melting point/ freezing point	220-225ºC (dec.)
Boiling point or initial boiling point	284.8ºC at 760mmHg

and boiling range	
Flammability	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit / flammability limit	no data available
Flash point	126ºC
Auto-ignition temperature	no data available
Decomposition temperature	225°C
pH	no data available
Kinematic viscosity	no data available
Solubility	In water:SOLUBLE IN HOT WATER
Partition coefficient n-octanol/water (log value)	log Kow = -1.7
Vapour pressure	7.1 mm Hg at 19°C ; 10.7 mm Hg at 26.5°C
Density and/or relative density	1.65
Relative vapour density	no data available
Particle characteristics	no data available

10.Stability and reactivity

10.1Reactivity

no data available

10.2Chemical stability

Does not react with plasticizers and other components of plastics.

10.3Possibility of hazardous reactions

FlammableAZODICARBONAMIDE is easily ignited and burns rapidly. Confined samples show a high rate of pressure rise during thermal decomposition, which produces carbon monoxide and nitrogen. Sensitive to temperatures exceeding 50°C. May be sensitive to exposure to light. Stable in bulk when stored for two weeks at temperatures up to 60°C. Slightly unstable in water suspension (showed 1.3% decomposition at 2 mg/mL over a two-week period at room temperature in the light but no decomposition at 5°C over a two-week period in the dark . Reacts with hot water to give nitrogen, carbon monoxide, and ammonia [Hawley]. Decomposes in hot hydrochloric acid. Incompatible with strong acids and bases, and with compounds of metals.

10.4Conditions to avoid

no data available

10.5Incompatible materials

no data available

10.6Hazardous decomposition products

When heated to decomposition it emits toxic fumes of /nitrogen oxides/.

11.Toxicological information

Acute toxicity

- Oral: no data available
- Inhalation: LC50 Rat inhalation >6100 mg/cu m/4 hr (dry aerosol; median mass aerodynamic diameter 5.8+/- 2.25 um [geometric standard deviation])
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

12.Ecological information

12.1Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2Persistence and degradability

no data available

12.3Bioaccumulative potential

An estimated BCF of 3 was calculated for 1,1'-azo-bis(formamide)(SRC), using a log Kow of -1.7(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4Mobility in soil

The Koc of 1,1'-azo-bis(formamide) is estimated as 3(SRC), using a log Kow of -1.7(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 1,1'-azo-bis(formamide) is expected to have very high mobility in soil(SRC).

12.5Other adverse effects

no data available

13.Disposal considerations

13.1Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14.Transport information

14.1UN Number

ADR/RID: UN3242	IMDG: UN3242	IATA: UN3242

14.2UN Proper Shipping Name

ADR/RID: AZODICARBONAMIDE

IMDG: AZODICARBONAMIDE
IATA: AZODICARBONAMIDE

14.3Transport hazard class(es)

ADR/RID: 4.1	IMDG: 4.1	IATA: 4.1

14.4Packing group, if applicable

ADR/RID: II	IMDG: II	IATA: II

14.5Environmental hazards

ADR/RID: no	IMDG: no	IATA: no

14.6Special precautions for user

no data available

14.7Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

no data available

15.Regulatory information

15.1Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Azodicarbonamide	Azodicarbonamide	123-77-3	none
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.

Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.

16.Other information

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/