SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name **Azodicarbonamide**

Stock number: B23892, L10183

CAS Number: 123-77-3

EC number: 204-650-8

Index number: 611-028-00-3

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

Identified use: SU24 Scientific research and development

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier: Thermo Fisher (Kandel) GmbH

Zepelinstr. 7b

76185 Karlsruhe / Germany

Tel: +49 (0) 721 84007 280

Fax: +49 (0) 721 84007 300

Email: tech@alfa.com

www.alfa.com

Informing department: Product safety Tel + +049 (0) 7275 988687-0

1.4 Emergency telephone number:

Carechem 24: +44 (o) 1235 239 670 (Multi-language emergency number)

Poison Information Center Mainz

www.giftinfo.uni-mainz.de Telephone: +49(0)6131/19240

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

- **GHS01** exploding bomb
- **GHS08** health hazard

Unst. Expl. **H200** Unstable explosives.

Resp. Sens. **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Flam. Sol. **H228** Flammable solid.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC

- **Xn; Sensitising** R42: May cause sensitisation by inhalation.
- **E; Explosive** R2: Risk of explosion by shock, friction, fire or other sources of ignition.

Information concerning particular hazards for human and environment: Not applicable

Other hazards that do not result in classification No information known.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

Hazard pictograms

- GHS01
- GHS08

Signal word Danger

Hazard statements

- **H200** Unstable explosives.
- **H228** Flammable solid.
- **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statements

- **P210** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- **P285** In case of inadequate ventilation wear respiratory protection.
- **P373** DO NOT fight fire when fire reaches explosives.
- **P380** Evacuate area.
- **P401** Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards

Results of PBT and vPvB assessment

**PBT**: Not applicable.

**vPvB**: Not applicable.

SECTION 3: Composition/information on ingredients

3.1 Substances

- **CAS#** Designation:
  - 123-77-3 Azodicarbonamide
- **Identification number(s):**
  - EC number: 204-650-8
  - Index number: 611-028-00-3

SECTION 4: First aid measures

4.1 Description of first aid measures

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.

Seek immediate medical advice.

**After skin contact**

Instantly 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 doctor.
SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing agents: CO2, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

5.2 Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

5.3 Advice for firefighters
Protective equipment:
- Wear self-contained breathing apparatus.
- Wear full protective suit.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Bring persons out of danger.
- Wear protective equipment. Keep unprotected persons away.
- Ensure adequate ventilation
- Keep away from ignition sources.

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

6.3 Methods and material for containment and cleaning up: Dispose of contaminated material as waste according to section 13.

6.4 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 information on disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
- Handle powder with care.
- Prevent from jolting, friction and impact.
- Keep containers tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Keep away from heat and direct sunlight.
- Ensure good ventilation/exhaustation at the workplace.
- Open and handle container with care.
- Prevent formation of dust.

7.2 Conditions for safe storage, including any incompatibilities
Storage
- Requirements to be met by storerooms and containers: No special requirements.
- Information about storage in one common storage facility:
  - Do not store together with acids.
  - Store away from strong bases.
  - Store away from oxidising 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.

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

SECTION 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.

8.1 Control parameters
Components with critical values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information: No data

8.2 Exposure controls
Personal protective equipment
General protective and hygienic measures:
The usual precautionary measures should be adhered to in handling the chemicals.
- Keep away from foodstuffs, beverages and food.
- Instantly remove any soiled and impregnated garments.
- Wash hands during breaks and at the end of the work.
- Maintain an ergonomically appropriate working environment.

Breathing equipment:
Use breathing protection with high concentrations.
Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:
Check protective gloves prior to each use for their proper condition.
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Material of gloves:
- Nitrile rubber, NBR

Penetration time of glove material (in minutes) Not determined

Eye protection:
- Safety glasses

Face protection:

Body protection: Protective work clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
General Information
Appearance:
- Form: Powder
- Colour: Yellow
- Smell: Not determined
- Odour threshold: Not determined.
- pH-value: Not applicable.

Change in condition
Melting point/Melting range: ca 225 °C
### Boiling point/Boiling range:
Not determined

### Sublimation temperature / start:
Not determined

### Flash point:
Not applicable

### Inflammability (solid, gaseous):
Not determined

### Ignition temperature:
Not determined

### Decomposition temperature:
225 °C

### Self-inflammability:
Not determined.

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

#### Critical values for explosion:
- **Lower:** Not determined
- **Upper:** Not determined

#### Steam pressure:
Not applicable.

#### Density at 20 °C:
1.65 g/cm³

#### Relative density:
Not determined.

#### Vapour density:
Not applicable.

#### Evaporation rate:
Not applicable.

#### Solubility in / Miscibility with Water:
Slightly soluble

#### Partition coefficient (n-octanol/water):
Not determined.

#### Viscosity:
- **Dynamic:** Not applicable.
- **Kinematic:** Not applicable.

### 9.2 Other information
No further relevant information available.

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
Unstable explosives.

#### 10.2 Chemical stability
Stable under recommended storage conditions.

#### Thermal decomposition / conditions to be avoided:
No decomposition if used and stored according to specifications.

#### 10.3 Possibility of hazardous reactions
Reacts with strong oxidising agents

#### 10.4 Conditions to avoid
No further relevant information available.

#### 10.5 Incompatible materials:
- Acids
- Oxidising agents
- Bases
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

#### 10.6 Hazardous decomposition products:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides (NOx)

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects
Acute toxicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

#### LD/LC50 values that are relevant for classification:
- Oral LD50 >6400 mg/kg (rat)

#### Skin irritation or corrosion:
Irritant for skin and mucous membranes.

#### Eye irritation or corrosion:
Irritant effect.

#### Sensitization:
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

#### Germ cell mutagenicity:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

#### 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:
The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

#### Additional toxicological information:
The best of our knowledge the acute and chronic toxicity of this substance is not fully known.

### SECTION 12: Ecological information

#### 12.1 Toxicity
Aquatic toxicity:
No further relevant information available.

#### 12.2 Persistence and degradability
No further relevant information available.

#### 12.3 Bioaccumulative potential
No further relevant information available.

#### 12.4 Mobility in soil
No further relevant information available.

#### Additional ecological information:
- **General notes:**
  - Do not allow material to be released to the environment without proper governmental permits.
  - Water hazard class 1 (Self-assessment): slightly hazardous for water.
  - Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
  - Avoid transfer into the environment.

#### 12.5 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

#### 12.6 Other adverse effects
No further relevant information available.

### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods
**Recommendation**
Hand over to disposers of hazardous waste.

**Uncleaned packagings:**
Recommendation: Disposal must be made according to official regulations.

### SECTION 14: Transport information

#### UN-Number
- **ADR, IMDG, IATA:** UN3242

#### 14.2 UN proper shipping name
- **ADR:** 3242 AZODICARBONAMIDE
- **IMDG, IATA:** AZODICARBONAMIDE
14.3 Transport hazard class(es)

ADR

Class 4.1 (SR1) Flammable solids, self-reactive substances and solid desensitised explosives.

Label IMDG, IATA

4.1 Flammable solids, self-reactive substances and solid desensitised explosives.

14.5 Environmental hazards:

Not applicable.

14.6 Special precautions for user

Warning: Flammable solids, self-reactive substances and solid desensitised explosives.

EMS Number: F-J,S-G

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

Transport/Additional information:

ADR

Excepted quantities (EQ): E2

Limited quantities (LS): 1 kg

Transport category: 2

Tunnel restriction code: D

UN "Model Regulation": UN3242, AZODICARBONAMIDE, 4.1, II

SECTION 15: Regulatory information

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

Australian Inventory of Chemical Substances Substance is listed.

Standard for the Uniform Scheduling of Drugs and Poisons Substance is not listed.

National regulations

Information about limitation of use:

Employment restrictions concerning young persons must be observed.

For use only by technically qualified individuals.

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

Other regulations, limitations and prohibitive regulations

Substance of High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. This substance is included in the Candidate List of Substances of High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH). 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.

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 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

Abbreviations and acronyms:

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

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

IATA: International Air Transport Association

GES: Globally Harmonized System of Classification and Labelling of Chemicals

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

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)