

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

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|----------------------|-------------------------------|
| Trade name | Hexamethylenetetramine |
| Stock number: | A17213 |
| CAS Number: | 100-97-0 |
| EC number: | 202-905-8 |
| Index number: | 612-101-00-2 |

1.2 Relevant identified uses of the substance

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| or mixture and uses advised against. | No further relevant information available. |
| Identified use: | SU24 Scientific research and development |

1.3 Details of the supplier of the safety data sheet

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|--|--|
| Manufacturer/Supplier: | Alfa Aesar GmbH & Co.KG A Johnson Matthey Company Zeppelinstr. 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 (0) 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**

GHS02 flame

Flam. Sol. 2 H228 Flammable solid.



GHS07

Skin Sens. 1 H317 May cause an allergic skin reaction.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC**X** Xi; Sensitising

R43: May cause sensitisation by skin contact.



F; Highly flammable

R11: Highly flammable.

Information concerning particular hazards for human and environment:**Other hazards that do not result in classification**

Not applicable

No information known.

2.2 Label elements**Labelling according to Regulation (EC) No 1272/2008****Hazard pictograms****Signal word****Hazard statements****Precautionary statements**

The substance is classified and labelled according to the CLP regulation.

GHS02, GHS07

Warning

H228 Flammable solid.

H317 May cause an allergic skin reaction.

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

P241 Use explosion-proof electrical/ventilating/lighting/equipment.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P321 Specific treatment (see on this label).

P501 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:** 100-97-0 Hexamethylenetetramine**Identification number(s):****EC number:** 202-905-8**Index number:** 612-101-00-2**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.

After swallowing

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed

No further relevant information available.

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 (NO_x)**5.3 Advice for firefighters****Protective equipment:**

Wear self-contained breathing apparatus.

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Wear full protective suit.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation**6.2 Environmental precautions:**Keep away from ignition sources
Do not allow material to be released to the environment without proper governmental permits.
Do not allow product to reach sewage system or water bodies.
Do not allow to enter the ground/soil.**6.3 Methods and material for containment and cleaning up:**Keep away from ignition sources.
Ensure adequate ventilation.**Prevention of secondary hazards:**

Keep away from ignition sources.

6.4 Reference to other sectionsSee 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 under dry protective gas.
Keep containers tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation/exhaustion at the workplace.**Information about protection against explosions and fires:**

Protect against electrostatic charges.

7.2 Conditions for safe storage, including any incompatibilities**Storage Requirements to be met by storerooms and containers:**

Store in cool location.

Information about storage in one common storage facility:Store away from water.
Store away from oxidizing agents.**Further information about storage conditions:**Store under dry inert gas.
This product is hygroscopic.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and keep away from water.
No further relevant information available.**7.3 Specific end use(s)****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:****100-97-0 Hexamethylenetetramine (100,0%)**

MAK (Germany) | vgl.Abschn.IIb

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.
Use breathing protection with high concentrations.**Breathing equipment:****Recommended filter device for short term use:**

Use a respirator with type N95 (USA) or PE (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

Not determined

Eye protection:

Safety glasses

Body protection:Face protection
Protective work clothing.**SECTION 9: Physical and chemical properties****9.1 Information on basic physical and chemical properties****General Information****Appearance:****Form:** Crystalline powder**Colour:** White**Smell:** Not determined**Odour threshold:** Not determined.**pH-value:** Not applicable.**Change in condition****Melting point/Melting range:** ca 280 °C (subl)**Boiling point/Boiling range:** Not determined**Sublimation temperature / start:** Not determined**Flash point:** 250 °C**Inflammability (solid, gaseous):** Highly flammable.**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Self-inflammability:** Not determined.**Critical values for explosion:****Lower:** Not determined**Upper:** Not determined(Contd. on page 3)
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| | |
|---|--|
| Steam pressure: | Not applicable. |
| Density at 20 °C | 1,33 g/cm ³ |
| Relative density | Not determined. |
| Vapour 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. |
| 9.2 Other information | No further relevant information available. |

SECTION 10: Stability and reactivity

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| 10.1 Reactivity | No information known. |
| 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 oxidizing agents |
| 10.5 Incompatible materials: | Water/moisture Oxidizing agents |
| 10.6 Hazardous decomposition products: | Carbon monoxide and carbon dioxide Nitrogen oxides (NO _x) |

SECTION 11: Toxicological information

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

LD/LC50 values that are relevant for classification:

Oral LD50 569 mg/kg (mouse)

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| Skin irritation or corrosion: | May cause irritation |
| Eye irritation or corrosion: | May cause irritation |
| Sensitization: | May cause an allergic skin reaction. |
| Germ cell mutagenicity: | The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for components in this product. |
| Carcinogenicity: | The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for this product. |
| 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. |
| Experience with humans: | The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for components in this product. |
| Additional toxicological information: | To the best of our knowledge the acute and chronic toxicity of this substance is not fully known. No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH. |

SECTION 12: Ecological information

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| 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 (Assessment by list): slightly hazardous for water. Do not allow undiluted product or large quantities of it to reach ground water, water bodies 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

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| 13.1 Waste treatment methods | |
| Recommendation | Hand over to disposers of hazardous waste. Must be specially treated under adherence to official regulations. Consult state, local or national regulations for proper disposal. |
| Uncleaned packagings: | |
| Recommendation: | Disposal must be made according to official regulations. |

SECTION 14: Transport information

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| UN-Number | UN1328 |
| ADR, IMDG, IATA | |
| 14.2 UN proper shipping name | |
| ADR | 1328 HEXAMETHYLENETETRAMINE |
| IMDG, IATA | HEXAMETHYLENETETRAMINE |
| 14.3 Transport hazard class(es) | |
| ADR | |
| | |
| Class | 4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives. |

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| | |
|---|--|
| Label IMDG, IATA | 4.1 |
|  | |
| Class | 4.1 Flammable solids, self-reactive substances and solid desensitised explosives. |
| Label | 4.1 |
| Packing group ADR, IMDG, IATA | III |
| 14.5 Environmental hazards: | Not applicable. |
| 14.6 Special precautions for user | Warning: Flammable solids, self-reactive substances and solid desensitised explosives. |
| Kemler Number: | 40 |
| EMS Number: | F-A,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): | E1 |
| Limited quantities (LQ) | 5 kg |
| Transport category | 3 |
| Tunnel restriction code | E |
| UN "Model Regulation": | UN1328, HEXAMETHYLENETETRAMINE, 4.1, III |

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.

Classification according to VbF:

Not applicable

Technical instructions (air):

| Class | Share in % |
|-------|------------|
| I | 100,0 |

Water hazard class:

Water hazard class 1 (Assessment by list): slightly hazardous for water.

Other regulations, limitations and prohibitive

regulations

ELINCS (European List of Notified Chemical

Substances)

Substance is not listed.

Substances of very high concern (SVHC)

according to REACH, Article 57

REACH - Pre-registered substances

Substance is not listed.

15.2 Chemical safety assessment:

Substance is listed.
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 data specification sheet: Health, Safety and Environmental Department.

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
IATA: International Air Transport Association
GHS: 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)
VbF: Verordnung über brennbare Flüssigkeiten, Österreich (Ordinance on the storage of combustible liquids, Austria)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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