

## Material Safety Data Sheet

### According to 91/155 EEC(2001/58 EC)

Printing date: 01.12.2006

Reviewed on: 01.12.2006

#### 1 Identification of substance:

- **Product details:**
- **Trade name: Hexamine**
- **Application of the substance / the preparation**  
 Basic material for manufacturing of Hexogene  
 Accelerator in the production of rubber  
 Fungicide  
 Corrosion inhibitor (metal industry)  
 Curing agent for phenolic resins, glue and textiles  
 Organic synthesis
- **Supplier/Manufacturer:**  
 Penpet Petrochemical Trading GmbH  
 Merkur-Park  
 Sieker Landstrasse 126  
 22143 Hamburg  
 Germany  
 Tel: +49 40 675 799 0  
 Fax: +49 40 675 799 99 / 88
- **Information department:** see above
- **Emergency information:** National Poisons Information Centre      Tel.: +44 (0)870 6006266

#### 2 Composition/Data on components:

- **Chemical characterization:**
- **CAS No. Description:**  
 100-97-0 methenamine
- **Identification number(s):**
- **EINECS Number:** 202-905-8
- **EU Number:** 612-101-00-2

#### 3 Hazards identification

- **Hazard description:**



Xn Harmful  
 F Highly flammable

- **Information pertaining to particular dangers for man and environment:**  
 R 11 Highly flammable.  
 R 42/43 May cause sensitisation by inhalation and skin contact.
- **Classification system:**  
 The classification was made according to the latest editions of the EU-lists, and expanded using company data and specialized literature.

#### 4 First aid measures

- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:**  
 Remove victim from contaminated area. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Call a doctor.  
 In case of unconsciousness, place patients on their side in a stable position for transportation.
- **After skin contact:**  
 Remove soiled clothes and shoes.  
 Clean effected skin thoroughly with water and a mild cleansing agent. No residues shall remain on the skin.  
 Do not use solvents or thinners.

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If skin irritation continues, consult a doctor.

- **After eye contact:**

Rinse opened eye for several minutes under running water.

Treatment by an ophthalmologist

- **After swallowing:**

Do not induce vomiting.

If vomiting occurs spontaneously:

Hold the head of the casualty low with the body in a prone position in order to avoid aspiration.

Drink plenty of water, but never give anything to an unconscious person.

Administer medicinal carbon

Do not administer milk or alcohol.

Do not administer edible oils or ricinus oil.

Consult a physician and show this safety data sheet.

- **Information for doctor:**

- **Danger:** If swallowed or in case of vomiting, danger of entering the lungs.

- **Treatment:** Symptomatic treatment

## 5 Fire fighting measures

- **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:** Direct jet water

- **Protective equipment:**

Mount respiratory protective device.

Wear fully protective suit.

During clearance wear protective clothing and rubber boots.

- **Additional information:**

Move containers from area if it can be done without risk or cool them with water.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Collect contaminated fire fighting water separately. It must not enter the sewage system.

## 6 Accidental release measures

- **Person-related safety precautions:**



Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Use respiratory protective device against the effects of fumes/dust/aerosol.

Avoid formation of dust.

Keep away from ignition sources

Avoid contact with eyes and skin.

- **Measures for environmental protection:**

Do not allow product to reach sewage system or any water course.

Do not allow to penetrate the ground/soil.

- **Measures for cleaning/collecting:**

Ensure adequate ventilation.

Pick up mechanically.

Avoid dust formation absolutely. If necessary pick up with a tested and approved industrial vacuum cleaner.

Dispose contaminated material as waste according to item 13.

Send for recovery or disposal in suitable receptacles.

- **Additional information:**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

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### 7 Handling and storage

- **Handling**
- **Information for safe handling:**
  - Ensure good ventilation/exhaustion at the workplace.
  - Prevent formation of dust.
  - Any deposit of dust which cannot be avoided must be regularly removed.
  - Avoid inhalation of dust.
  - Restrict the quantity stored at the work place.
  - Avoid contact with eyes and skin.
- **Information about protection against explosions and fires:**
  - Dust can combine with air to form an explosive mixture.



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges

- **Storage**
- **Requirements to be met by storerooms and receptacles:**
  - Store container tightly sealed at a cool and dry place with sufficient ventilation.
  - Suitable material for containers and packaging:
    - Polyethylene
- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from feed.
  - Do not store together with acids.
- **Further information about storage conditions:**
  - Keep receptacle tightly sealed.
  - Protect from humidity and water.
- **Recommended storage temperature:** 15°-30° C
- **Storage class** 4.1 flammable solid substances (VCI)

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional Occupational Exposure Limit Values for possible hazards during processing:**
  - Observe general threshold limit for dust.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures:**
  - Keep away from foodstuffs, beverages and feed.
  - Immediately remove all soiled and contaminated clothing
  - Vacuum clean contaminated clothing. Do not blow or brush off contamination.
  - Avoid contact with the eyes and skin.
  - Wash hands before breaks and at the end of work.
  - Do not inhale dust / smoke / mist.
- **Breathing equipment:**



In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

Short term filter device:  
Filter P2.

- **Protection of hands:**
  - Wear chemically resistant protective gloves (tested according to DIN EN 374)
  - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

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Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation  
After use of gloves apply skin-cleaning agents and skin cosmetics.

**Material of gloves:**

For undissolved solid substances following materials may be suitable:

Nitrile rubber, NBR  
Butyl rubber, BR  
Polychloroprene rubber (CR)  
Fluorocarbon rubber (FKM)

Following data refer to aqueous saturated solution of the substance:

Suitable glove material:

Nitrile rubber - NBR (0,35 mm)  
Butyl rubber - Butyl (0,5 mm)  
Fluorocarbon rubber - FKM (0,4 mm)

**Penetration time of glove material:**

The exact break-through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**Eye protection:** Tightly sealed goggles.**Body protection:**

Protective work clothing.

According to hazard:

Apron  
Boots

### 9 Physical and chemical properties:

**General Information**

**Form:** Crystalline powder  
**Colour:** Whitish  
**Odour:** Odourless

**Change in condition:**

**Melting point/Melting range:** 285-295 Subl.°C

**Boiling point/Boiling range:** not applicable  
sublimes

**Flash point:** 250°C

**Ignition temperature:** 530°C

**Decomposition temperature:** 280°C

**Danger of explosion:** Product does not present an explosion hazard.

**Density at 20°C:** 1.331 g/cm<sup>3</sup>

**Solubility in / Miscibility with**

**Water at 20°C:** 100 g/l

### 10 Stability and reactivity

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

**Materials to be avoided:**

Strong acids  
Oxidants  
Peroxides  
Halogenated hydrocarbon

**Dangerous reactions:**

Reacts with strong acids and generates formaldehyde.  
Reacts explosively with peroxides, halogenated hydrocarbons, strong oxidizers.

**Dangerous products of decomposition:**

In the case of fire or at high temperatures the formation of the following decomposition products is possible.  
Nitrogen oxides (NO<sub>x</sub>)

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Hydrogen cyanide (prussic acid)  
 Ammonia  
 Nitrous gases  
 Possibly traces of:  
 Formaldehyde

### 11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:** No toxicity data are available for the product itself.
- **Primary irritant effect:**
- **on the skin:** Irritation to skin and mucous membrane possible.
- **on the eye:** Slightly irritating
- **Sensitization:**  
 Sensitization possible through inhalation.  
 Sensitization possible through skin contact.

### 12 Ecological information

- **Information about elimination (persistence and degradability):**
- **Other information:** The product is biodegradable.
- **Behaviour in environmental systems:**
- **Mobility and bioaccumulation potential:** Very low potential for bioaccumulation.
- **Ecotoxicological effects:**
- **Aquatic toxicity:**

#### 100-97-0 methenamine

EC<sub>10</sub> 5000 mg/l (fish)

EC<sub>50</sub>/48h 10000 mg/l (daphnia magna)

- **General notes:**  
 Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water.  
 Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.  
 Danger to drinking water is possible if large quantities leak into the ground or into water course.

### 13 Disposal considerations

- **Product:**
- **Recommendation:**



Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Disposal according to instructions of local authorities.

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

### 14 Transport information

- **Land transport ADR/RID (cross-border)**



- **ADR/RID class:** 4.1 (F1) Flammable solids, self-reactive substances and solid desensitised explosives.
- **Danger code (Kemler):** 40
- **UN-Number:** 1328
- **Packaging group:** III

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- **Label:** 4.1
- **Description of goods:** 1328 HEXAMETHYLENETETRAMINE
- **Remarks:** Limited Quantity:6 kg per inner packaging, 30 kg gross per packaging unit
- **Maritime transport IMDG:**



- **IMDG Class:** 4.1
- **UN Number:** 1328
- **Label:** 4.1
- **Packaging group:** III
- **EMS Number:** F-A,S-G
- **Proper shipping name:** HEXAMETHYLENETETRAMINE
- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 4.1
- **UN/ID Number:** 1328
- **Label:** 4.1
- **Packaging group:** III
- **Proper shipping name:** HEXAMETHYLENETETRAMINE
- **Remarks:**
  - Packing Instructions:
  - Limited Quantity: Y419 10 kg max. net
  - Passenger and cargo aircraft: 419 25 kg max. net/Pkg
  - Cargo aircraft only: 420 100 kg max. net/Pkg

### 15 Regulations

- **Markings according to EC guidelines:**  
The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials  
EC-labelling

- **Code letter and hazard designation of product:**



Xn Harmful  
F Highly flammable

- **Risk phrases:**  
11 Highly flammable.  
42/43 May cause sensitisation by inhalation and skin contact.

- **Safety phrases:**  
16 Keep away from sources of ignition - No smoking.  
22 Do not breathe dust.  
24 Avoid contact with skin.  
37 Wear suitable gloves.

- **National regulations**

- **Information about limitation of use:** Restrictions on juvenile employment must be observed.

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

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**16 Other information:**

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing MSDS:**  
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Postfach 1451 D-64345 Griesheim  
Tel.: +49-6155-823241 Fax: +49-6155-823246
- **Contact:** Angelika Torges
- **Sources:** HSDB database

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