

## Safety data sheet

according to 1907/2006/EC, Article 31

Printing date: 08.04.2011

Version: 2

Revision: 08.04.2011

### \* 1 Identification of the substance/mixture and of the company/undertaking

- **Product identifier**
- **Trade name:** melamine
- **CAS Number:**  
108-78-1
- **EINECS Number:**  
203-615-4
- **Registration number:** 01-2119485947-16-0013
- **Relevant identified uses of the substance or mixture and uses advised against:**
- **Uses advised against:**  
Food additive  
Additive for animal feed
- **Application of the substance / the preparation:** Raw material for industrial applications
- **Details of the supplier of the safety data sheet**
- **Supplier/Manufacturer:**  
Penpet Petrochemical Trading GmbH  
Merkurring 105  
22143 Hamburg  
Germany  
Tel: +49 40 675 799 0  
Fax: +49 40 675 799 99 / 88
- **Email competent person:** angelika.torges@kft.de
- **Information department:** See supplier/manufacturer
- **Emergency telephone number:**  
National Poisons Information Service (NPIS)  
24 hour national number is 0844 892 0111      professionals only  
  
National Health Service (NHS)  
24 hour national number is 0845 4647      consumer

### \* 2 Hazards identification

- **Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008** The substance is not classified according to the CLP regulation.
- **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** not applicable
- **Information concerning particular hazards for human and environment:**  
No hazards to be particularly mentioned. Please note the information of this Material Safety Data Sheet.
- **Label elements**
- **Labelling according to Regulation (EC) No 1272/2008** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Substance characteristics do not meet screening criteria.
- **vPvB:** Substance characteristics do not meet screening criteria.

### 3 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description:**  
108-78-1 melamine

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- **Identification number(s):**
- **EINECS Number:** 203-615-4

### \* 4 First aid measures

- **Description of first aid measures**
- **General information:** If symptoms persist or in case of doubt, seek medical advice.
- **After inhalation:** Supply fresh air; consult a doctor in case of pain.
- **After skin contact:** Wash with water and soap and rinse with plenty of water.
- **After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:**
  - Do not induce vomiting.
  - Rinse out mouth and then drink plenty of water.
  - Call a doctor immediately.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed** Symptomatic treatment

### \* 5 Firefighting measures

- **Extinguishing media**
- **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:** High volume water jet
- **Special hazards arising from the substance or mixture**
  - In case of fire, the following can be released:
    - Carbon monoxide (CO)
    - Carbon dioxide
    - Nitrogen oxides (NO<sub>x</sub>)
    - Hydrogen cyanide (HCN)
    - Ammonia
- **Advice for firefighters**
- **Protective equipment:**
  - Wear self-contained respiratory protective device.
  - Do not inhale combustion vapours.
- **Additional information:**
  - Collect contaminated fire fighting water separately. It must not enter the sewage system.
  - Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

### \* 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
  - Ensure adequate ventilation.
  - Wear protective clothing.
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
- **Environmental precautions:**
  - Do not allow product to reach sewage system or any water course.
  - Do not allow to penetrate the ground/soil.
- **Methods and material for containment and cleaning up:**
  - Pick up mechanically.
  - Make sure to recycle or dispose of in suitable receptacles.
- **Reference to other sections**
  - See Section 8 for information on personal protection equipment.

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See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:**
- **Precautions 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.  
Avoid contact with eyes and skin.  
Avoid inhalation of vapours formed by heated product.
- **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store at ambient temperatures and at dry conditions.
- **Information about storage in one common storage facility:**  
Store away from foodstuffs.  
Store away from feed.  
Do not store together with acids.  
Store away from oxidizing agents.
- **Further information about storage conditions:** None.
- **Storage class:** 11 Combustible solids

## \* 8 Exposure controls/personal protection

- **Additional information about design of technical systems:**  
Install appropriate mechanical ventilation.  
Protect against electrostatic charges.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **DNELs**  
Abbreviations:  
In = Industrial  
Prof = Professional  
Cons = Consumer  
  
LLE = Long term, local effects  
LSE = Long term, systemic effects  
SLE = Short term, local effects  
SSE = Short term, systemic effects

|            |               |                                              |
|------------|---------------|----------------------------------------------|
| Oral       | DNEL/Cons/LSE | 0.63 mg/kg bw/day (Human)                    |
| Dermal     | DNEL/Cons/LSE | 6.3 mg/kg bw/day (Human)                     |
|            | DNEL/In/LSE   | 12.6 mg/kg bw/day (Human)<br>worst case DNEL |
|            | DNEL/In/SSE   | 31.6 mg/kg bw/day (Human)                    |
| Inhalative | DNEL/Cons/LSE | 2.2 mg/m <sup>3</sup> (Human)                |
|            | DNEL/In/LSE   | 8.9 mg/m <sup>3</sup> (Human)                |

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DNEL/In/SSE > 21 mg/m<sup>3</sup> (Human)**· PNECs**

Abbreviations:

aq = aqua

sed = sediment

Oral PNEC/oral 22 mg/kg (-)

PNEC 200 mg/kg (sewage treatment plant)

PNEC/Aq 1.8 mg/l (fresh water)

2 mg/l (intermittent release)

0.18 mg/l (marine water)

PNEC/sed 19.4 mg/kg (fresh water)

1.94 mg/kg (marine water)

PNEC/soil 5.67 mg/kg (-)

**· CAS No. Designation of material % Type Value Unit****· 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.**· Exposure controls****· Personal protective equipment:****· General protective and hygienic measures:**

The usual precautionary measures should be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Do not eat or drink while working.

Wash hands before breaks and at the end of work.

Vacuum clean contaminated clothing. Do not blow or brush off contamination.

Use skin protection cream for skin protection.

**· Breathing equipment:**

Not necessary if room is well-ventilated.

At formation of dust:

In case of unintended release:

Short term filter device:

Filter P1.

If vapors form, use suitable respiratory protective device

**· Protection of hands:**

Protective gloves.

To avoid skin problems reduce the wearing of gloves to the required minimum.

Preventive skin protection by use of skin-protecting agents is recommended.

After use of gloves apply skin-cleaning agents and skin cosmetics.

**· Material of gloves:**

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.

Adjust selection of glove material to the other substances used.

For undissolved solid substances following materials may be suitable:

Nitrile rubber, NBR

Butyl rubber, BR

Polychloroprene rubber (CR)

Fluorocarbon rubber (FKM)

**· Penetration time of glove material:**

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

**· Eye protection:** At formation of dust or insufficient ventilation: Tightly sealed goggles.**· Body protection:** Protective work clothing.

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## \* 9 Physical and chemical properties

### · Information on basic physical and chemical properties

#### · General Information:

#### · Appearance:

Form: Crystalline powder  
 Colour: White

· Odour: Weak, characteristic

· pH-value: Not applicable.

#### · Change in condition:

Melting point/Melting range: 361°C  
 Boiling point/Boiling range: sublimates

· Flash point: not applicable

· Flammability (solid, gaseous): Product is not flammable.

#### · Ignition temperature:

Decomposition temperature: > 280°C

· Self ignition temperature: > 400° C  
 > 400°C

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

#### · Explosion limits:

Lower: Not determined.  
 Upper: Not determined.

· Oxidizing properties: None.

· Vapour pressure: Not applicable.

· Density at 20°C: 1.57 g/cm<sup>3</sup>

· Dissociation constant pKa: 6.7

· Solubility in / Miscibility with  
 Water at 20°C: 3.48 g/l

· Segregation coefficient (n-octanol/water): - 1,22

#### · Viscosity:

dynamic: Not applicable.  
 kinematic: Not applicable.

## \* 10 Stability and reactivity

### · Reactivity

#### · Chemical stability

#### · Thermal decomposition / conditions to be avoided:

No decomposition if used and stored according to specifications.  
 To avoid thermal decomposition do not overheat.  
 At temperatures above 280° C ammonia is formed.

· Possibility of hazardous reactions Strong exothermic reactions with below mentioned substances.

#### · Incompatible materials:

Strong acids  
 Strong oxidants

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· **Hazardous decomposition products:** No hazardous decomposition products; if instructions for storage and handling are followed.

### \* 11 Toxicological information

· **Information on toxicological effects**

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**

Oral LD<sub>50</sub> 3828 mg/kg (rat/female)  
3161 mg/kg (rat/male)

Inhalative LC50 > 5190 mg/m<sup>3</sup> (rat) (OECD 403)  
aerosol

· **Primary irritant effect:**

· **on the skin:** No irritating effect species: rabbit OECD test 404

· **on the eye:**

Light irritation possible

Not to be classified

· **On respiratory tract:** No data available.

· **Sensitization:**

No sensitization species: guinea pig OECD 406

Not sensitizing (Human Patch Test)

· **Other information (about experimental toxicology):**

Ames-test: negative

Mutagenicity (mammalian cell test): micronucleus negative

Chinese Hamster Ovary Cell Mutation Test (HGPRT) - OECD 476: negativ

· **Carcinogenic, mutagenic effects and adverse effects on reproduction:**

Carcinogenicity: not sufficient data available for classification

Reproductive toxicity: insufficient data for classification

Oral NOAEL 2250 mg/kg bw/day (rat) (NTP)  
103 weeks

NOAEL (maternal) ~ 400 mg/kg bw/day (rat) (OECD 414)

NOAEL(developmental) ~ 1060 mg/kg bw/day (rat) (OECD 414)

· **Subacute to chronic toxicity:**

· **STOT-single exposure** No classification

· **STOT-repeated exposure:** No classification

· **Aspiration hazard** not relevant

· **Toxicokinetics, metabolism and distribution:** Substance is excreted unchanged.

· **Repeated dose toxicity:**

Oral NOAEL 240 mg/kg/day (rat)  
28 d

~ 72 resp. 63 mg/kg bw/d (rat) (13 weeks)

103 weeks

NOAEL 2 years 126 mg/kg bw/day (rat)

### \* 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

EC<sub>0</sub> (static) > 100 mg/l (Nitrosomonas sp./Nitrobacter sp.)  
2h

EC<sub>50</sub>/48h (static) > 1000 mg/l (daphnia magna) (EPA OPP 72-2)

EC<sub>50</sub>/96h 940 mg/l (algae)

325 mg/l (Pseudokirchneriella subcapitata)

LC<sub>50</sub>/96h > 3000 mg/l (Onchorhynchus mykiss)

NOEC 1500 mg/l (Onchorhynchus mykiss)

28 d

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- NOEC/21d 18 mg/l (daphnia magna)  
 NOEC/96h (static) 98 mg/l (Pseudokirchneriella subcapitata)
- **Persistence and degradability**
  - **Other information:**  
 Not readily biodegradable.  
 Not inherently biodegradable.  
 This substance is subject to hydrolysis. Cyanuric acid produced by hydrolysis is biodegradable.
  - **Behaviour in environmental systems:**
  - **Bioaccumulative potential** Log POW < 0 - not lipophilic, no bioaccumulation.
  - **BCF:** < 1
  - **Adsorption coefficient Koc:**  
 1,1-1,5  
 1,1-1,5
  - **Other information:** Based on a low adsorption coefficient Koc, a high mobility in soil is assumed.
  - **Ecotoxic effects:**
  - **Other information:** Can be degraded effectively in adapted sewage treatment plants
  - **Additional ecological information:**
  - **General notes:**  
 Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous to water.  
 According to appendix 3 of VwVwS dated 27.7.2005 (German regulation)  
 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.
  - **Results of PBT and vPvB assessment**
  - **PBT:** Substance characteristics do not meet screening criteria.
  - **vPvB:** Substance characteristics do not meet screening criteria.

### 13 Disposal considerations

- **Waste treatment methods**
- **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.

- **European waste catalogue:**

16 05 09 discarded chemicals other than those mentioned in 16 05 06, 16 05 07 or 16 05 08

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

### 14 Transport information

- **Land transport ADR/RID (cross-border)**
- **ADR/RID class:** -  
 No hazardous good according to the regulation.
- **Maritime transport IMDG:**
- **IMDG Class:** No hazardous good according to the regulation.
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** No hazardous good according to the regulation.
- **UN "Model Regulation":** -

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- **Special precautions for user** Not applicable.

### \*15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Water hazard class:**  
Water hazard class 1 (Self-assessment): slightly hazardous for water.  
Ident number.: 4328
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 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.

- **Reasons for amendments:**  
Completion of toxicity data  
Information on toxicity  
Ecological data  
Characteristics  
Regulation (EC) No. 1272/2008 /CLP  
EC Regulation 453/2010  
Registration number  
General revision
- **Replaces version dated:** 30.11.2006
- **Department issuing MSDS:**  
KFT Chemieservice GmbH  
Im Leuschnerpark. 3 D-64347 Griesheim  
Postfach 1451 D-64345 Griesheim  
  
Phone: +49 6155 86829-0      Fax: +49 6155 86829-25  
Safety Data Sheet Service: +49 6155 86829-22
- **Contact:** Angelika Torges
- **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)  
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
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)  
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)  
DNEL: Derived No-Effect Level (REACH)  
PNEC: Predicted No-Effect Concentration (REACH)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent
- **Sources:** Chemical Safety Report
- **\* Data compared to the previous version altered.**  
Changes have been made to chapters marked with a \*, as compared to the previous version.