

## Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date: 31.07.2009

Revision: 31.07.2009

### 1 Identification of substance/preparation and of the company/undertaking:

- **Product details:**
- **Trade name:** **Maleic Anhydride (MA) molten**
- **Application of the substance / the preparation**  
 Paints and varnishes  
 Polyester resin  
 Plasticizer
- **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
- **Email competent person:** angelika.torges@kft.de
- **Information department:** See supplier/manufacturer
- **Emergency information:** National Poisons Information Centre      Tel.: +44 (0)870 6006266

### 2 Hazards identification

- **Hazard description:**



C Corrosive

- **Information pertaining to particular dangers for man and environment:**

Transport temperature: &gt; 65° C. Danger of burning due to the high temperature.

Fumes are irritating to skin, eyes and mucous membranes.

R 22 Harmful if swallowed.

R 34 Causes burns.

R 42/43 May cause sensitisation by inhalation and skin contact.

- **Classification system:**

The classification was made according to the latest editions of the EC-lists, and expanded using company data and specialized literature.

- **GHS label elements**


**Danger**

H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H317 - May cause an allergic skin reaction.


**Danger**

H314 - Causes severe skin burns and eye damage.


**Warning**

H302 - Harmful if swallowed.

- **Prevention:**

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P285 In case of inadequate ventilation wear respiratory protection.

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**Response:**

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.  
Continue rinsing.

P310 Immediately call a POISON CENTER or doctor/physician.

**Disposal:**

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 3 Composition/information on ingredients

**Chemical characterization:****CAS No. Description:**

3108-31-6 maleic anhydride

**Identification number(s):****EINECS Number:** 203-571-6**Index number:** 607-096-00-9

### 4 First aid measures

**General information:**

Immediately remove any clothing soiled by the product.

Symptoms of poisoning may occur even after several hours; therefore medical observation is suggested for at least 48 hours after the accident.

**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:**

Clean with water and soap. If possible, also wash with polyethylene glycol 400.

Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.

After contact with the molten product, cool rapidly with cold water.

Call a doctor immediately.

**After eye contact:**

Protect unharmed eye.

Rinse the eyes with open eyelids for 10 - 15 minutes with water.

Immediate transport to ophthalmologist or ophthalmic clinic.

**After swallowing:**

Do not induce vomiting; call for medical help immediately.

Rinse out mouth and then drink plenty of water.

Administer medicinal carbon

Never give anything by mouth to a unconscious person.

**Information for doctor:**

After inhalation oedema of the lungs may occur. Symptoms can also occur several hours after overexposure.

**Treatment:**

Symptomatic treatment

(decontamination, vital functions)

In cases of irritation to the lungs, initial treatment with Dexametason metered aerosol.

### 5 Fire fighting measures

**Suitable extinguishing agents:**

Water jet spray

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 Carbon dioxide (CO<sub>2</sub>)

Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:**

Direct jet water

Extinguishing powder.

- **Special hazards caused by the material, its products of combustion or resulting gases:**

Dangerous decomposition product see chapter 10: stability and reactivity

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

During clearance wear protective clothing and rubber boots.

- **Additional information:**

Heating leads to pressure increase entailing danger of bursting and explosion. Immediately cool neighbouring packages and containers with sprayed water and, if possible, remove them out of the danger zone

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

- **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 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.

Allow molten product to solidify, pick up mechanically.

Send for recovery or disposal in suitable receptacles.

Dispose contaminated material as waste according to item 13.

### 7 Handling and storage

- **Handling**

- **Information for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Waste air is to be released into the atmosphere only via suitable separators.

Avoid inhalation of vapours formed by heated product.

Avoid contact with eyes and skin.

Additional danger of scalding due to the high temperature of the product.

- **Information about protection against explosions and fires:**



Keep ignition sources away - Do not smoke.

Observe the general rules of industrial fire protection.

- **Storage**

- **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.

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- **Information about storage in one common storage facility:**
  - Store away from foodstuffs.
  - Store away from feed.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Storage class** 8 Corrosive products (VCI)

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** Install appropriate mechanical ventilation.
- **Components with limit values that require monitoring at the workplace:**

#### 108-31-6 maleic anhydride

WEL (Great Britain) Short-term value: 3 mg/m<sup>3</sup>Long-term value: 1 mg/m<sup>3</sup>

Sen

OEL (Ireland) Long-term value: 1 mg/m<sup>3</sup>, 0.25 ppm

Sen

- **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
- Do not inhale gases / fumes / aerosols.
- Wash hands before breaks and at the end of work.
- Avoid contact with eyes and skin absolutely.
- After skin contact cleanse skin thoroughly.
- After contact with eyes rinse immediately.
- Provide eye bath.
- If larger quantities are handled provide emergency showers.

##### · **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 A/P2.

##### · **Protection of hands:**

- Chemical resistant gloves
- When handling the molten product use heat-resistant gloves.
- Check the permeability prior to each renewed use of the glove.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- 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.

##### · **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:** Tightly sealed goggles.
- **Body protection:** Protective work clothing.

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### 9 Physical and chemical properties:

#### · General Information

**Form:** Melt  
**Colour:** Whitish  
**Odour:** Penetrating

#### · Change in condition:

**Melting point/Melting range:** 52.6°C  
**Boiling point/Boiling range:** 202°C

· **Flash point:** 103°C

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

· **Ignition temperature:** 380°C

· **Decomposition temperature:** > 150°C

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/dust mixtures is possible.

#### · Explosion limits:

**Lower:** 1.4 Vol %  
**Upper:** 7.1 Vol %

· **Vapour pressure at 20°C:** 0.2 hPa

· **Density at 20°C:** 1.48 g/cm<sup>3</sup>

#### · Solubility in / Miscibility with

**Water at 20°C:** 788 g/l  
Hydrolysing

### 10 Stability and reactivity

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

No decomposition if used and stored according to specifications.  
To avoid thermal decomposition do not overheat.  
Conditions to be avoided: see chapter 7

#### · Materials to be avoided:

Alcaline hydroxide  
Alkali metals  
Sodium hydroxide  
Potassium hydroxide

· **Dangerous reactions:** Strong exothermic reaction with above-mentioned substances.

#### · Dangerous products of decomposition:

In the case of fire or at high temperatures the formation of the following decomposition products is possible.  
Irritant gases/vapours

### 11 Toxicological information

#### · Acute toxicity:

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

##### 108-31-6 maleic anhydride

Oral LD<sub>50</sub> 400 mg/kg (rat)  
Dermal LD<sub>50</sub> 2620 mg/kg (rabbit)

#### · Primary irritant effect:

· **on the skin:** Caustic effect on skin and mucous membranes.  
· **on the eye:** Caustic effect

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**· Sensitization:**

Sensitization possible through inhalation.  
May cause sensitization by skin contact.

**· Additional toxicological information:**

Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

· **Sensitisation** May cause sensitisation by inhalation and skin contact.

### 12 Ecological information

**· Ecotoxicological effects:****· Aquatic toxicity:****108-31-6 maleic anhydride**

EC<sub>50</sub>/24h 88 mg/l (daphnia magna)  
(immobilization; test solution neutralized)

IC<sub>50</sub>/72h (static) 29 mg/l (scenedesmus subspicatus)

LC<sub>50</sub>/24h (static) 150 mg/l (lepomis macrochirus)  
aeration by "oxygenation interface method"; test organisms acclimated to test temperature for 10-14 days; 20 deg C, pH 6.9-7.5, dechlorinated water, total hardness 84.0-163.0 mg/L (as CaCO<sub>3</sub>), 5 mg O<sub>2</sub>/L or higher

**· 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 be specially treated adhering to official regulations.

**· Uncleaned packagings:**

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

### 14 Transport information

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

- **ADR/RID class:** 8 (C4) Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 2215
- **Packaging group:** III
- **Label:** 8
- **Description of goods:** 2215 MALEIC ANHYDRIDE, molten
- **Limited quantities (LQ)** LQ0
- **Transport category** 0
- **Tunnel restriction code** E
- **Remarks:** Limited quantities: none

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**· Maritime transport IMDG:**


- **IMDG Class:** 8
- **UN Number:** 2215
- **Label:** 8
- **Packaging group:** III
- **EMS Number:** F-A,S-B
- **Proper shipping name:** MALEIC ANHYDRIDE, molten
- **Air transport ICAO-TI and IATA-DGR:**
- **ICAO/IATA Class:** 8
- **UN/ID Number:** 2215
- **Proper shipping name:** MALEIC ANHYDRIDE, molten
- **Remarks:** Transport by aircraft is forbidden!!
- **UN "Model Regulation":** UN2215, MALEIC ANHYDRIDE, 8, III

### 15 Regulatory information:

**· Markings according to EC guidelines:**

The product has been marked in accordance with EU Directives / respective national laws.  
"EC-labelling"

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


C Corrosive

**· Risk phrases:**

- 22 Harmful if swallowed.
- 34 Causes burns.
- 42/43 May cause sensitisation by inhalation and skin contact.

**· Safety phrases:**

- 2 Keep out of the reach of children.
- 23 Do not breathe vapour.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**· National regulations**
**· Information about limitation of use:**

Restrictions on juvenile employment must be observed.  
Employment restrictions concerning pregnant and lactating women must be observed.

**· Technical guidance (air):**
**· Class Share in %**

- I 100.0

**· 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:**

KFT Chemieservice GmbH  
Im Leuschnerpark. 3 D-64347 Griesheim  
Postfach 1451 D-64345 Griesheim

Tel.: +49 6155 86829-0 Fax: +49 6155 86829-25

• **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)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent