

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:** Maleic Anhydride (MA) solid
- **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
- **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:**
 108-31-6 maleic anhydride
- **Identification number(s):**
- **EINECS Number:** 203-571-6
- **EU Number:** 607-096-00-9

3 Hazards identification

- **Hazard description:**



C Corrosive

- **Information pertaining to particular dangers for man and environment:**
 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 EU-lists, and expanded using company data and specialized literature.

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.

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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
Carbon dioxide (CO₂)
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

Avoid formation of dust.

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

· **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.

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

Allow molten product to solidify, pick up mechanically.

Send for recovery or disposal in suitable receptacles.

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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.
- Prevent formation of dust.
- Any deposit of dust which cannot be avoided must be regularly removed.
- Waste air is to be released into the atmosphere only via suitable separators.
- Avoid inhalation of dust.
- Avoid inhalation of vapours formed by heated product.
- 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.

· 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.
- Store in a cool place.
- Protect from humidity and water.
- Protect from heat and direct sunlight.
- Storage of large quantities under nitrogen.

· 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: 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
- Wash hands before breaks and at the end of work.
- Vacuum clean contaminated clothing. Do not blow or brush off contamination.
- Avoid contact with eyes and skin absolutely.
- 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:

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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 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.

9 Physical and chemical properties:

General Information

Form:	Solid.
Colour:	White
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/cm³
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:

Alkaline hydroxide

Alkali metals

Sodium hydroxide

Potassium hydroxide

Dangerous reactions:

As the product is supplied it is not capable of dust explosion; however enrichment with fine dust causes risk of dust explosion

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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:** No toxicity data are available for the product itself.

· **Primary irritant effect:**

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

· **on the eye:** Caustic effect

· **Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through 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.

12 Ecological information

· **Ecotoxicological effects:**

· **Aquatic toxicity:** Presently there are no ecotoxicological values available.

· **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

· **Remarks:** Limited Quantity: 6 kg per inner packaging, 30 kg gross per packaging unit

· **Maritime transport IMDG:**



· **IMDG Class:** 8

· **UN Number:** 2215

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- **Label:** 8
- **Packaging group:** III
- **EMS Number:** F-A,S-B
- **Proper shipping name:** MALEIC ANHYDRIDE
- **Air transport ICAO-TI and IATA-DGR:**



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 2215
- **Label:** 8
- **Packaging group:** III
- **Proper shipping name:** MALEIC ANHYDRIDE
- **Remarks:** Packing Instructions:
For Limited Quantity: Y 822 5 kg max. net/Pkg
Passenger and cargo aircraft: 822 25 kg max. net/Pkg
Cargo aircraft only: 823 100 kg max. net/Pkg
- **Transport/Additional information:** Transport data are not applicable to the molten substance.

15 Regulations

- **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:**
22 Do not breathe dust.
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.

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.

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