

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:** **Trimellitic Anhydride (TMA)**
- **Application of the substance / the preparation** Chemicals for 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:**
552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride
- **Identification number(s):**
- **EINECS Number:** 209-008-0
- **EU Number:** 607-097-00-4

3 Hazards identification

- **Hazard description:**



Xn Harmful

- **Information pertaining to particular dangers for man and environment:**
R 37 Irritating to respiratory system.
R 41 Risk of serious damage to eyes.
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.
- **Additional information:** Aqueous solutions of the substance are acidic.

4 First aid measures

- **General information:**
First aid personnel should pay attention to their own safety.
Take affected persons out of danger area and lay them down.
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:**
Immediately wash with water and soap and rinse thoroughly.
Seek medical treatment.
- **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

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- **After swallowing:**
Rinse out mouth and then drink plenty of water.
Never give anything by mouth to a unconscious person.
Administer medicinal carbon
Induce vomiting and call for medical help.
- **Information for doctor:**
The substance is irritating to the upper respiratory tract and may cause sensitisation to skin and respiratory tract. Acute irritation or bronchial stricture are first of all treated symptomatically. Depending on the extent of exposition and the medical condition a longer medical attendance may be necessary.
Hospitalise every TMA-intoxication; be prepared for intubation
Check renal function and look out for delayed allergic reactions.
- **The following symptoms may occur:**
Redness of the skin
Vesiculation
Extreme irritation of mucous membranes
After inhalation:
Irritation of mucuous membranes
Cough
drooling nose
After swallowing:
Nausea
Vomiting
Diarrhoea
Local irritation symptoms
- **Treatment:**
Symptomatic treatment
In cases of irritation to the lungs, initial treatment with Dexametason metered aerosol.

5 Fire fighting measures

- **Suitable extinguishing agents:**
CO₂, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **For safety reasons unsuitable extinguishing agents:** Direct jet water
- **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.
- **Additional information:**
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.

- Use respiratory protective device against the effects of fumes/dust/aerosol.
Ensure adequate ventilation
Avoid formation of dust.
- **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.
Dispose contaminated material as waste according to item 13.

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Send for recovery or disposal in suitable receptacles.

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.
- Restrict the quantity stored at the work place.
- Avoid contact with eyes and skin.
- Avoid inhalation of dust.

· 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
- Welding operations are permitted only under supervision.

· Storage**· Requirements to be met by storerooms and receptacles:**

- Store container tightly sealed at a cool and dry place with sufficient ventilation.
- Provide acid-resistant floor.

· 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.
- Protect from humidity and water.
- This product is hygroscopic.

· Storage class 11 Combustible solids

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:**552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride**WEL (Great Britain) Short-term value: 0.12 mg/m³Long-term value: 0.04 mg/m³

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- 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.
- Avoid contact with eyes and skin absolutely.
- Use skin protection cream for skin protection.
- Provide eye bath.
- If larger quantities are handled provide emergency showers.

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· 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:

A P3

· Protection of hands:

Chemical resistant gloves

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

Check protective gloves prior to each use for their proper condition.

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.

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 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:	Flakes
Colour:	Whitish
Odour:	mouldy

· Change in condition:

Melting point/Melting range: 165°C**Boiling point/Boiling range:** 390°C

· **Flash point:** not applicable

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

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

· Explosion limits:

Lower: 1 Vol %**Upper:** 7 Vol %

· **Vapour pressure:** 7.6x10⁻⁵ Pa

· **Density at 20°C:** 1.54 g/cm³

· **Solubility in / Miscibility with Water:** decomposition

· **pH-value (21 g/l) at 20°C:** 2

· **Segregation coefficient (n-octanol/water):** 1.95 log POW

· **Additional information:** Soluble in acetone.

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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
 - Strong bases
 - Strong oxidants
 - Water and humidity
- **Dangerous reactions:** No dangerous reactions known
- **Dangerous products of decomposition:**
 - In the case of fire or at high temperatures the formation of the following decomposition products is possible.
 - Carbon monoxide and carbon dioxide
- **Additional information:** moisture sensitive

11 Toxicological information

- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**
 - 552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride**
 - Oral LD₅₀ 2730 mg/kg (rat)
 - Dermal LD₅₀ > 2000 mg/kg (rabbit)
 - Inhalative LC₅₀/4 h > 2.33 mg/l (rat)
- **Primary irritant effect:**
- **on the skin:**
 - Irritation to skin and mucous membrane possible.
 - Product dust is irritating the upper respiratory tract.
- **on the eye:** Strong irritant with the danger of severe eye injury.
- **Sensitization:**
 - Sensitization possible through inhalation.
 - Sensitization possible through skin contact.
- **Additional toxicological information:**
 - After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

12 Ecological information

- **Information about elimination (persistence and degradability):**
- **Other information:** Biodegradability: 75% in 28 days
- **Behaviour in environmental systems:**
- **Mobility and bioaccumulation potential:**
 - Due to the distribution coefficient n-octanol/water a worth-mentioning accumulation in organisms is not expected.
- **Other information:** BCF: 3
- **Ecotoxicological effects:**
- **Aquatic toxicity:**
 - 552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride**
 - EC₀ 1000 mg/l (daphnia magna)
 - LC₀ > 1000 mg/l (leuciscus idus)
- **Remark:** Harmful effect by pH-value shift.
- **General notes:**
 - Water hazard class 1 (German Regulation) (Self-assessment): 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.

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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.

- **European waste catalogue:**

07 01 99 wastes not otherwise specified

- **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.

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

- **Risk phrases:**
37 Irritating to respiratory system.
41 Risk of serious damage to eyes.
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.
- **National regulations**
- **Information about limitation of use:**
Employment restrictions concerning pregnant and lactating women must be observed.
Restrictions on juvenile employment must be observed.
- **Water hazard class:** Water hazard class 1 (Self-assessment): 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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