

Safety data sheet
 according to 1907/2006/EC, Article 31

Printing date: 29.08.2012

Version: 1

Revision: 29.08.2012

SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name:** Trimellitic Anhydride (TMA)

· **CAS Number:**
552-30-7

· **EC number:**
209-008-0

· **Index number:**
607-097-00-4

· **Registration number:**

This substance has (All substances contained in this mixture have) been pre-registered according to regulation (EC) No. 1907/2006 in its current version.

· **1.2 Relevant identified uses of the substance or mixture and uses advised against:**

· **Uses advised against:** -

· **Application of the substance / the preparation:**

Chemicals for synthesis
 Curing agent for epoxy resins
 Dyestuff/Colouring agent
 Paints and varnishes
 Plasticizer

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier/Manufacturer:**

GTS - German Trading Service GmbH for Raw Materials
 Reinbeker Redder 89a
 21031 Hamburg
 Germany

Tel.: +49 40 739115

Fax: +49 40 7387059

· **Email competent person:** sds@kft.de

· **Information department:** See supplier/manufacturer

· **1.4 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

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS08 health hazard

Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS05 corrosion

Eye Dam. 1 H318 Causes serious eye damage.

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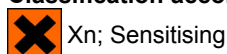
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GHS07

Acute Tox. 4 H332 Harmful if inhaled.
Skin Sens. 1 H317 May cause an allergic skin reaction.
STOT SE 3 H335 May cause respiratory irritation.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn; Sensitising

R42/43: May cause sensitisation by inhalation and skin contact.



Xi; Irritant

R37-41: Irritating to respiratory system. Risk of serious damage to eyes.

Classification system:

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

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 The substance is classified and labelled according to the CLP regulation.

Hazard pictograms



GHS05

GHS07

GHS08

Signal word Danger

Hazard statements

H332 Harmful if inhaled.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.

Precautionary statements

P261 Avoid breathing dust.
P285 In case of inadequate ventilation wear respiratory protection.
P280 Wear protective gloves and eye protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3 Other hazards Aqueous solutions of the substance are acidic.

Results of PBT and vPvB assessment

PBT: Not applicable
vPvB: Not applicable

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SECTION 3: Composition/information on ingredients

- **3.1 Chemical characterization: Substances**
- **CAS No. Description:**
552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride
- **Identification number(s):**
- **EC number:** 209-008-0
- **Index number:** 607-097-00-4

SECTION 4: First aid measures

- **4.1 Description of first aid measures**
- **General information:**
First aid personnel should pay attention to their own safety.
Remove affected persons from 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:**
Protect unharmed eye.
Rinse the eyes with open eyelids for 10 - 15 minutes with water. Then consult an eye specialist immediately.
- **After swallowing:**
Rinse mouth with water.
Spit liquid out again.
Do not induce vomiting.
If vomiting occurs spontaneously:
Hold the head of the vomiting person low with the body in a prone position in order to avoid aspiration.
Call a doctor immediately.
- **4.2 Most important symptoms and effects, both acute and delayed**
Reddened skin
Vesiculation
Extreme irritation of mucous membranes
After inhalation:
Irritation of mucuous membranes
Cough
Drooling nose
Asthma attacks
After swallowing:
Nausea
Vomiting
Diarrhoea
Local irritation symptoms
- **Information for doctor:**
The substance is irritant to the upper respiratory tract and may cause sensitisation to skin and respiratory tract. Acute irritation or bronchial stricture are usually 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.
- **4.3 Indication of any immediate medical attention and special treatment needed**
Symptomatic treatment

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

SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents:**
 CO₂, 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
- **5.2 Special hazards arising from the substance or mixture**
 In case of fire, the following can be released:
 Carbon monoxide (CO)
 Carbon dioxide (CO₂)
- **5.3 Advice for firefighters**
- **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.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**



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.

- **6.2 Environmental precautions:**
 Do not allow product to reach sewage system or any water course.
 Do not allow to penetrate the ground/soil.
- **6.3 Methods and material for containment and cleaning up:**
 Ensure adequate ventilation.
 Avoid any dust formation. Pick up with a tested and approved industrial vacuum cleaner if necessary.
 Make sure to recycle or dispose of in suitable receptacles.
- **6.4 Reference to other sections**
 See Section 7 for information on safe handling
 See Section 8 for information on personal protection equipment.
 See Section 13 for disposal information.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
 Only handle and refill product in closed systems.
 If this is not possible:
 Ensure that suitable extractors are available on processing machines
 Prevent formation of dust.
 Avoid inhalation of dust.
 Restrict the quantity stored at the work place.
 Avoid contact with eyes and skin.

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· **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.

Observe the general rules of industrial fire protection.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **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.

Refer to national regulations for storing hazardous chemicals.

· **Further information about storage conditions:**

Keep receptacle tightly sealed.

Protect from humidity and water.

This product is hygroscopic.

· **Storage class:** 11 Combustible solids

· **7.3 Specific end use(s)** No further relevant information available

SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **8.1 Control parameters**

· **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/m³

Long-term value: 0.04 mg/m³

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· **Additional information:** The lists that were valid during the creation were used as basis.

· **8.2 Exposure controls**

· **Personal protective equipment:**

· **General protective and hygienic measures:**

Keep away from foodstuffs, beverages and feed.

Do not eat or drink while working.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid any contact with eyes and skin.

After skin contact, cleanse skin thoroughly.

Ensure that washing facilities are available at the work place.

After contact with eyes, rinse immediately.

Provide eye bath.

If larger quantities are handled, provide emergency showers.

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Breathing equipment:

In case of unintentional release of substance, exceeding the occupational exposure limit value:



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

Short term filter device:

A P3

Breathing equipment is only to be used in order to handle the residual risk of short term jobs if all other risk minimizing measures have been carried out e.g. retention and/or local exhaust.

Protection of hands:

Chemical resistant gloves

The glove material has to be impermeable and resistant to the product/substance/preparation.

Selection of the glove material in 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 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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

General Information:

Appearance:

Form:	Flakes
Colour:	Whitish
Odour:	Mouldy
Odour threshold:	Not determined

pH-value (21 g/l) at 20°C: 2

Change in condition:

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

Flash point: 227°C (open cup 1atm)

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

Ignition temperature: Not determined

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

Explosion limits:

Lower:	1 Vol %
Upper:	7 Vol %

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· Vapour pressure:	7.6x10 ⁻⁵ Pa
· Density at 20°C:	1.49 g/cm ³
· Solubility in / Miscibility with Water:	Decomposition
· Partition coefficient (n-octanol/water):	0.06 log POW (OECD 117)
· Viscosity:	
· dynamic:	Not applicable
· 9.2 Other information	Soluble in acetone

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications
- **10.3 Possibility of hazardous reactions** No dangerous reactions known
- **10.4 Conditions to avoid** No further relevant information available
- **10.5 Incompatible materials:**
 - Strong acids
 - Strong bases
 - Strong oxidants
 - Water and humidity
- **10.6 Hazardous decomposition products:**
 - No hazardous decomposition products if instructions for storage and handling are followed
- **Additional information:** Sensitive to moisture

SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride

Oral	LD ₅₀	2030 mg/kg (rat/female) (OECD 401)
		male/female 2730 mg/kg bw
		3340 mg/kg (rat/male) (OECD 401)
		male/female 2730 mg/kg bw
Dermal	LD ₅₀	> 2000 mg/kg (rabbit) (OECD 402)
Inhalative	LC ₅₀ /4 h	> 2.33 mg/l (rat) (OECD 203)
	WoE	dust/nose only
		maximum achievable concentration
- **Primary irritant effect:**
- **on the skin:** No irritating effect species: rabbit OECD test 404
- **on the eye:** Strongly irritant with the danger of severe eye injury
- **On respiratory tract:** Irritation of respiratory tract
- **Sensitization:**
 - May cause sensitization by inhalation.
 - May cause sensitization by skin contact.
- **Other information (about experimental toxicology):**
 - Ames-test: negative
 - Chinese Hamster Ovary Cell Mutation Test (HGPRT) - OECD 476: negative

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

Carcinogenicity: no information available
Reproductive toxicity: insufficient data for classification

· **Subacute to chronic toxicity:**

· **STOT-single exposure** Irritation of respiratory tract
· **STOT-repeated exposure:** No classification

· **Aspiration hazard** No classification

· **Additional toxicological information:**

After swallowing: irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**

552-30-7 benzene-1,2,4-tricarboxylic-1,2-anhydride

EC₅₀ 100-500 mg/l (bacteriae) (OECD 209)
3h

EC₅₀/48h (static) > 792 mg/l (Daphnia magna) (OECD 202)

LC₅₀/96h (static) > 957 mg/l (Leuciscus idus) (OECD 203)

NOEC/96h (static) > 739 mg/l (des) (OECD 201)

· **12.2 Persistence and degradability** Easily biodegradable

· **Other information:**

Biological degradation: 77.4% after 28 days
OECD 301 B

· **12.3 Bioaccumulative potential** Due to the distribution coefficient n-octanol/water an accumulation in organisms is not expected.

· **BCF:** 3

· **12.4 Mobility in soil** No further relevant information available

· **Ecotoxicological effects:**

· **Remark:** Harmful effect due to pH-value shift

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous to 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.

· **12.5 Results of PBT and vPvB assessment**

· **PBT:** Not applicable

· **vPvB:** Not applicable

· **12.6 Other adverse effects** No further relevant information available

SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**

· **Recommendation:**

Must be recycled or disposed of according to the regulations. Waste has to be classified according to the European Waste Catalogue based on the identification of the waste generating source.

· **European waste catalogue:**

07 01 99 wastes not otherwise specified

· **Uncleaned packagings:**

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

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SECTION 14: Transport information

· 14.1 UN-Number · ADR, ADN, IMDG, IATA	Void
· 14.2 UN proper shipping name · ADR, ADN, IMDG, IATA	Void
· 14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA · Class	Void
· 14.4 Packing group · ADR, IMDG, IATA	Void
· 14.6 Special precautions for user	Not applicable
· 14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable
· UN "Model Regulation":	-

SECTION 15: Regulatory information

- **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **National regulations**
- **Information about limitation of use:**
Take note of Directive 92/85/EC on the safety and health of pregnant workers at work.
Take note of Directive 94/33/EC on the protection of young people at work.
- **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water
- **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 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 64347 Griesheim
Postfach 1451 64345 Griesheim
Germany

Phone: +49 6155 86829-0 Fax: +49 6155 86829-25

Safety Data Sheet Service: +49 6155 86829-22

· **Contact:** Angelika Torges

· **Abbreviations and acronyms:**

ICAO: International Civil Aviation Organization
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
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

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Sources:

ESIS (European existing Substances Information System)
OECD Screening Information Data Sets (SIDS)
IUCLID-Dossier from ECHA

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