

Trimellitic anhydride

Jiangsu Zhengdan Chemical Industry Co., Ltd.

Issue Date: 27/04/2017
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SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Trimellitic anhydride
Synonyms	Benzene-1,2,4-tricarboxylic acid 1,2-anhydride; 4-Carboxyphthalic Anhydride; 1,2,4-Benzenetricarboxylic acid 1,2-anhydride; Trimellitic acid 1,2-anhydride; TMAN; Benzene-1,2,4-tricarboxylic anhydride; 1,3-dihydro-1,3-dioxo-5-isobenzofurancarboxylic acid; Anhydrotrimellitic acid
Chemical formula	C ₉ H ₄ O ₅
Other means of identification	Not Available
CAS number	552-30-7

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	applied in manufacture of environmentally friendly plasticizers such as TOTM, Polyester resin for powder coating, polyamide-imide resin for insulating varnish (wire enamel) , water-soluble alkyd resin coating, epoxy curing agent, lubricants etc.
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Details of the supplier of the safety data sheet

Registered company name	Jiangsu Zhengdan Chemical Industry Co., Ltd.
Address	International Chemical Industry Park of Zhenjiang New Area, Jiangsu, China Zhenjiang, Jiangsu, P.R. China 212132
Telephone	+86 511 8805 9025
Fax	+86 511 8805 9028
Website	http://www.zhengdanchem.com/index-en.html
Email	jxy@zhengdanchem.com

Emergency telephone number

Association / Organisation	Jiangsu Zhengdan Chemical Industry Co., Ltd.
Emergency telephone numbers	+86 511 8805 9009
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Label elements

GHS label elements	
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SIGNAL WORD DANGER

Hazard statement(s)

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

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Precautionary statement(s) Prevention

P363	Wash contaminated clothing before reuse.
P321	Specific treatment (see... on this label).
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P272	Contaminated work clothing should not be allowed out of the workplace.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P501	Dispose of contents/container to hazardous or special waste collection point.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P304+P341	IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P285	In case of inadequate ventilation wear respiratory protection.
P405	Store locked up
P261	Avoid breathing dust/fume/gas/mist/vapours/spray
P280	Wear protective gloves/protective clothing/eye protection/face protection
P310	Immediately call a POISON CENTER or doctor/physician

Precautionary statement(s) Response

P304+P340	IF INHALED: Remove person to fresh air and keep 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/doctor/physician/first aider
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider
P302+P352	IF ON SKIN: Wash with plenty of water and soap
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P330	Rinse mouth.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised chemical landfill or if organic to high temperature incineration
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name	EINECS No.
552-30-7	>98	Trimellitic anhydride	209-008-0

Mixtures

See section above for composition of Substances

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	In case of contact with eyes, immediately flush eyes with plenty of flowing water for 10 to 15 minutes holding eyelids apart. Seek the attention of an ophthalmologist immediately.
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Skin Contact	When in contact with the skin, clean with soap and water. Change contaminated clothing. In case of skin irritation, consult a physician.
Inhalation	Move to fresh air. If breathing is difficult, give artificial respiration and contact a physician.
Ingestion	Drink two glasses of water. Contact a physician. Never give anything by mouth to an unconscious person.

Indication of any immediate medical attention and special treatment needed

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).

For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- ▶ Establish a patent airway with suction where necessary.
- ▶ Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- ▶ Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- ▶ Monitor and treat, where necessary, for pulmonary oedema.
- ▶ Monitor and treat, where necessary, for shock.
- ▶ Anticipate seizures.
- ▶ **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- ▶ Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- ▶ Positive-pressure ventilation using a bag-valve mask might be of use.
- ▶ Monitor and treat, where necessary, for arrhythmias.
- ▶ Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- ▶ Drug therapy should be considered for pulmonary oedema.
- ▶ Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- ▶ Treat seizures with diazepam.
- ▶ Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.

EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

Water fog, Extinguishing powder, alcohol resistant foam, carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility

Combustible. In case of strong heating: Vapours form explosive mixtures with air. Emits toxic fumes under fire conditions.
In case of fire maybe liberated: Carbon monoxide and carbon dioxide.

Advice for firefighters

Fire Fighting

Wear self-contained breathing apparatus. To avoid contact with skin, keep safety distance and wear suitable protective clothing.

Fire/Explosion Hazard

Trimellitic anhydride dust, when dispersed in air, can be ignited explosively.

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SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid contact with skin and eyes.
Major Spills	<p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ CAUTION: Advise personnel in area. ▶ Alert Emergency Services and tell them location and nature of hazard.
Personal Protective Equipment advice is contained in Section 8 of the MSDS.	

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ Provide adequate ventilation, and local exhaust as needed. Do not breathe dust. Wear protective equipment. Avoid contact with skin and eyes. ▶ In case of strong heating: Vapours form explosive mixtures with air. Keep away from heat sources, sparks and open flames.
Other information	<ul style="list-style-type: none"> ▶ Keep container tightly closed and dry. Provide adequate ventilation. Protect from humidity and water. ▶ KStorage class: 11= Combustible solids.

Conditions for safe storage, including any incompatibilities

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

Suitable container	25kg kraft paper composite bag lined with plastic, 500kg or 1000kg woven bag lined with plastic.. Check all containers are clearly labelled and free from leaks.
Storage	Keep in closed or covered containers when not in use. Store in cool dry place with adequate ventilation. Do not store near heat or open flames.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US ACGIH Threshold Limit Values (TLV)	Trimellitic anhydride	*Trimellitic anhydride	0.04 mg/m ³	Not Available	Not Available	Not Available

EMERGENCY LIMITS


Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
Trimellitic anhydride	Trimellitic anhydride			

Ingredient	Original IDLH	Revised IDLH
Trimellitic anhydride		

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Exposure controls

Appropriate engineering controls	<p>For molten materials: Provide mechanical ventilation; in general such ventilation should be provided at compounding/ converting areas and at fabricating/ filling work stations where the material is heated. Local exhaust ventilation should be used over and in the vicinity of machinery involved in handling the molten material. Keep dry!! Processing temperatures may be well above boiling point of water, so wet or damp material may cause a serious steam explosion if used in unvented equipment.</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Tightly sealed safety glasses according to EN 166. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants.
Skin protection	See Hand protection below

Hands/feet protection	<p>NOTE:</p> <ul style="list-style-type: none"> ▶ Protective gloves according to EN 374. ▶ Glove material: Nitrile rubber-Layer thickness: 0,11 mm. Breakthrough time: >480 min. ▶ Observe glove manufacturer's instructions concerning penetrability and breakthrough time
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ When handling hot or molten liquids, wear trousers or overalls outside of boots, to avoid spills entering boots. ▶ Usually handled as molten liquid which requires worker thermal protection and increases hazard of vapour exposure. ▶ CAUTION: Vapours may be irritating.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

PHTHALIC ANHYDRIDE, UNREGULATED Not Available

Material	CPI

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	P1 Air-line*	- -	PAPR-P1 -
up to 50 x ES	Air-line**	P2	PAPR-P2
up to 100 x ES	-	P3 Air-line*	-
100+ x ES	-	Air-line**	PAPR-P3

* - Negative pressure demand ** - Continuous flow

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

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SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Use may require material be molten. Molten or heated material may be compounded, moulded or extruded.		
Physical state	Divided Solid	Relative density (Water = 1)	At 20 °C, approx. 1,49 g/ml
Odour	Type specific	Partition coefficient n-octanol / water	At 20 °C: 0,06 log P(o/w) Bio-accumulation is not to be expected (log P(o/w) < 1)
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available.
Melting point / freezing point (°C)	165	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	390	Molecular weight (g/mol)	192.13
Flash point (°C)	227	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	0.07	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	0.01	Volatile Component (%vol)	Not available.
Vapour pressure (kPa)	At 20 °C: negligible	Gas group	Not Available
Solubility in water (g/L)	At 20 °C: Decomposition 24,4 g/ml	pH as a solution(1%)	Not available.
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	No data available
Chemical stability	Hygroscopic
Possibility of hazardous reactions	No data available
Conditions to avoid	Protect from excessive heat. In case of strong heating: Vapours form explosive mixtures with air.
Incompatible materials	Violent reaction with: water, acetic acid, strong acid, strong bases
Hazardous decomposition products	In case of fire: Carbon monoxide and carbon dioxide

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Mucous membrane irritation, coughing, shortage of breath. May cause sensitization by inhalation.
Ingestion	Accidental ingestion of the material may be harmful; Animal inhalation studies show a clear correlation between exposure and lung damage.
Skin Contact	May cause sensitization by skin contact
Eye	Strongly irritant. Risk of serious damage to eyes.

Continued...

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Chronic	<p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p>
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Trimellitic anhydride, unregulated	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >23000 mg/kg [1]	No data available
	Inhalation (rat) LC50: >7.4 mg/L4 h [1]	No data available
	Oral (rat) LD50: >2730 mg/kg [1]	No data available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Trimellitic anhydride	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.</p>
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Acute Toxicity		Carcinogenicity	
Skin Irritation/Corrosion		Reproductivity	
Serious Eye Damage/Irritation		STOT - Single Exposure	
Respiratory or Skin sensitisation		STOT - Repeated Exposure	
Mutagenicity		Aspiration Hazard	

Legend:  – Data required to make classification available
 – Data available but does not fill the criteria for classification
 – Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
Trimellitic anhydride	No data available	No data available

Bioaccumulative potential

Ingredient	Bioaccumulation
Trimellitic anhydride	No data available

Mobility in soil

Ingredient	Mobility
Trimellitic anhydride	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods	<p>according to applicable local, state, and federal regulations</p> <p>► Waste disposal according to official state regulations.</p> <p>Handle contaminated packaging in the same way as the substance itself. Cleaned containers may be recycled.</p>
► Incinerate as hazardous waste	

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Trimellitic anhydride**SECTION 14 TRANSPORT INFORMATION****Labels Required**

Marine Pollutant	Unknown
HAZCHEM	Not Applicable

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture**

Trimellitic anhydride (552-30-7) is found on the following regulatory lists	"China Permissible Exposure Limits"
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SECTION 16 OTHER INFORMATION**Other information**

Further remarks

Reason of change: Changes Legal Entity Literature:

Group that issues data sheet

Contact person: see chapter 1, department responsible for information.

The information in this data sheet has been established to our best knowledge and was up-to-date at time of revision. It does not represent a guarantee for the properties of the product described in terms of the legal warranty regulations.

end of SDS