

Safety data sheet for chemical products, MSDS

Product name: TPO

According to the GB/T 16483-2008, GB/T 17519-2013

Initial date of preparation: 2020/9/12

The revision date: 2026/1/1

Section 1 - Chemical and corporate identity

Product's information

Chemical name: 2,4,6-Trimethylbenzoyldiphenylphosphine oxide

Identified uses: Additives, UV Photoinitiator.

Uses Advised against: Not for family or other use.

Supplier's information

Supplier: Guangzhou BAWO New Material Science Co., Ltd.

Tel: 86-020-31074363

Fax: 86-020-31074309

Emergency contact number: 86-020-31074363

Section 2 - Hazard Identification

Emergency Overview:

Yellow crystals. May cause an allergic skin reaction. May damage fertility or the unborn child (testicular atrophy (fertility), bent limb bones (unborn fetus)). Toxic to aquatic life. Toxic to aquatic life with long-lasting effects.

GHS of the substance or mixture

Skin sensitization Category 1B

Reproductive toxicity Category 1B

Hazardous to the aquatic environment - Long-term hazard Category 2

GHS label elements, hazard statements and precautionary statement



Label elements:

Signal word: Danger

Hazard statements

H317 May cause an allergic skin reaction

H360 May damage fertility or the unborn child (Specific effect: testes atrophy (fertility), bent limb bones (unborn child))



H411 Toxic to aquatic life with long lasting effects

Precautionary statements

Prevention

- P203 Obtain, read and follow all safety instructions before use
- P261 Avoid breathing dust/fume/gas/mist/vapours/spray
- P272 Contaminated work clothing should not be allowed out of the workplace
- P273 Avoid release to the environment
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection

Response

- P302+P352 If on skin: Wash with plenty of water and soap
- P318 If exposed or concerned, get medical advice
- P321 Specific treatment
- P333+P317 If skin irritation or rash occurs: get medical help
- P362+P364 Take off contaminated clothing and wash it before reuse
- P391 Collect spillage.Storage

Storage

- P405 Store locked up

Disposal

- P501 Dispose of contents/ container to hazardous or special waste collection point, in accordance with local, regional and/or international regulation.

Other hazards: No information available

Section 3 - Composition/Composition Information

Chemical characterization: Substance

Substance Name	Concentration	CAS No.	EC NO.
2,4,6-Trimethylbenzoyldiphenylphosphine oxide	≥ 99.0	75980-60-8	278-355-8

Section 4 - First aid Measures

Recommended procedures:

Skin contact: Take off the contaminated clothes and shoes immediately and rinse the skin with a lot of soap water. If you feel the irritation or the irritation continues, you should seek medical treatment.

Eye contact: If liquid is accidentally splashed into the eyes, rinse immediately with plenty of water, and then go to the hospital ophthalmology department for medical treatment promptly.

Inhalation: Immediately move to fresh air, rest; maintain a semi-upright position, loosen clothing to facilitate breathing. If breathing is difficult, administer artificial respiration immediately. In case of severe poisoning,



seek medical help at a hospital without delay.

Eating by mistake: Do not induce vomiting under any circumstances, as improper breathing can cause harm.

Rinse the mouth thoroughly with clean water or seek immediate medical treatment at a hospital.

Most important symptoms and effects, both acute and delayed: Refer to section 11.

Indication of any immediate medical attention and special treatment needed:

1. Treat symptomatically, no known specific antidote.
2. Symptoms may be delayed.

Section 5 - Firefighting Measures

Extinguishing media:

Suitable extinguishing media: 1. Dry powder 2. Foam

Unsuitable extinguishing media: Carbon dioxide

Specific hazards arising from the chemical:

1. It is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
2. Combustion of vapor and liquid may produce carbon monoxide (CO), carbon dioxide (CO₂), phosphorous compounds. and other hazardous gases.
3. Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).

Special protective equipment and precaution for fire-fighters:

1. Alert Fire Brigade and tell them location and nature of hazard.
2. Wear self-contained breathing apparatus for firefighting if necessary.
3. Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used.
4. In case of fire in the surroundings, keep containers cool by spraying with water.
5. Eliminate all ignition sources if safe to do so.
6. Uninvolved persons should evacuate to a safe place.

Section 6 - Leakage Emergency Treatment

Personal protective measures, protective equipment and emergency procedures:

1. Use personal protective equipment.
2. Remove all sources of ignition. Ensure adequate ventilation. Take precautionary measures against static discharges.



3. For personal protection refer to section 8.
4. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak. Use personal protective equipment. Avoid breathing vapors and contacting with skin and eyes.

Environmental Protection Measures:

Prevent entry into sewers, drainage systems, or soil.

Methods and materials for containment and cleaning up:

1. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
2. Keep in suitable, closed containers for disposal

Section 7 - Operational Disposal and Storage**Safety operation precautions:**

1. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.
2. Keep away from heat/sparks/open flames/ hot surfaces.
3. For precautions see section 2.

Conditions for safe storage, including any incompatibilities:

1. Keep containers tightly closed in a dry, cool and well-ventilated place.
2. Keep away from heat/sparks/open flames/ hot surfaces.
3. Store away from incompatible materials such as oxidizing agents and other incompatible materials.
4. Store away from foodstuff containers.

Section 8 - Contact Control/Personal Protection**Control parameters:**

Occupational exposure limit values: No information available.

Biological limit values: No information available.

Appropriate Engineering Controls:

1. Handle in accordance with good industrial hygiene and safety practice.
2. Ensure adequate ventilation, especially in confined areas.
3. Ensure that eyewash stations and safety showers are close to the workstation location .

Individual protection measures:

General requirement:





佩戴防护眼镜

Wear Eye Protection



穿戴防护服

Wear Protective Clothing



佩戴呼吸器

Wear Respirator



穿戴安全鞋

Wear Safety Footwear



佩戴面罩

Wear Face Shield



穿戴防护手套

Wear Protective Gloves

Eye/face protection: Tightly fitting safety goggles (approved by EN166(EU) or NIOSH(US)).

Skin protection: Protective gloves (such as butyl rubber), approved by EN 374(EU).

Respiratory protection: Suitable respiratory protection for lower concentrations or short-term effect: Particle filters with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2).

Body protection: Wear fire/flammable resistant/retardant clothing and anti-static boots.

Thermal protection: Wear protective clothes if necessary.

Section 9 - The characteristics of physical and chemical

Appearance:	Yellow crystal
Odor:	No data available
Odor threshold:	No data available
Melting point/freezing point:	91.0 - 95.0 °C
Initial boiling point and boiling range:	> 200 °C
Flammability(solid, gas):	Non flammable
Upper/lower explosive limits:	No data available
Flash point:	No data available
Auto-ignition temperature:	No self-heating detected up to 400 °C
Decomposition temperature:	>200 °C
pH:	No data available
Viscosity:	No data available
Water Solubility:	11.9 mg/l at 20 °C (Column elution method); 3.4 mg/l at 20 °C (Flask method)
n-octanol/water partition coefficient: Log Kow (Pow):	3.1 at 23 °C and pH = 6.4
Vapor pressure:	0 Pa at 25°C
Relative density:	1.218 at 20°C
Vapor density:	No data available
Evaporation rate:	No data available
Molecular formula:	C22H21O2P
Molecular weight (g/mol):	348.375



Section 10 - Stability and Reactivity

Chemical reactivity: No hazardous reactions if stored and handled as prescribed/indicated. Formation of flammable gases: Remarks: Forms no flammable gases in the presence of water.

Chemical stability: The product is stable if stored and handled as prescribed/indicated.

Possibility of dangerous reactions: In spite of the dedusting carried out for reasons of industrial health the product resp. The fine dust of the product is capable of dust explosion.

Conditions to avoid: Incompatible materials. Avoid dust formation. Avoid deposition of dust. Avoid sources of ignition.

Incompatible materials: Substances to avoid: strong acids, strong bases, strong oxidizing agents.

Hazardous decomposition products: No hazardous decomposition products if stored and handled as prescribed/indicated. In case of fire may release toxic gases/vapours, e.g. carbbon monoxide (CO), carbon dioxide (CO₂), phosphorous compounds.

Section 11 - Toxicological Data

Acute toxicity:

LD₅₀(oral,Rat): >5000 mg/kg

LD₅₀(dermal,Rat) >2000 mg/kg

LC₅₀(inhalation,Rat): No data available

Skin corrosion/irritation: Not classified

Serious eye damage/irritation: Not classified

Respiratory or skin sensitization: May cause an allergic skin reaction.

Germ cell mutagenicity: Not classified

Carcinogenicity IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity: May damage fertility or the unborn child (Specific effect: testes atrophy (fertility), bent limb bones (unborn child)).

STOT-single exposure: Not classified

STOT-repeated exposure: Not classified

Aspiration hazard: Not classified

Section 12 - Ecological Data

Acute (short-term) toxicity:

LC₅₀(96h, Fish): 1.4 mg/L

EC₅₀(48h, Crustacea): 3.53 mg/L



EC50(72h, Algae/aquatic plants): >3.01 mg/L

Chronic (long-term) toxicity:

NOEC(Fish): Not available

NOEC(Crustacea): Not available

EC10(Algae/aquatic plants,72h): 1.56 mg/L

Persistence and degradability: The registered substance is not readily biodegradable (0% at 28 days), and has a half-life (first order) in freshwater of 16.8 days.

Bioaccumulative potential: Based on the measured BCF values, a significant bioaccumulation potential is not to be expected.

Mobility in soil: Koc at 20 °C: 784.8. Based on the low log octanol water partition coefficient, the substance can be expected to have a low potential for adsorption.

PBT and vPvB assessment results: The substance is not considered to be PBT / vPvB.

Other adverse effects : Toxic to aquatic life with long lasting effects.

Section 13 - Disposal of Waste

Disposal method:

Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Dispose of in accordance with local regulations.

Empty containers or liners may retain some product residues.

Empty containers should be taken to an approved waste handling site for recycling or disposal.

Since emptied containers may retain product residue, follow label warnings even after container is emptied.

Section 14 - Transportation Information

	Land transport (ADR/RID)	Sea transport (IMDG)	Air transport (ICAO/IATA)
UN number	3077	3077	3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S. (Diphenyl(2,4,6-trimethyl benzoyl)phosphine oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLI, N.O.S.(Diphenyl(2,4,6-trim ethyl benzoyl)phosphine oxide)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S. (Diphenyl(2,4,6-trimethy lbenzoyl)phosphine oxide)
Transport hazard class(es)	9	9	9
Packing group, if applicable	III	III	III
Environmental hazards	Marine pollutant: YES	Marine pollutant: YES	Marine pollutant: YES
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to IMO instruments	IBC08	IBC08	IBC08



Section 15 - Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

International chemical inventory:

EINECS/ELINCS/NLP: Listed

TSCA: Listed

DSL: Listed

IECSC: Listed

NZLoC: Listed

PICCS: Listed

KECI: Listed

ENCS: Listed

AIIC: Listed

Section 16 - Other information

Write and edit information:

The safety technical specifications have been revised in 16 content formats with reference to GB/T 17519-2013 / chemical safety technical specifications.

The revision date: 2026/1/1

Important disclaimer:

The data of the company is currently known data, according to the product under normal use, list must pay attention to matters, suggest the user to enable before, should read this data, help to the safe use and correct waste management. Please contact business technical staff if you have any doubts. But this data does not ensure that extended to processed products, whether have you made with materials processing, the user should be aimed at its product testing or certification to fully comply with relevant laws and regulations and requirements of the client, especially special purposes, such as the application of medicine, in case of any dispute and should not belong to the company's liability.

Data maker: Guangzhou BAWO New Material Science Co.,Ltd

