

# Chemical Safety Data Sheet MSDS / SDS

## Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

Revision Date:2024-12-21 Revision Number:1

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

#### Product identifier

Product name : Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide  
CBnumber : CB9458631  
CAS : 75980-60-8  
EINECS Number : 278-355-8  
Synonyms : Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide,photoinitiator tpo

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

Relevant identified uses : For R&D use only. Not for medicinal, household or other use.  
Uses advised against : none

#### Company Identification

Company : Chemicalbook  
Address : Building 1, Huihuang International, Shangdi 10th Street, Haidian District, Beijing  
Telephone : 400-158-6606

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### SECTION 2: Hazards identification

#### GHS Label elements, including precautionary statements

Symbol(GHS)



Signal word

Warning

#### Precautionary statements

P501 Dispose of contents/container to....  
P405 Store locked up.  
P391 Collect spillage. Hazardous to the aquatic environment  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.  
P273 Avoid release to the environment.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
P202 Do not handle until all safety precautions have been read and understood.  
P201 Obtain special instructions before use.

## Hazard statements

H411 Toxic to aquatic life with long lasting effects

H361 Suspected of damaging fertility or the unborn child

H317 May cause an allergic skin reaction

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## SECTION 3: Composition/information on ingredients

### Substance

Product name	: Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
Synonyms	: Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide,photoinitiator tpo
CAS	: 75980-60-8
EC number	: 278-355-8
MF	: C22H21O2P
MW	: 348.37

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## SECTION 4: First aid measures

### Description of first aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air. Call in physician.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

### Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### Indication of any immediate medical attention and special treatment needed

No data available

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## SECTION 5: Firefighting measures

### Extinguishing media

#### Suitable extinguishing media

Water Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

### **Special hazards arising from the substance or mixture**

Carbon oxides Oxides of phosphorus Combustible.

Development of hazardous combustion gases or vapours possible in the event of fire.

### **Advice for firefighters**

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### **Further information**

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## **SECTION 6: Accidental release measures**

### **Personal precautions, protective equipment and emergency procedures**

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

### **Environmental precautions**

Do not let product enter drains.

### **Methods and materials for containment and cleaning up**

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

### **Reference to other sections**

For disposal see section 13.

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## **SECTION 7: Handling and storage**

### **Precautions for safe handling**

For precautions see section 2.2.

### **Conditions for safe storage, including any incompatibilities**

### **Storage conditions**

Tightly closed. Dry.

Light sensitive.

### **Specific end use(s)**

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### control parameter

#### Hazard composition and occupational exposure limits

Does not contain substances with occupational exposure limits.

#### Exposure controls

##### Personal protective equipment

###### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

###### Body Protection

protective clothing

###### Respiratory protection

required when dusts are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type P3

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

###### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### Information on basic physicochemical properties

Appearance	solid
Odour	weak characteristic odour
Odour Threshold	Do not attempt to smell the product as it is hazardous. d) pH 6,4 - 6,9 at 20 °C Melting point/freezing point Initial boiling point and boiling range Melting point/range: 88 - 92 °C - lit. No data available Flash point Not applicable/Not applicable Evaporation rate No data available Flammability (solid, gas) Upper/lower flammability or explosive limits No data available No data available Vapour pressure < 0,01 hPa at 25 °C Vapour density No data available Relative density 1,218 at 20 °C - OECD Test Guideline 109 Water solubility ca.0,011 g/l at 20 °C - OECD Test Guideline 105 Partition coefficient: n-octanol/water Autoignition temperature Decomposition temperature log Pow: 3,1 at 23 °C - Bioaccumulation is not expected. does not ignite No data available Viscosity Viscosity, kinematic: No data available Viscosity, dynamic: No data available Explosive properties No data available Oxidizing properties No data available
Melting point/freezing point	Melting point/range: 88 - 92 °C - lit.

Initial boiling point and boiling range	88-92 °C(lit.)
Flash point	Not applicableNot applicable
Evaporation rate	>230 °F
Flammability (solid, gas)	No data available
Upper/lower flammability or explosive limits	No data available
Vapour pressure	< 0,01 hPa at 25 °C
Vapour density	No data available
Relative density	1,218 at 20 °C - OECD Test Guideline 109
Water solubility	ca.0,011 g/l at 20 °C - OECD Test Guideline 105
Partition coefficient: n-octanol/water	log Pow: 3,1 at 23 °C - Bioaccumulation is not expected.
Autoignition temperature	does not ignite
Decomposition temperature	No data available
Viscosity	Viscosity, kinematic: No data available Viscosity, dynamic: No data available
Explosive properties	No data available
Oxidizing properties	No data available
$\lambda_{\max}$	400nm(DMF)(lit.)

### Other safety information

No data available

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## SECTION 10: Stability and reactivity

### Reactivity

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions

No data available

### Conditions to avoid

no information available

### Incompatible materials

Strong oxidizing agents

### Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

## Information on toxicological effects

### Acute toxicity

LD50 Oral - Rat - male and female - > 5.000 mg/kg (OECD Test Guideline 401)

Inhalation

LD50 Dermal Dermal - Rat - male and female - > 2.000 mg/kg (OECD Test Guideline 402)

### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h Remarks: (ECHA)

### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation (Draize Test)

### Respiratory or skin sensitization

(OECD Test Guideline 429)

### Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration. Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473 Result: negative

Test Type: In vitro mammalian cell gene mutation test Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471

Result: negative

### Carcinogenicity

No data available

### Reproductive toxicity

Suspected of damaging fertility.

### Specific target organ toxicity - single exposure

No data available

### Specific target organ toxicity - repeated exposure

No data available

### Aspiration hazard

No data available

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## SECTION 12: Ecological information

### Toxicity

#### Toxicity to fish

semi-static test LC50 - Oryzias latipes (Orange-red killifish) - 6,53 mg/l - 48 h

Remarks: (ECHA)

### **Toxicity to daphnia and other aquatic invertebrates**

static test EC50 - Daphnia magna (Water flea) - 3,53 mg/l - 48 h (OECD Test Guideline 202)

### **Toxicity to algae**

static test EC10 - Pseudokirchneriella subcapitata (green algae) - 1,56 mg/l - 72 h

(OECD Test Guideline 201)

static test EC50 - Pseudokirchneriella subcapitata (green algae) - > 2,01 mg/l - 72 h

(OECD Test Guideline 201)

### **Toxicity to bacteria**

static test EC50 - activated sludge - > 1.000 mg/l - 3 h (OECD Test Guideline 209)

Remarks: (above the solubility limit in the test medium)

### **Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d

Result: 0 - 10 % - Not readily biodegradable. (OECD Test Guideline 301F)

### **Bioaccumulative potential**

Bioaccumulation Cyprinus carpio (Carp) - 56 d

at 25 °C(Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

Bioconcentration factor (BCF): 23 - 55 Remarks: (External MSDS)

### **Mobility in soil**

No data available

### **Results of PBT and vPvB assessment**

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### **Other adverse effects**

No data available

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## SECTION 13: Disposal considerations

### **Waste treatment methods**

### **Product**

See [www.retrologistik.com](http://www.retrologistik.com) for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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## SECTION 14: Transport information

## UN number

ADR/RID: 3077 IMDG: 3077 IATA: 3077

## UN proper shipping name

ADR/RID: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

IMDG: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

IATA: Environmentally hazardous substance, solid, n.o.s. trimethylbenzoyl)phosphine oxide)

(Diphenyl(2,4,6-

14.3 Transport hazard class(es)

ADR/RID: 9 IMDG: 9

IATA: 9

Packaging group

14.4

ADR/RID: III IMDG: III

IATA: III

Environmental hazards

14.5

ADR/RID: yes IMDG Marine pollutant: yes

IATA: yes

14.6 Special precautions for user

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids. Packages smaller than or equal to 5 kg / L , not dangerous goods of Class 9

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## SECTION 15: Regulatory information

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

#### Regulations on the Safety Management of Hazardous Chemicals

China Catalog of Hazardous chemicals 2015:Not Listed. website: <https://www.mem.gov.cn/>

#### Measures for Environmental Management of New Chemical Substances

Vietnam National Chemical Inventory:Listed. website: <https://chemicaldata.gov.vn/>

United States Toxic Substances Control Act (TSCA) Inventory:Listed. website: <https://www.epa.gov/>

Philippines Inventory of Chemicals and Chemical Substances (PICCS):Listed. website: <https://emb.gov.ph/>

New Zealand Inventory of Chemicals (NZIoC):Listed. website: <https://www.epa.govt.nz/>

Korea Existing Chemicals List (KECL):Listed. website: <http://ncis.nier.go.kr>

European Inventory of Existing Commercial Chemical Substances (EINECS):Listed. website: <https://echa.europa.eu/>

EC Inventory:Listed.

Chinese Chemical Inventory of Existing Chemical Substances (China IECSC):Listed. website: <https://www.mee.gov.cn/>

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## SECTION 16: Other information

### Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

CAS: Chemical Abstracts Service

EC50: Effective Concentration 50%



IATA: International Air Transportation Association

IMDG: International Maritime Dangerous Goods

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

STEL: Short term exposure limit

TWA: Time Weighted Average

## References

- 【1】 CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- 【2】 ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- 【3】 ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>
- 【4】 eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:  
[http://www.echemportal.org/echemportal/index?pageID=0&request\\_locale=en](http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en)
- 【5】 ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- 【6】 Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- 【7】 HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- 【8】 IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- 【9】 IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- 【10】 Sigma-Aldrich, website: <https://www.sigmaaldrich.com/>

### Disclaimer:

The information in this MSDS is only applicable to the specified product, unless otherwise specified, it is not applicable to the mixture of this product and other substances. This MSDS only provides information on the safety of the product for those who have received the appropriate professional training for the user of the product. Users of this MSDS must make independent judgments on the applicability of this SDS. The authors of this MSDS will not be held responsible for any harm caused by the use of this MSDS.