

## SAFETY DATA SHEET

Version 6.2  
Revision Date 04/29/2021  
Print Date 02/05/2022

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : Phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide

Product Number : 511447  
Brand : Aldrich  
Index-No. : 015-189-00-5  
CAS-No. : 162881-26-7

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

Identified uses : Laboratory chemicals, Synthesis of substances

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

Company : Sigma-Aldrich Inc.  
3050 SPRUCE ST  
ST. LOUIS MO 63103  
UNITED STATES

Telephone : +1 314 771-5765  
Fax : +1 800 325-5052

**1.4 Emergency telephone**

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

**SECTION 2: Hazards identification****2.1 Classification of the substance or mixture****GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)**

Skin sensitization (Category 1), H317

Long-term (chronic) aquatic hazard (Category 4), H413

For the full text of the H-Statements mentioned in this Section, see Section 16.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word

Warning

|                            |                                                                      |
|----------------------------|----------------------------------------------------------------------|
| Hazard statement(s)        |                                                                      |
| H317                       | May cause an allergic skin reaction.                                 |
| H413                       | May cause long lasting harmful effects to aquatic life.              |
| Precautionary statement(s) |                                                                      |
| P261                       | Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.                |
| P272                       | Contaminated work clothing must not be allowed out of the workplace. |
| P273                       | Avoid release to the environment.                                    |
| P280                       | Wear protective gloves.                                              |
| P302 + P352                | IF ON SKIN: Wash with plenty of soap and water.                      |
| P333 + P313                | If skin irritation or rash occurs: Get medical advice/ attention.    |
| P363                       | Wash contaminated clothing before reuse.                             |
| P501                       | Dispose of contents/ container to an approved waste disposal plant.  |

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

|                  |                                                    |
|------------------|----------------------------------------------------|
| Synonyms         | : Bisacylphosphine oxides<br>BAPOs                 |
| Formula          | : C <sub>26</sub> H <sub>27</sub> O <sub>3</sub> P |
| Molecular weight | : 418.46 g/mol                                     |
| CAS-No.          | : 162881-26-7                                      |
| EC-No.           | : 423-340-5                                        |
| Index-No.        | : 015-189-00-5                                     |

| Component                                      | Classification                              | Concentration |
|------------------------------------------------|---------------------------------------------|---------------|
| <b>(Phenylphosphoryl)bis(mesitylmethanone)</b> |                                             |               |
|                                                | Skin Sens. 1; Aquatic Chronic 4; H317, H413 | <= 100 %      |

For the full text of the H-Statements mentioned in this Section, see Section 16.

## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

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

#### If inhaled

After inhalation: fresh air.

#### 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. Remove contact lenses.

**If swallowed**

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

**4.2 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

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**SECTION 5: Firefighting measures****5.1 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.

**5.2 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.

Risk of dust explosion.

**5.3 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.

**5.4 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****6.1 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.

**6.2 Environmental precautions**

Do not let product enter drains.

**6.3 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.

**6.4 Reference to other sections**

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

For precautions see section 2.2.

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

#### Storage conditions

Tightly closed. Dry.

Storage class (TRGS 510): 11: Combustible Solids

### 7.3 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

### 8.1 Control parameters

#### Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

### 8.2 Exposure controls

#### Appropriate engineering controls

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

#### 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.

##### Control of environmental exposure

Do not let product enter drains.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |                                 |                                                         |
|---------------------------------|---------------------------------------------------------|
| a) Appearance                   | Form: powder<br>Color: yellow                           |
| b) Odor                         | No data available                                       |
| c) Odor Threshold               | No data available                                       |
| d) pH                           | No data available                                       |
| e) Melting point/freezing point | Melting point/range: 131 - 135 °C (268 - 275 °F) - lit. |

Aldrich - 511447

Page 4 of 9

|    |                                              |                                                                                     |
|----|----------------------------------------------|-------------------------------------------------------------------------------------|
| f) | Initial boiling point and boiling range      | No data available                                                                   |
| g) | Flash point                                  | No data available                                                                   |
| h) | Evaporation rate                             | No data available                                                                   |
| i) | Flammability (solid, gas)                    | No data available                                                                   |
| j) | Upper/lower flammability or explosive limits | No data available                                                                   |
| k) | Vapor pressure                               | < 0.1 hPa at 20 °C (68 °F) - OECD Test Guideline 104                                |
| l) | Vapor density                                | No data available                                                                   |
| m) | Relative density                             | No data available                                                                   |
| n) | Water solubility                             | 0.0001 g/l at 20 °C (68 °F) - Regulation (EC) No. 440/2008, Annex, A.6 - insoluble  |
| o) | Partition coefficient: n-octanol/water       | log Pow: 5.8 at 22 °C (72 °F) - OECD Test Guideline 117 - Potential bioaccumulation |
| p) | Autoignition temperature                     | does not ignite                                                                     |
| q) | Decomposition temperature                    | No data available                                                                   |
| r) | Viscosity                                    | No data available                                                                   |
| s) | Explosive properties                         | No data available                                                                   |
| t) | Oxidizing properties                         | No data available                                                                   |

## 9.2 Other safety information

Surface tension 70.7 - 71.4 mN/m at 0.1g/l at 20 °C (68 °F) - Surface tension

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## SECTION 10: Stability and reactivity

### 10.1 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.

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

no information available

### 10.5 Incompatible materials

Oxidizing agents, Strong acids, Strong bases

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg  
(OECD Test Guideline 402)  
No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h  
(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation - 72 h  
(OECD Test Guideline 405)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

#### Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

#### Carcinogenicity

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

- NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
- OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 28 Days - NOAEL (No observed adverse effect level) - 1,000 mg/kg  
Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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**SECTION 12: Ecological information**

**12.1 Toxicity**

|                                                     |                                                                                                          |
|-----------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| Toxicity to fish                                    | semi-static test LC50 - Danio rerio (zebra fish) - > 0.09 mg/l - 96 h (OECD Test Guideline 203)          |
| Toxicity to daphnia and other aquatic invertebrates | static test EC50 - Daphnia magna (Water flea) - > 1.17 mg/l - 48 h (OECD Test Guideline 202)             |
| Toxicity to algae                                   | static test ErC50 - Desmodesmus subspicatus (green algae) - > 0.26 mg/l - 72 h (OECD Test Guideline 201) |
| Toxicity to bacteria                                | static test EC50 - activated sludge - > 100 mg/l - 3 h (OECD Test Guideline 209)                         |

**12.2 Persistence and degradability**

|                  |                                                                                                |
|------------------|------------------------------------------------------------------------------------------------|
| Biodegradability | aerobic - Exposure time 28 d<br>Result: 1 % - Not biodegradable.<br>(OECD Test Guideline 301B) |
|------------------|------------------------------------------------------------------------------------------------|

**12.3 Bioaccumulative potential**

|                 |                                                                                                                                |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|
| Bioaccumulation | Cyprinus carpio (Carp) - 28 d<br>at 24.3 °C((Phenylphosphoryl)bis(mesitylmethanone))<br><br>Bioconcentration factor (BCF): < 5 |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------|

Aldrich - 511447

Page 7 of 9

#### **12.4 Mobility in soil**

No data available

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

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

#### **12.6 Other adverse effects**

No data available

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### **SECTION 13: Disposal considerations**

#### **13.1 Waste treatment methods**

##### **Product**

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. 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**

#### **DOT (US)**

Not dangerous goods

#### **IMDG**

Not dangerous goods

#### **IATA**

Not dangerous goods

#### **Further information**

Not classified as dangerous in the meaning of transport regulations.

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### **SECTION 15: Regulatory information**

#### **SARA 302 Components**

This material does not contain any components with a section 302 EHS TPQ.

#### **SARA 313 Components**

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### **SARA 311/312 Hazards**

No SARA Hazards

#### **Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

(Phenylphosphoryl)bis(mesitylmethanone)

CAS-No.  
162881-26-7

Revision Date

**New Jersey Right To Know Components**

(Phenylphosphoryl)bis(mesitylmethanone)

CAS-No.  
162881-26-7

Revision Date

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**SECTION 16: Other information**

**Further information**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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