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

1.1 Product identifiers

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

Product Number: 415952
Brand: Aldrich
Index-No.: 015-203-00-X
CAS-No.: 75980-60-8

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 Street
ST. LOUIS MO  63103
UNITED STATES

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

1.4 Emergency telephone number

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 sensitisation (Category 1), H317
Reproductive toxicity (Category 2), H361
Short-term (acute) aquatic hazard (Category 2), H401
Long-term (chronic) aquatic hazard (Category 2), H411

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.
H361  Suspected of damaging fertility or the unborn child.
H411  Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201  Obtain special instructions before use.
P202  Do not handle until all safety precautions have been read and understood.
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.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P363  Wash contaminated clothing before reuse.
P391  Collect spillage.
P405  Store locked up.
P501  Dispose of contents/ container to an approved waste disposal plant.

P273  Avoid release to the environment.
P280  Wear protective gloves/ protective clothing/ eye protection/ face protection.
P302 + P352  IF ON SKIN: Wash with plenty of soap and water.
P308 + P313  IF exposed or concerned: Get medical advice/ attention.
P333 + P313  If skin irritation or rash occurs: Get medical advice/ attention.
P363  Wash contaminated clothing before reuse.
P391  Collect spillage.
P405  Store locked up.
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

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</td>
<td>Skin Sens. 1; Repr. 2; Aquatic Acute 2; Aquatic Chronic 2; H317, H361, H401, H411</td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

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
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. 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

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Oxides of phosphorus

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
6.3 **Methods and materials for containment and cleaning up**
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place. Light sensitive.
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

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

- **Components with workplace control parameters**
  Contains no substances with occupational exposure limit values.
  Hazardous components without workplace control parameters

8.2 **Exposure controls**

- **Appropriate engineering controls**
  Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

- **Personal protective equipment**
  **Eye/face protection**
  Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

  **Skin protection**
  Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

  Full contact
  Material: Nitrile rubber
  Minimum layer thickness: 0.11 mm
  Break through time: 480 min
Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

**Body Protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

---

**SECTION 9: Physical and chemical properties**

**9.1 Information on basic physical and chemical properties**

| a) Appearance | Form: powder  
|              | Colour: yellow |
| b) Odour     | No data available |
| c) Odour Threshold | No data available |
| d) pH        | No data available |
| e) Melting point/freezing point | Melting point/range: 88 - 92 °C (190 - 198 °F) - lit. |
| f) Initial boiling point and boiling range | > 200 °C > 392 °F - dec. |
| g) Flash point | ()No data available |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or | No data available |
### Explosive properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Water solubility</td>
<td>0.0001 g/l - OECD Test Guideline 105 - slightly soluble</td>
</tr>
<tr>
<td>Partition coefficient:</td>
<td>log Pow: 3.1 at 23 °C (73 °F)</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 400 °C (&gt; 752 °F) at 1,013.25 hPa</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available</td>
</tr>
</tbody>
</table>

### Other safety information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulk density</td>
<td>530 kg/m³</td>
</tr>
</tbody>
</table>

### SECTION 10: Stability and reactivity

#### 10.1 Reactivity

No data available

#### 10.2 Chemical stability

Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

No data available

#### 10.4 Conditions to avoid

No data available

#### 10.5 Incompatible materials

Strong oxidizing agents

#### 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Oxides of phosphorus

Other decomposition products - No data available

In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral - Rat - male and female - > 5,000 mg/kg
(OECD Test Guideline 401)
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 sensitisation**
Local lymph node assay (LLNA) - Mouse
Result: positive
(OECD Test Guideline 429)

**Germ cell mutagenicity**
Mutagenicity (mammal cell test): chromosome aberration.
Result: negative
In vitro mammalian cell gene mutation test
Result: negative
Ames test
Escherichia coli/Salmonella typhimurium
Result: negative

**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.
NTP: No component 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**
Suspected of damaging the unborn child.
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

**Additional Information**
RTECS: Not available
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>semi-static LC50</td>
<td>Oryzias latipes (Orange-red killifish)</td>
<td>6.53 mg/l - 48 h</td>
<td>(ECHA)</td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test EC50</td>
<td>Daphnia magna (Water flea)</td>
<td>3.53 mg/l - 48 h</td>
<td>(OECD Test Guideline 202)</td>
</tr>
</tbody>
</table>

Toxicity to algae

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test EC10</td>
<td>Pseudokirchneriella subcapitata (green algae)</td>
<td>1.56 mg/l - 72 h</td>
<td>(OECD Test Guideline 201)</td>
</tr>
<tr>
<td>static test EC50</td>
<td>Pseudokirchneriella subcapitata (green algae)</td>
<td>&gt; 2.01 mg/l - 72 h</td>
<td>(OECD Test Guideline 201)</td>
</tr>
</tbody>
</table>

Toxicity to bacteria

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Species</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>static test EC50</td>
<td>activated sludge</td>
<td>&gt; 1,000 mg/l - 3 h</td>
<td>(above the solubility limit in the test medium)</td>
</tr>
</tbody>
</table>

**12.2 Persistence and degradability**

Biodegradability

<table>
<thead>
<tr>
<th>Method</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>aerobic</td>
<td>Exposure time 28 d</td>
<td>0 - 10 % - Not readily biodegradable. (OECD Test Guideline 301F)</td>
</tr>
</tbody>
</table>

**12.3 Bioaccumulative potential**

Bioaccumulation

<table>
<thead>
<tr>
<th>Species</th>
<th>Duration</th>
<th>Temperature</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyprinus carpio (Carp)</td>
<td>56 d</td>
<td>25 °C</td>
<td>(Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)</td>
</tr>
</tbody>
</table>

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

**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**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.
SECTION 13: Disposal considerations

13.1 Waste treatment methods

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

**Contaminated packaging**
Dispose of as unused product.

SECTION 14: Transport information

**DOT (US)**
Not dangerous goods

**IMDG**
UN number: 3077  Class: 9  Packing group: III  EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)
Marine pollutant: yes

**IATA**
UN number: 3077  Class: 9  Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide)

**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.

SECTION 15: Regulatory information

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**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**
Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**
No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide  CAS-No.: 75980-60-8  Revision Date

**New Jersey Right To Know Components**
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

SECTION 16: Other information

Further information
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