Substance Name: Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC Number: 278-355-8
CAS Number: 75980-60-8

SUPPORT DOCUMENT FOR IDENTIFICATION OF
DIPHENYL(2,4,6-TRIMETHYLBENZOYL)PHOSPHINE OXIDE
AS A SUBSTANCE OF VERY HIGH CONCERN
BECAUSE OF ITS TOXIC FOR REPRODUCTION
(ARTICLE 57C) PROPERTIES
CONTENTS

PROPOSAL FOR IDENTIFICATION OF A SUBSTANCE OF VERY HIGH CONCERN ON THE BASIS OF THE CRITERIA SET OUT IN REACH ARTICLE 57 .............................................. 4

JUSTIFICATION ........................................................................................................................................................................... 5

1. IDENTITY OF THE SUBSTANCE AND PHYSICAL AND CHEMICAL PROPERTIES .................................................. 5

   1.1 Name and other identifiers of the substance .......................................................................................................................... 5
   1.2 Composition of the substance ................................................................................................................................................... 5
   1.3 Identity and composition of degradation products/metabolites relevant for the SVHC assessment .................................................. 6
   1.4 Identity and composition of structurally related substances (used in a grouping or read-across approach) ........................................... 6
   1.5 Physicochemical properties ..................................................................................................................................................... 6

2. HARMONISED CLASSIFICATION AND LABELLING .......................................................................................... 6

3. ENVIRONMENTAL FATE PROPERTIES .................................................................................................... 7

4. HUMAN HEALTH HAZARD ASSESSMENT .................................................................................................. 7

5. ENVIRONMENTAL HAZARD ASSESSMENT ............................................................................................. 7

6. CONCLUSIONS ON THE SVHC PROPERTIES ..................................................................................... 7

   6.1 CMR assessment .............................................................................................................................................................. 7

REFERENCES ............................................................................................................................................................................. 8
TABLES

Table 1: Substance identity ........................................................................................................... 5
Table 2: Classification according to Annex VI, Table 3 (list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008 .............................................................................. 6

ABBREVIATIONS

ATP: Adaptation to Technical and Scientific Progress of the CLP Regulation
CLH: Harmonised Classification and Labelling
RAC: ECHA’s Risk Assessment Committee
SVHC: substance of very high concern
IDENTIFICATION OF A SUBSTANCE OF VERY HIGH CONCERN ON THE BASIS OF THE CRITERIA SET OUT IN REACH ARTICLE 57

Substance Name: Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide
EC Number: 278-355-8
CAS Number: 75980-60-8

- The substance is identified as a substance meeting the criteria of Article 57 (c) of Regulation (EC) No 1907/2006 (REACH) owing to its classification in the hazard class toxic for reproduction category 1B.

Summary of how the substance meets the criteria set out in Article 57 of the REACH Regulation

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide is covered by index number 015-203-00-X of Regulation (EC) No 1272/2008 in Annex VI, part 3, Table 3 (the list of harmonised classification and labelling of hazardous substances) and it is classified in the hazard class toxic for reproduction category 2 (H361f). In 2021, the Risk Assessment Committee (RAC) adopted its opinion on the proposal for harmonised classification and labelling (CLH) of diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide as Repr. 1B (H360Fd) by consensus. The revised harmonised classification of the substance is included in ATP 21.

Therefore, this classification of the substance in Regulation (EC) No 1272/2008 shows that it meets the criteria for classification in the hazard class:

- Toxic for reproduction category 1B in accordance with Article 57 (c) of REACH.

Registration dossiers submitted for the substance: Yes

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1 Classification in accordance with section 3.7 of Annex I to Regulation (EC) No 1272/2008.
2 H361f: 'Suspected of damaging fertility'; H360Fd: 'May damage fertility. Suspected of damaging the unborn child'.
3 RAC opinion, adopted 16 September 2021, CLH-O-0000007023-85-01/F.
Justification

1. Identity of the substance and physical and chemical properties

1.1 Name and other identifiers of the substance

Table 1: Substance identity

<table>
<thead>
<tr>
<th><strong>EC number:</strong></th>
<th>278-355-8</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EC name:</strong></td>
<td>Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</td>
</tr>
<tr>
<td><strong>CAS number:</strong></td>
<td>75980-60-8</td>
</tr>
</tbody>
</table>
| **IUPAC names:** | • (Diphenylphosphinyl)-(2,4,6-trimethylphenyl)methanone  
• (mesitylcarbonyl)(diphenyl)phosphine oxide  
• 2,4,6-Trimethylbenzoyldiphenylphosphine oxide  
• diphenyl(2,4,6-trimethylbenzoyl)phosphineoxide  
• diphenylphosphoryl-(2,4,6-trimethylphenyl)methanone  
• Phosphine oxide, diphenyl(2,4,6-trimethylbenzoyl) |

| **Index number in Annex VI of the CLP Regulation** | 015-203-00-X |
| **Molecular formula:** | C_{22}H_{21}O_{2}P |
| **Molecular weight range:** | 348.38 |
| **Synonyms:** | • Methanone, (diphenylphosphinyl)(2,4,6-trimethylphenyl)- |

Structural formula:

1.2 Composition of the substance

**Name:** Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide  
**Description:** Organic  
**Substance type:** Mono-constituent
1.3 Identity and composition of degradation products/metabolites relevant for the SVHC assessment

Not relevant for the identification of the substance as SVHC in accordance with Article 57 (c) of the REACH Regulation.

1.4 Identity and composition of structurally related substances (used in a grouping or read-across approach)

Not relevant for the identification of the substance as SVHC in accordance with Article 57 (c) of the REACH Regulation.

1.5 Physicochemical properties

Not relevant for the identification of the substance as SVHC in accordance with Article 57 (c) of the REACH Regulation.

2. Harmonised classification and labelling

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide is covered by Index number 015-203-00-X in part 3 of Annex VI to the CLP Regulation as follows:

<table>
<thead>
<tr>
<th>Index No</th>
<th>Chemical name</th>
<th>EC No</th>
<th>CAS No</th>
<th>Classification</th>
<th>Labelling</th>
<th>Spec. Conc. Limits, M-factors and ATEs</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Hazard Class and Category Codes</td>
<td>Hazard statement codes</td>
<td>Pictogram, Signal Word Codes</td>
</tr>
<tr>
<td>Annex VI entry (May 2023)</td>
<td>015-203-00-X</td>
<td>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</td>
<td>278-355-8</td>
<td>759-80-60-8</td>
<td>Repr. 2</td>
<td>H361f</td>
</tr>
<tr>
<td>Revised Annex IV entry - RAC opinion 2021</td>
<td>015-203-00-X</td>
<td>diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide</td>
<td>278-355-8</td>
<td>759-80-60-8</td>
<td>Skin Sens. 1B</td>
<td>H317 H360Fd</td>
</tr>
</tbody>
</table>

4 Acute Toxicity Estimate
3. **Environmental fate properties**

Not relevant for the identification of the substance as SVHC in accordance with Article 57 (c) of the REACH Regulation.

4. **Human health hazard assessment**

In 2010, ECHA’s Risk Assessment Committee (RAC) adopted its opinion on a harmonised classification of diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide as Repr. 2 (H361f). The substance was placed on the 3rd ATP to the CLP regulation (Annex VI).

Since then, the registrant has provided more toxicity studies according to the minimum information required at 100 to 1000 tonnage band according to the REACH regulation.

In 2021, RAC adopted its opinion on the proposal for harmonised classification and labelling (CLH) of diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide as Repr. 1B (H360Fd) at its 58th meeting by consensus (RAC, 2021). RAC also adopted its opinion on the proposal for CLH as Skin Sens. 1B (H317). The revised harmonised classification of the substance is included in ATP 21.

5. **Environmental hazard assessment**

Not relevant for the identification of the substance as SVHC in accordance with Article 57 (c) of the REACH Regulation.

6. **Conclusions on the SVHC Properties**

6.1 **CMR assessment**

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide is covered by index number 015-203-00-X of Regulation (EC) No 1272/2008 in Annex VI, part 3, Table 3 (the list of harmonised classification and labelling of hazardous substances) and it is classified in the hazard class toxic for reproduction category 2 (H361f). In 2021, RAC adopted its opinion on the proposal for harmonised classification and labelling (CLH) of diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide as Repr. 1B (H360Fd). The revised harmonised classification of the substance is included in ATP 21.

Therefore, this classification of the substance in Regulation (EC) No 1272/2008 shows that it meets the criteria for classification in the hazard class:

- Toxic for reproduction category 1B in accordance with Article 57 (c) of REACH.

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References


https://echa.europa.eu/documents/10162/86e7e3f1-725b-2412-59bb-c1fe04529e0c