

**Section 1 – Chemical Product and Company Identification**

**Product name:** DCA  
**Manufacturer:** LuxCreo, Inc.  
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**Section 2 – Hazards Identification**
**GHS Classification of the substance or mixture**

**Physical hazards:** Not classified.  
**Skin corrosion/irritation:** Category 2  
**Eye damage/irritation:** Category 2A  
**Skin sensitisation:** Category 1  
**Environmental hazardstoxicity:** Hazardous to the aquatic environment.  
**Acute hazard:** Category 3  
**Long-term hazard:** Category 3

**Classification of the chemical**
**Pictogram(s):**


**Signal word:** Warning  
**Hazard statement:** Causes skin irritation.  
 Causes serious eye irritation.  
 May cause an allergic skin reaction.  
 Harmful to aquatic life with long lasting effects.

**Precautionary statements**

**Prevention:** Avoid breathing dust/fume/gas/mist/vapors/spray.  
 Wash hands thoroughly after handling.  
 Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment.  
 Wear protective gloves.  
 Wear eye protection/face protection.

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<b>Response:</b>	<p>If on skin: Wash with plenty of water.          If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.          If skin irritation or rash occurs: Get medical advice/attention.          If eye irritation persists: Get medical advice/attention.          Take off contaminated clothing and wash it before reuse.          Not applicable.          Wash contaminated clothing before reuse.</p>
<b>Storage disposal:</b>	Dispose of contents/container in accordance with local regulation.
<b>Other hazards:</b>	Not available.

### Section 3 – Composition/Information on Ingredient

Chemical name	CAS No.	Content (%)
Isobornyl methacrylate	7534-94-3	10-70%
Polyurethane methacrylate oligomer	Trade secret	20-65%
Polyurethane methacrylate oligomer	Trade secret	10-40%
4-Acryloylmorpholine	5117-12-4	10-35%
Benzenepropanoic acid, 3,5-bis(1,1-dimethyl-ethyl)-4-hydroxy-, C7-C9 branched alkylesters	125643-61-0	<5%
Phenylbis(2,4,6-trimethylbenzoyl) phosphine oxide	162881-26-7	<5%

### Section 4 – First Aid Measures

<b>Skin contact:</b>	Wash thoroughly using copious water - remove contaminated clothing immediately. If skin irritation occurs (redness etc.), consult doctor.
<b>Eyes contact:</b>	Check for and remove contact lenses. Wash thoroughly for several minutes using copious water. Seek medical help if necessary.
<b>Inhalation:</b>	If inhaled, immediately remove person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.
<b>Ingestion:</b>	Rinse the mouth thoroughly with water. Give copious water to drink - consult doctor immediately.

**Section 5 – Fire Fighting Measures****Suitable extinguishing media:**

Carbon dioxide, alcohol resistant foam or dry powder.

**Unsuitable extinguishing media:**

Avoid using DC water to extinguish fire, so as to avoid material splashes and fire spread.

**Firefighting equipment/instructions:**

In case of fire and/or explosion do not breathe fumes. Protective respirator with independent air supply. According to size of fire Full protection, if necessary.

**Hazardous combustion products:**

Dispose of contaminated extinction water according to official regulations.

**Section 6 – Accidental Release Measures**

For guidance on selection of personal protective equipment see Section 8 of this Material Safety Data Sheet. See Section 13 for information on disposal. Observe the relevant local and international regulations.

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

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection.

**Environmental precautions:**

If leakage occurs, dam up. Resolve leaks if this possible without risk. Prevent from entering drainage system. Inform the competent authorities when water or canalisation has been infiltrated.

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

Soak up with absorbent material (e.g. universal binding agent, sand, diatomaceous earth, sawdust) and dispose of according to Section 13. Flush residue using copious water. Clean soiled bottles immediately.

**Section 7 – Handling and Storage****Handling:**

Avoid contact with skin and eyes. Avoid inhalation of vapour. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

**Storage:**

Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials.

**Section 8 – Exposure Controls and Personal Protection**

<b>Occupational exposure limits (OEL):</b>	No information.
<b>Monitor method:</b>	No information.
<b>Engineering control:</b>	Exhaust ventilation is required. Safety shower and eye bath equipment.

**Personal protective equipment**

<b>Respiratory protection:</b>	Respiratory protection equipment is not required under normal conditions of use or for small scale/lab use but ensure good ventilation.  Respiratory protection equipment is required for large scale use or emergency situations. If the exposure limit is exceeded or if irritation or other symptoms occur, use a respirator approved by NIOSH/MSHA or EU standard EN136.  Recommended filter type: Particulate filter.
<b>Eyes protection:</b>	Safety glasses with side shields (EU standard-EN166).
<b>Body protection:</b>	Wear compatible protective clothing.
<b>Hands protection:</b>	Protective gloves, natural rubber (EN 374).
<b>Other protections:</b>	Wash hands with soap and clean water after handling. Keep the workplace clean. The workplace must be strictly prohibited to fireworks and food. No smoking, drinking and eating at working site. Pay attention to personal hygiene.

**Section 9 – Physical and Chemical Properties**

<b>Appearance:</b>	
<b>Physical state:</b>	Liquid.
<b>Form:</b>	Liquid.
<b>Color:</b>	Transparent.
<b>Odor:</b>	No obvious smell.
<b>Odor threshold:</b>	Not available.
<b>pH:</b>	Not available.
<b>Vapor pressure:</b>	Not available.
<b>Melting point/Freezing point:</b>	Not available.

<b>Initial boiling point and boiling range:</b>	Not available.
<b>Flash point:</b>	Not available.
<b>Evaporation rate:</b>	Not available.
<b>Flammability (solid, gas):</b>	Not available.
<b>Explosion limits:</b>	Not available.
<b>Vapor density:</b>	Not available.
<b>Relative density (water =1):</b>	1.039 (25.0 °C)
<b>Solubility (water):</b>	Not available.
<b>Partition coefficient:</b>	Not available.
<b>Auto-ignition temperature:</b>	Not available.
<b>Decomposition temperature:</b>	Not available.
<b>Specific gravity:</b>	Not available.
<b>Flammability limits in air, upper, %by volume:</b>	Not available.
<b>Flammability limits in air, lower, %by volume:</b>	Not available.
<b>VOC:</b>	Not available.
<b>Percent volatile:</b>	Not available.
<b>Other data:</b>	
<b>Viscosity:</b>	2000~3500 cps (25.0 °C)

## Section 10 – Stability and Reactivity

<b>Stability:</b>	Material is stable under normal conditions.
<b>Distribution of ban:</b>	Incompatible materials. Strong heat.
<b>Conditions to avoid:</b>	Avoid contact with oxidizing agents, strong alkalis and strong acids.
<b>Hazardous decomposition products:</b>	Oxides of carbon and other toxic fumes.
<b>Hazardous polymerization:</b>	No dangerous reactions known.

## Section 11 – Toxicological Information

<b>Acute toxicity:</b>	<b>Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:</b> LD50 Oral-Rat-Male and Female-> 2,000 mg/kg (OECD Test Guideline 401) LD50 transdermal-rat-male and female-> 2,000 mg/kg (OECD Test Guideline 402)
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**Skin irritation:****Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:**

Skin-Rabbit Result: No skin irritation-4 h

(OECD Test Guideline 404)

**(2,4,6-trimethylbenzoyl) diphenylphosphine oxide:**

Skin-Rabbit

Result: No skin irritation-24 h

Remarks: (ECHA).

**Eye irritation:****Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:** Eyes-rabbit

Result: No eye irritation-72 h

(OECD Test Guideline 405)

**(2,4,6-trimethylbenzoyl) diphenylphosphine oxide:** Eyes-rabbit

Result: No eye irritation

(Draize Test)

**Sensitization:****Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:**

Maximum response test-guinea pig

Result: positive

(OECD Test Guideline 406)

Classification according to EU CLP Regulation 1272/2008, Annex 6 (Table 3.1/3.2)

**Mutagenicity:****Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:** Test type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Metabolism activation: with or without metabolic activation

Method: OECD Test Guide 471

Result: negative

Test type: In vitro chromosome aberration test

Test system: human lymphocytes

Metabolism activation: with or without metabolic activation

Method: OECD Test Guide 473

Result: negative

Test type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Metabolism activation: with or without metabolic activation

Method: OECD Test Guide 476

Result: negative

**(2,4,6-trimethylbenzoyl) diphenylphosphine oxide:**

Mutagenicity (mammalian cell test): Negative chromosomal variation

	Result: negative
	In vitro mammalian cell gene mutation test
	Result: negative
	Ames test
	Escherichia coli/Salmonella typhimurium
	Result: negative
<b>Carcinogenicity:</b>	No known significant effects or critical hazards.
<b>Reproductive toxicity:</b>	<b>(2,4,6-trimethylbenzoyl) diphenylphosphine oxide:</b> Suspected of damaging fertility.
<b>Other information:</b>	No data.

## Section 12 – Ecological Information

<b>Ecotoxicity:</b>	<b>Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:</b> Toxicity to fish Semi-static test LC50-Danio rerio (zebrafish)-> 0.09 mg/l-96 h (OECD Test Guideline 203) Toxicity to water flea 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 (Terella subspicatus)-> 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)
<b>Biodegradable:</b>	<b>Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:</b> Biodegradability Aerobic-exposure time 28 d Result: 1%-non-biodegradable (OECD Test Guideline 301B)
<b>Bioconcentration or biological accumulation:</b>	<b>Phenyl bis (2,4,6-trimethylbenzoyl) phosphine oxide:</b> Bioaccumulation Cyprinus carpio (carp)-28 d At 24.3 °C (phenyl bis(2,4,6-trimethylbenzoyl)phosphorus oxide) Bioconcentration factor (BCF): <5 (OECD Test Guideline 305)
<b>Mobility in soil:</b>	No data.
<b>Other harmful effects:</b>	No data.

**Section 13 – Disposal Considerations**

<b>Waste treatment methods:</b>	Please refer to the requirements of relevant laws and regulations of your country or region before disposal.
<b>Packaging:</b>	Please refer to the requirements of relevant laws and regulations of your country or region before disposal.

**Section 14 – Transport Information**

<b>UN number:</b> <b>ADR, IMDG, IATA</b>	Not regulated as dangerous goods.
<b>UN proper shipping name:</b> <b>ADR, IMDG, IATA</b>	Not regulated as dangerous goods.
<b>Transport hazard class (es):</b> <b>ADR, IMDG, IATA</b>	Not regulated as dangerous goods.
<b>Packing group:</b> <b>ADR, IMDG, IATA</b>	Not regulated as dangerous goods.
<b>Secondary risk:</b>	Not regulated as dangerous goods.
<b>Environmental hazard:</b>	No information.
<b>Transportation notes:</b>	No information.

**Section 15 – Regulatory Information**

**GHS labelling elements:** Classification and labelling are carried out according to the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) regulations.

**Chemical safety assessment:** For this mixture, no chemical safety assessment has been carried out.



**Section 16 – Additional Information**

MSDS Creation Date: **18<sup>th</sup> May 2021**

To the best of our knowledge, the information contained herein is accurate and complete as of the date issued. End-use material performance may be impacted by, but not limited to, part design, processing and operating conditions, color treatment, test conditions, etc. As LuxCreo cannot control or anticipate the conditions under which the materials may be used, users shall review the information in specific context of the planned use. To the maximum extent permitted by law, LuxCreo will not be responsible for damages of any nature resulting from the use or reliance upon the information specified in this document. No express or implied warranties are given other than those implied mandatory by law. Users are responsible for determining that LuxCreo materials are safe, lawful, and technically suitable for the intended use, as well as for identifying the proper disposal or recycling methods consistent with applicable environmental laws and regulations. Unless otherwise expressly indicated in writing, LuxCreo's products and data sheets relating thereto are subject to change without notice. Users should check for and obtain the latest relevant information and verify that such information is current and complete before placing orders.