

SAFETY DATA SHEET

BlueCast X-WAX FILIGREE

Prepared in accordance with Regulation (EC) No. 1907/2006 (REACH), as amended by Regulation (EU) 2020/878, and Regulation (EC) No. 1272/2008 (CLP), as amended.

Revision: 3.0

Issue Date: 17 July 2026

Supersedes: Previous version

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

1.1 Product identifier

- **Product name:** BlueCast X-WAX FILIGREE
- **Product type:** Photocurable resin for additive manufacturing (DLP, and LCD technologies)
- **UFI:** See product label.

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

- **Relevant identified uses:** Photopolymer resin intended for industrial and professional additive manufacturing applications.
- **Uses advised against:** Consumer use/ non-professional applications. Any application other than those specifically recommended by the manufacturer.

1.3 Details of the supplier of the Safety Data Sheet

- **Manufacturer:** BlueCast Production S.r.l.
- **Address:** Corso Italia 25, 24049 Verdello (BG), Italy
- **Telephone:** +39 035 5293098 / +39 348 3391300
- **E-mail:** info@bluecast.it
- **Website:** www.bluecast.it

1.4 Emergency telephone number

- **Italy:** Centro Antiveleni – Ospedale Niguarda Milano | Tel. +39 02 66101029 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the mixture

According to Regulation (EC) No. 1272/2008 (CLP):

- Skin Irritation, Category 2 (H315)
- Eye Irritation, Category 2 (H319)
- Skin Sensitisation, Category 1 (H317)
- Reproductive Toxicity, Category 1B (H360)
- Specific Target Organ Toxicity – Single Exposure, Category 3 (Respiratory tract irritation) (H335)
- Hazardous to the aquatic environment – Chronic Category 3 (H412)

2.2 Label elements

According to Regulation (EC) No. 1272/2008:

GHS07	
GHS08	

- **Hazard pictograms:** GHS07, GHS08
- **Signal word:** Danger
 - **Hazard statements:**
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H335 May cause respiratory irritation.
 - H360 May damage fertility or the unborn child.
 - H412 Harmful to aquatic life with long lasting effects.
 - **Precautionary statements:**
 - P201 Obtain special instructions before use.
 - P202 Do not handle until all safety precautions have been read and understood.

- P261 Avoid breathing vapours or mist.
- P264 Wash thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing should not be allowed out of the workplace.
- P273 Avoid release to the environment.
- P280 Wear protective gloves, protective clothing and eye protection.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
- P308 + P313 IF exposed or concerned: Get medical advice.
- P333 + P313 If skin irritation or rash occurs: Get medical advice.
- P337 + P313 If eye irritation persists: Get medical advice.
- P362 + P364 Take off contaminated clothing and wash before reuse.
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P501 Dispose of contents/container in accordance with local regulations.

Hazard-determining components for labelling: Urethane dimethacrylate, Methacrylate oligomers, Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide

2.3 Other hazards

- The mixture contains acrylate monomers capable of causing allergic skin reactions in sensitised individuals.
- Repeated skin contact may result in dermatitis.
- The mixture does not contain substances identified as PBT or vPvB according to Annex XIII of REACH.
- The mixture does not contain substances identified as endocrine disruptors according to Regulation (EU) 2023/707 at concentrations requiring disclosure.

SECTION 3: Composition / information on ingredients

3.2 Mixtures

Component	CAS No.	EC No.	Concentration
Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide	75980-60-8	278-355-8	≤2 %
Urethane dimethacrylate	72869-86-4	276-957-5	10-40 %

Component	CAS No.	EC No.	Concentration
Methacrylate oligomers	Trade Secret	Not available	30–40 %
Waxy polymer	Trade Secret	Not available	60–80 %

Concentration ranges are provided in accordance with regulatory requirements and reflect confidential formulation information. The indicated ranges are not additive and represent independent concentration intervals. The exact composition remains proprietary and the final formulation complies with the declared mixture composition.

Classification of ingredients (CLP):

- **Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide:** Repr. 1B (H360), Skin Sens. 1B (H317), Aquatic Chronic 2 (H411)
- **Urethane dimethacrylate:** Skin Sens. 1 (H317), Aquatic Chronic 2 (H411)
- **Methacrylate oligomers:** Skin Irrit. 2 (H315), Eye Irrit. 2 (H319), Skin Sens. 1 (H317), STOT SE 3 (H335), Aquatic Chronic 3 (H412)
- **Waxy polymer:** Not classified.

SECTION 4: First-aid measures

4.1 Description of first-aid measures

- **General advice:** Immediately remove the affected person from exposure. Never give anything by mouth to an unconscious person. Show this Safety Data Sheet to the attending physician.
- **Following inhalation:** Remove the exposed person to fresh air and keep at rest in a position comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Seek medical attention if symptoms persist.
- **Following skin contact:** Remove contaminated clothing and footwear immediately. Wash affected skin thoroughly with plenty of soap and water for at least 15 minutes. Do not use solvents or thinners to clean the skin. Obtain medical advice if irritation or sensitisation develops.
- **Following eye contact:** Immediately rinse cautiously with clean running water for at least 15 minutes while holding eyelids open. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention if irritation, pain or visual disturbances persist.
- **Following ingestion:** Rinse mouth thoroughly with water. Do not induce vomiting unless instructed by medical personnel. Never give anything by mouth to an unconscious person. Contact a Poison Centre or physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

- **Acute effects:** Skin irritation, Serious eye irritation, Respiratory tract irritation, Allergic skin reaction.
- **Delayed effects:** Repeated or prolonged skin exposure may cause allergic contact dermatitis. Contains substances classified as Reproductive Toxicity Category 1B.

4.3 Indication of any immediate medical attention and special treatment needed Treat symptomatically. No specific antidote is known.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

- **Suitable extinguishing media:** Alcohol-resistant foam, Dry chemical powder, Carbon dioxide (CO₂), Water spray or fog.
- **Unsuitable extinguishing media:** Do not use a direct water jet, as it may spread the burning material.

5.2 Special hazards arising from the substance or mixture

Combustion may generate hazardous decomposition products including:

- Carbon monoxide
- Carbon dioxide
- Phosphorus oxides
- Dense black smoke containing hazardous organic decomposition products may be generated.
- *Exposure to decomposition products may present a health hazard.*

5.3 Advice for firefighters

- Wear full protective clothing and self-contained breathing apparatus (SCBA) operating in positive-pressure mode.
- Prevent contaminated fire-fighting water from entering drains, surface waters or soil.
- Collect contaminated extinguishing water for disposal according to local regulations.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Evacuate unnecessary personnel.
- Ensure adequate ventilation.
- Avoid contact with skin, eyes and clothing.
- Avoid inhalation of vapours or aerosols.
- Wear suitable personal protective equipment as described in Section 8.

6.2 Environmental precautions

- Prevent entry into: drains, sewers, surface waters, groundwater, soil.
- Notify the competent authorities if significant environmental contamination occurs.

6.3 Methods and material for containment and cleaning up

- Contain the spill using inert absorbent material such as: sand, vermiculite, diatomaceous earth.
- Collect into suitable labelled containers for disposal.
- Clean contaminated surfaces with detergent and water.
- Avoid using organic solvents whenever possible.
- Dispose of contaminated materials according to Section 13.

6.4 Reference to other sections

See Section 8 for personal protective equipment. See Section 13 for disposal considerations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Use only in well-ventilated areas.
- Avoid inhalation of vapours or mist.
- Avoid contact with skin, eyes and clothing.
- Do not eat, drink or smoke while handling the product.
- Wash hands thoroughly after handling.
- Keep containers tightly closed when not in use.
- Protect the product from sunlight and artificial UV radiation.
- Use only equipment compatible with acrylate-based resins.

7.2 Conditions for safe storage, including any incompatibilities

- Store in the original tightly closed container.
- **Recommended storage temperature:** 10–30°C.
- **Protect from:** direct sunlight, UV radiation, heat, ignition sources, moisture.
- Store in a cool, dry and well-ventilated location.
- Keep away from food, beverages and animal feed.
- Avoid temperatures exceeding 40°C.

7.3 Specific end use(s)

Photopolymer resin intended for professional and industrial additive manufacturing. Follow the equipment manufacturer's operating instructions.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters No occupational exposure limit values have been established for the mixture as supplied. Maintain airborne concentrations as low as reasonably practicable through adequate engineering controls.

8.2 Exposure controls

- **Appropriate engineering controls:** Provide adequate local exhaust ventilation. Emergency eyewash stations and safety showers should be available near work areas.
- **Individual protection measures:**
 - **Eye and face protection:** Wear chemical safety goggles conforming to EN 166. A face shield is recommended where splashing may occur.
 - **Hand protection:** Wear chemical-resistant protective gloves complying with EN ISO 374. Recommended materials include Nitrile rubber and Butyl rubber. Breakthrough time shall be determined by the glove manufacturer. Replace gloves regularly and immediately if damaged.
 - **Skin and body protection:** Wear protective clothing resistant to chemical penetration. Remove contaminated clothing immediately. Wash contaminated clothing before reuse.
 - **Respiratory protection:** Where ventilation is insufficient, wear suitable respiratory protection (e.g., half-mask conforming to EN 140 or full-face mask conforming to EN 136) fitted with a Type A organic vapour filter or a combined filter suitable for organic vapours and particulate aerosols/mists (e.g. Type A/P2 or equivalent), in accordance with EN 14387. Use a self-contained breathing apparatus during emergency situations or when oxygen deficiency is suspected.

			
ISO 7010-M004	ISO 7010-M009	ISO 7010-M010	ISO 7010-M017

- **Environmental exposure controls:** Avoid uncontrolled release into the environment. Prevent contamination of watercourses, drains and soil. Dispose of waste in accordance with local, regional and national regulations.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Physical state	Liquid
Colour	Blue navy
Odour	Characteristic acrylate
Odour threshold	No data available.
Melting point / Freezing point	No data available / Under 15 °C
Boiling point or initial boiling point	>100 °C
Flammability	Not classified as flammable
Lower and upper explosion limits	No data available.
Flash point (closed cup)	>93.5 °C (not classified as flammable according to CLP criteria)
Auto-ignition temperature	Over 300 °C
Decomposition temperature	Over 280 °C
pH	Not applicable (non-aqueous mixture)
Kinematic viscosity	No data available.
Dynamic viscosity	185 cP (25 °C); 90 cP (35 °C)
Water solubility	Practically insoluble in water
Partition coefficient (n-octanol/water)	No data available.
Vapour pressure	No data available.

Property	Value
Density	1.12 g/cm ³ (25 °C)
Relative density	1.12 (water = 1)
Vapour density	No data available.
Particle characteristics	Not applicable (liquid)

9.2 Other information

- **Explosive properties:** The product is not classified as explosive.
- **Oxidising properties:** The product is not classified as oxidising.
- **VOC content:** No data available.
- **Polymerisation:** May undergo polymerisation if exposed to excessive heat, ultraviolet light or incompatible initiators.

SECTION 10: Stability and reactivity

10.1 Reactivity Stable under recommended conditions of storage and handling.

10.2 Chemical stability Stable under normal storage and use conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerisation may occur in the presence of:

- excessive heat
- ultraviolet light
- peroxide initiators
- free-radical initiators
- aminic accelerators

10.4 Conditions to avoid Avoid direct sunlight, UV radiation, temperatures above 50 °C, open flames, sparks, hot surfaces, and prolonged heating.

10.5 Incompatible materials Avoid contact with strong oxidising agents, strong acids, strong bases, peroxide initiators, free-radical initiators, and reducing agents.

10.6 Hazardous decomposition products

Thermal decomposition may produce carbon monoxide (CO), carbon dioxide (CO₂), phosphorus oxides, irritating organic vapours, and acrylate decomposition products.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No. 1272/2008

- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **Skin corrosion / irritation:** Causes skin irritation. Repeated exposure may result in drying or cracking of the skin.
- **Serious eye damage / eye irritation:** Causes serious eye irritation. Exposure may result in redness, pain, tearing and temporary blurred vision.
- **Respiratory or skin sensitisation:** May cause an allergic skin reaction. Sensitised individuals may develop allergic dermatitis following repeated exposure.
- **Germ cell mutagenicity:** Based on available information, the classification criteria are not met.
- **Carcinogenicity:** Based on available information, the classification criteria are not met.
- **Reproductive toxicity:** May damage fertility or the unborn child. Classification is based on the presence of Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (CAS No. 75980-60-8), classified as Reproductive Toxicity Category 1B (H360).
- **STOT – Single exposure:** May cause respiratory irritation. Symptoms may include coughing, throat irritation, and discomfort of the upper respiratory tract.
- **STOT – Repeated exposure:** Based on available information, the classification criteria are not met.
- **Aspiration hazard:** Based on available information, the classification criteria are not met.

11.2 Information on other hazards

- **Endocrine disrupting properties:** The mixture does not contain substances identified as endocrine disruptors at concentrations requiring disclosure under applicable legislation.
- **Other information:** Exposure should be minimised by following good industrial hygiene practices and using appropriate personal protective equipment.

SECTION 12: Ecological information

12.1 Toxicity

Based on the classification criteria of Regulation (EC) No. 1272/2008 (CLP), the mixture is classified as: **Hazardous to the aquatic environment – Chronic Category 3 (H412)**. Harmful to aquatic life with long lasting effects. Prevent release into the environment.

12.2 Persistence and degradability

Based on available information on individual components, some constituents are not expected to be readily biodegradable. Photopolymerised material is expected to be significantly less mobile than the uncured product. This does not eliminate the need for proper waste management.

12.3 Bioaccumulative potential

No experimental data are available for the mixture. Some constituents may exhibit bioaccumulation potential due to their hydrophobic character.

12.4 Mobility in soil

No data available. The uncured product is expected to have limited mobility because of its viscosity.

12.5 Results of PBT and vPvB assessment This mixture does not contain substances assessed as PBT or vPvB according to Annex XIII of REACH at reportable concentrations.

12.6 Endocrine disrupting properties

The mixture does not contain substances identified as endocrine disruptors at concentrations requiring disclosure under Regulation (EU) 2023/707.

12.7 Other adverse effects

No additional ecological information is available. Avoid uncontrolled release into the environment, surface waters, groundwater, soil and sewage systems.

SECTION 13: Disposal considerations

13.1 Waste treatment methods Dispose of waste in accordance with all applicable local, regional, national and international regulations. Do not discharge the product into drains, surface waters, groundwater or soil.

- **Product disposal:** Uncured resin should be collected in suitable, properly labelled containers and disposed of through an authorised hazardous waste contractor. Where permitted by local regulations, small quantities of residual resin may be fully cured prior to disposal.
- **Contaminated packaging:** Empty containers may retain hazardous residues. Do not reuse containers for other purposes. Dispose of contaminated packaging through an authorised waste management contractor.
- **European Waste Catalogue (EWC):** The appropriate waste code shall be assigned by the end user according to the actual application and applicable legislation.

SECTION 14: Transport information

The product does not meet the classification criteria for dangerous goods according to ADR/RID, IMDG Code and IATA Dangerous Goods Regulations.

- **14.1 UN number or ID number:** Not regulated.
- **14.2 UN proper shipping name:** Not applicable.
- **14.3 Transport hazard class(es):** Not applicable.
- **14.4 Packing group:** Not applicable.
- **14.5 Environmental hazards:**
 - ADR/RID: No
 - IMDG Code Marine Pollutant: No
 - IATA: No
- **14.6 Special precautions for user:** No special transport precautions are required under the applicable transport regulations. Transport containers should remain tightly closed and protected against physical damage.
- **14.7 Maritime transport in bulk according to IMO instruments:** Not applicable.

SECTION 15: Regulatory information

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

This Safety Data Sheet has been prepared in accordance with the applicable provisions of REACH and CLP Regulations.

Diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide (CAS No. 75980-60-8) is subject to restrictions under REACH Annex XVII concerning substances classified as carcinogenic, mutagenic or toxic for reproduction (CMR). Users must ensure compliance with applicable restrictions and conditions of use.

Users are responsible for ensuring compliance with all applicable national and local regulations governing the storage, handling, use and disposal of this product.

15.2 Chemical safety assessment A chemical safety assessment has not been carried out for this mixture.

SECTION 16: Other information

- **Revision information:** Revision 2.0 | Issue date: 17 July 2026. This revision supersedes all previous editions.

Classification method

The classification of the mixture has been performed in accordance with Regulation (EC) No. 1272/2008 (CLP) using the calculation method based on the classification of individual components and their concentrations in the mixture.

Full text of hazard statements:

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.
- H360 May damage fertility or the unborn child.
- H411 Toxic to aquatic life with long lasting effects.
- H412 Harmful to aquatic life with long lasting effects.
- **Recommended restrictions:** For industrial and professional use only. Not intended for consumer use.
- **Training advice:** Personnel handling this product should receive appropriate training regarding chemical hazards, safe handling of photopolymer resins, use of personal protective equipment, emergency response procedures, and waste management.
- **Abbreviations:**
 - ADR – European Agreement concerning the International Carriage of Dangerous Goods by Road
 - CAS – Chemical Abstracts Service
 - CLP – Classification, Labelling and Packaging Regulation
 - DNEL – Derived No Effect Level
 - EC – European Community
 - EWC – European Waste Catalogue
 - GHS – Globally Harmonized System of Classification and Labelling of Chemicals
 - IATA – International Air Transport Association
 - IMDG Code – International Maritime Dangerous Goods Code
 - PBT – Persistent, Bioaccumulative and Toxic
 - PNEC – Predicted No Effect Concentration
 - REACH – Registration, Evaluation, Authorisation and Restriction of Chemicals
 - RID – Regulations concerning the International Carriage of Dangerous Goods by Rail
 - STOT – Specific Target Organ Toxicity
 - SVHC – Substance of Very High Concern
 - UFI – Unique Formula Identifier
 - vPvB – Very Persistent and Very Bioaccumulative

Disclaimer

The information contained in this Safety Data Sheet is believed to be correct at the date of issue and is based on our current knowledge. It is intended solely as guidance for the safe handling, use, processing, storage, transportation, disposal and release of the product. It does not constitute a guarantee of any specific product properties and does not establish a legally valid contractual relationship. The user remains responsible for ensuring that all applicable legislation is observed.