


# Material Safety Data Sheet

## 1. Chemical Product and Company Identification

Identification of the substance:	BLUE RESIN BV-002
Use of the substance / preparation:	UV Resin for 3D Printer
Company / undertaking identification:	Young Optics Inc. No. 7, Hsin-Ann Rd., Hsinchu Science Park, Hsinchu 30076, Taiwan Tel: +886-3-6206789 Fax:+886-3-6231102
Emergency telephone:	Tel: +886-3-6206789#1656 M: +886-9-75438158

## 2. HAZARDS IDENTIFICATION

Directive criteria, 67/548/CE, 99/45/EC and following amendments thereof: Classification / Symbols:	 Warning
R Phrases:	R22 May be harmful if swallowed R36/38 Irritating to eyes and skin. R43 May cause sensitization by skin contact.
S Phrases:	S7/9 Keep container tightly closed/Keep container in a well-ventilated place S20 When using do not eat or drink S24/25 Avoid contact with eyes and skin S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice S28 After contact with skin, wash immediately with plenty of water S29 Do not empty into drains S37/39 Wear suitable gloves and eye/face protection
EC regulation criteria 1272/2008 (CLP):	Warning, Eye Irrit. 2, Causes eye irritation. Warning, Skin Irrit. 2, Causes skin irritation.
Hazard statements:	H319 Causes serious eye irritation. H315 Causes skin irritation. H317 May cause an allergic skin reaction.
Precautionary statements:	P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P264 Wash hands thoroughly after handling. P280 Wear protective gloves/protective clothing/eye protection/face protection.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Composition of components	Weight %	UN CAS.No
ACRYLATE MONOMER	40~60	13048-33-4
ACRYLATE OLIGOMER	20~35	108-65-6
MODIFIED ACRYLATE	10~25	Proprietary
PHOTOINITIATOR & ADDITIVES	5~15	Proprietary

### 4. FIRST-AID MEASURES

Contact with skin:	Immediately take off all contaminated clothing. Remove the product with a cloth or absorbent paper. Do not use solvents. Wash immediately with water for at least 10 minutes. After contact with skin, wash immediately with plenty of soaped water. Seek medical advice if irritation persists. Wash with plenty of water and soap. Should the patient feel unwell, consult a physician.
Contact with eyes:	Seek medical advice if irritation persists. Wash immediately with water for at least 10 minutes. Should the patient feel unwell, consult a physician.
Swallowing:	The induction of vomiting and the administration of oral drugs must be carried out only upon medical council. A suspension of activated charcoal in water, or liquid petrolatum may be administered. Should the patient feel unwell, consult a physician.
Inhalation:	Ventilate the premises. The patient is to be removed immediately from the premises contaminated and made to rest in a well ventilated area. Should the patient feel unwell, consult a physician.

### 5. FIRE FIGHTING MEASURES

Recommended extinguishers:	CO <sub>2</sub> , Foam, Chemical powders, sand or earth. Use water based extinguishing media with caution.
Extinguishers not to be used:	None in particular.
Risks arising from combustion:	Avoid inhaling the fumes. Incomplete combustion releases toxic gases.
Protective equipment:	Use protection for the airways.

## 6. MEASURES IN CASE OF ACCIDENTAL RELEASE

Measures for personal safety:	Use a mask, gloves and protective clothing.
Environmental measures:	Limit leakages with earth or sand. If the product has flown off into a water course, into the drainage system, or has contaminated the ground or vegetation, notify the responsible authorities.
Cleaning methods:	Rapidly collect the product. To do so, wear a mask and protective clothing. If the product is in a liquid form, stop it from entering the drainage system. Recover the product for re-use if possible, or for elimination in compliance with waste disposal regulations in force. The product might, where appropriate, be absorbed by inert material.

## 7. HANDLING AND STORAGE

Handling precautions:	Avoid contact with and inhalation of vapours and/or dusts. Do not eat or drink or smoke while working. Wash hands before breaks and at the end of work. Maintain a sufficient personal care.
Incompatible materials:	Keep away from amines, strong bases, acids and strong oxidants.
Storage conditions:	Storage temperature: below 35°C/95°F Keep in a dry place, in the original containers tightly closed, avoid heat/ignition and light sources. For industrial use only, keep away from children.

## 8. EXPOSURE CONTROL/PERSONAL PROTECTION

Precautionary measures:	Provide adequate ventilation to the areas where the product is stored and/or handled.
Respiratory protection:	Required where ventilation/aspiration is insufficient or exposure is prolonged, or for applications in which the product is sprayed or heated. Required in case of machining or applications that release dusts.
Protection for hands:	Use protective gloves. For an extended exposure of the product, wear nitrile/neoprene gloves.
Eye protection:	Safety goggles.
Protection for skin:	Use clothing that provides complete protection to the skin.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and color:	Opaque blue
Odour:	Light
pH:	Not available
Melting point:	Not available
Boiling point:	> 200 °C
Flash point:	> 150 °C
Explosive properties:	Not available
Combustion-related properties:	Not available
Specific gravity ASTM D 1475:	1.1 g/ml (25°C)
Solubility in water:	Insoluble

## 10. STABILITY AND REACTIVITY

Conditions to avoid:	Stable under normal conditions.
Substances to avoid:	The product reacts exothermically with amines, Lewis acids and mercaptans.
Hazardous decomposition products:	Upon incomplete combustion carbon monoxide is formed.

## 11. TOXICOLOGICAL INFORMATION

There is no toxicological data available on the mixture. Consider the individual concentration of each component to assess toxicological effects resulting from exposure to the mixture. When available, the information relating to the main components are listed below. reaction product:	Acrylate
LD50 (oral):	> 2000 mg/kg (rat)
LD50 (dermal):	> 2000 mg/kg (rabbit)

## 12. ECOLOGICAL INFORMATION

The experimental information related to the ecotoxicological properties of the mixture itself is not available

Toxicity:	Not available
Persistence and degradability:	Not available
Bioaccumulative potential:	Not available
Mobility in soil:	Not available
Results of PBT and vPvB assessment:	Non-applicable
Other adverse effects:	Non-applicable

### 13. DISPOSAL CONSIDERATIONS

Recover if possible. In doing so, comply with the local and national regulations currently in force. Avoid release to the environment. Refer to special instructions/Safety data sheets. Where applicable, refer to the following regulatory provisions : 91/156/EEC, 91/689/EEC, 94/62/EC and subsequent amendments.

### 14. TRANSPORT INFORMATION

UN number: Not subject to the code  
Road/Rail (ADR/RID): 9 III  
Sea (IMDG): 9 III  
Sea : MARINE POLLUTANT  
Sea (EmS): F-A , S-F  
Air (ICAO)/IATA: 9 III

### 15. REGULATORY INFORMATION

Council Directive 67/548/EEC (Classification, packaging and labelling of dangerous substances) and subsequent amendments.  
Council Directive 1999/45/EC (Classification, packaging and labelling of dangerous preparations) and subsequent amendments. Regulation (EC) nr 1272/2008 (CLP).  
Commission Directive 98/24/EC (Protection of the health and safety of workers from the risk related to chemical agent). Commission Directive 2000/39/EC occupational exposure limit values).  
Regulation (EC) No 1907/2006 (REACH).

### 16. OTHER INFORMATION

References	European Chemicals Bureau(ECB) <a href="http://esis.jrc.ec.europa.eu/">http://esis.jrc.ec.europa.eu/</a> EINECS (European Inventory of Existing Commercial chemical Substances) O.J. C 146A, 15.6.1990. ELINCS (European List of Notified Chemical Substances) in support of Directive 92/32/EEC, the 7th amendment to Directive 67/548/EEC. NLP (No-Longer Polymers). BPD (Biocidal Products Directive) active substances listed in Annex I or IA of Directive 98/8/EC or listed in the so-called list of non-inclusions. PBT (Persistent, Bioaccumulative, and Toxic) or vPvB (very Persistent and very Bioaccumulative). CLP/GHS (Classification, Labelling and Packaging of substances and mixtures); CLP implements the Globally harmonised System (GHS), Regulation (EC) No 1272/2008. Export and Import of Dangerous Chemicals listed in Annex I of Regulation (EC) No 689/2008. HPVCs (High Production Volume Chemicals) and LPVCs (Low Production Volume Chemicals). IUCLID Chemical Data Sheets, OECD-IUCLID Export Files, EUSES Export Files. Priority Lists, Risk Assessment process and tracking system in relation to Council Regulation (EEC) No 793/93 also known as Existing Substances Regulation (ESR).
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The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality. It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific intended use.