SAFETY DATA SHEET (SDS)

LEYI® 3D Printing Resin

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product Identifier:

Product Name : 3D Printing Resin

Product Model : DSG01, DSG02, DSG03, DSG04, DSG05

1.2 Relevant identified uses of the mixture and uses advised against:

Resin for use in 3D printing of surgical guide models

1.3 Details of the supplier of the safety data sheet:

Manufacturer: Hangzhou Leyi New Material Technology Co.,Ltd.

Address: Room 201, 2F, Building 2, No. 3 Huayi Road, Yuhang District, Hangzhou City, Zhejiang, China

Tel: +86-571-88721752

E-mail: info@leyi3d.com

1.4 Emergency telephone number: +86-571-88721751

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the mixture:

Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye Irrit. 2	H319
STOT SE3	H335

2.2 Label elements:

Pictogram



Signal word Warning

Warning H statements:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313	If skin irritation or rash occurs: Get medical advice/ attention.
P501	Dispose of contents/ container in accordance with local/regional/ national/international regulations.

2.3 Other hazards:

Not applicable.

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	CAS No.	EC No.	Concentration
4-Acryloylmorpholine	5117-12-4	418-140-1	45-65%
3,3,5-Trimethylcyclohexyl acrylate	86178-38-3	289-200-9	25-35%
Di-p-tolyl(2,4,6-trimethylbenzoyl)phosphine oxide	270586-78-2	—	1-5%

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

In case of ingestion:

- Do NOT induce vomiting.
- Drink plenty of water and seek medical treatment.

In case of inhalation:

- Move affected person to fresh air.
- If respiratory irritation occurs, if breathing becomes difficult seek medical attention immediately.

In case of skin contact:

- In case of contact with skin, wash off with soap and water.
- Immediately remove any contaminated clothing, shoes or stockings.
- Consult a doctor if skin irritation persists.

In case of eye contact:

- In case of contact with eyes, rinse with plenty of water carefully.
- In the event of persistent symptoms seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed: See section 11.

4.3 Indication of any immediate medical attention and special treatment needed: Not available.

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media: Carbon dioxide, dry chemical, foam.

Unsuitable extinguishing media: Do not use a direct water jet on burning material.

5.2 Special hazards arising from the substance or mixture:

Carbon monoxide and unidentified organic compounds may be formed during combustion.

5.3 Advise for firefighters:

Use breathing apparatus with independent air supply. Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

- For non-emergency personnel:
  Avoid inhalation and contact with skin and eyes. A self-contained breathing apparatus is recommended in case of a major spill.
- For emergency responders:
  Use personal protective clothing. Keep away sources of ignition.

6.2 Environmental precautions: Do not discharge into the drains/surface waters/ground waters.

6.3 Methods for Containment and Cleaning up:

Clean up spillage promptly. Remove ignition sources. Provide adequate ventilation. Avoid

excessive inhalation of vapours. Gross spillages should be contained by use of sand or inert powder and disposed of according to the local regulations.

6.4 Reference to other sections:

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for information on disposal.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

- Protective measures:

Avoid excessive inhalation of concentrated vapors. Follow good manufacturing practices for housekeeping and personal hygiene. Wash any exposed skin immediately after any chemical contact, before breaks and meals, and at the end of each work period. Contaminated clothing and shoes should be thoroughly cleaned before re-use. Keep away from ignition sources and naked flame.

- Advice on general occupational hygiene:

Do not eat, drink and smoke in work areas. Wash hands after use. Remove contaminated clothing and protective equipment before entering eating areas.

7.2 Conditions for safe storage, including any incompatibilities:

Store in a cool, dry, ventilated area away from heat sources. Keep containers upright and tightly closed when not in use.

7.3 Specific end use(s): Not applicable.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters:

- Occupational exposure limits: Not available.
- Additional exposure limits under the conditions of use: Not available.
- DNEL/DMEL and PNEC-Values: Not available.

8.2 Exposure controls:

- Appropriate engineering controls:

Where appropriate, use closed systems to transfer and process this material. If appropriate, isolate mixing rooms and other areas where this material is used or openly handled. Maintain these areas under negative air pressure relative to the rest of the plant.

- Individual protection measures, such as personal protective equipment:

Eye/face protection:	Use tight-fitting goggles, face shield or safety glasses with side shields if eye contact might occur.
Hand protection:	Use chemically resistant gloves.
Body protection:	Wear suitable protective clothing to prevent skin exposure.
Respiratory protection:	No respiratory protection is required during normal operations in a workplace. If engineering controls and safe work practices are not sufficient, an approved, properly fitted respirator with organic vapor cartridges or canisters and particulate filters should be used.
Thermal hazards:	Not available.

- Environmental exposure controls:

Avoid discharge into the environment. According to local regulations and official regulations.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

Appearance:	Viscous liquid
Colour:	Transparent
Odour:	Weak odor
Odour threshold:	Not available
pH:	Not available
Melting point/freezing point (°C):	Not available
Boiling point (°C):	Thermal decomposition occurs above 230°C, no definite boiling point
Flash point (°C):	＞70°C
Evaporation rate:	Not available
Flammability limit - lower (%):	Not available
Flammability (solid, gas):	Not available
Ignition temperature (°C):	Not available
Upper/lower flammability/explosive limits:	Not available
Vapour pressure:	Not available
Vapour density:	Not available
Relative Density:	1.0-1.5g/cm^3（25°C）
Bulk density (kg/m^3):	Not available
Water solubility:	Not available
n-Octanol/Water (log Po/w):	Not available
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity, dynamic (mPa·s):	200-400（25°C）
Explosive properties:	Not available
Oxidising properties:	Not available
Molecular Formula:	Not available
Molecular Weight:	Not available

9.2 Other information:

Fat solubility(solvent– oil to be specified) etc:	Not available
Surface tension:	Not available
Dissociation constant in water(pKa):	Not available
Specific gravity:	Not available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: The substance is stable under normal storage and handling conditions.

10.2 Chemical stability: Stable at room temperature in closed containers under normal storage and handling conditions.

10.3 Possibility of hazardous reactions: No dangerous reactions known.

10.4 Conditions to avoid: Incompatible materials Direct sources of heat.

10.5 Incompatible materials: Strong acids, alkali or oxidizing agents.

10.6 Hazardous decomposition products: Carbon monoxide and unidentified organic compounds may be formed during combustion.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Toxicokinetics, metabolism and distribution:

Non-human toxikological data: Not available

11.2 Information on toxicological effects:

- Acute toxicity:

  LD50(Oral, Rat): > 5000 mg/kg bw

  LD50(Dermal, Rat): > 5000 mg/kg bw

  LC50(Inhalation, Rat): Not available

- Skin corrosion/Irritation: Causes skin irritation.
- Serious eye damage/irritation: Not classified
- Respiratory or skin sensitization: May cause an allergic skin reaction.
- Germ cell mutagenicity: Not classified
- Carcinogenicity: Not classified
- Reproductive toxicity: Not classified
- STOT- single exposure: Not classified
- STOT-repeated exposure: Not classified

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

Harmful to aquatic life with long lasting effects.Do not allow uncontrolled leakage of product into the environment Product is not allowed to be discharged into the ground water or aquatic environment.

12.2 Persistence and degradability: Not readily degradable.

12.3 Bioaccumulation potential: No data available.

12.4 Mobility in soil: No data available.

12.5 Results of PBT and vPvB assessment: No data available.

12.6 Other adverse effects:

Obtain approval of the relevant authorities before discharging into sewage treatment plants.
Water contaminating class (D): 1 - slightly water contaminating

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Due to the high risk of contamination recycling/recovery is not recommended Waste disposal in accordance with regulations (most probably controlled incineration).

13.2 Product / Packaging disposal:

According to local regulations. Emptied container might retain product residues. Follow all warnings even after the container is emptied.

SECTION 14: TRANSPORT INFORMATION

	Land transport (ADR/RID)	**Sea transport (IMDG)**	**Air transport (ICAO/IATA)**
UN Number	Not regulated	Not regulated	Not regulated
UN proper shipping name	Not regulated	Not regulated	Not regulated
Transport hazard class(es)	Not regulated	Not regulated	Not regulated
Packaging group	Not regulated	Not regulated	Not regulated

Environmental hazards	No	No	No
Special precautions for user	See section 2.2	See section 2.2	See section 2.2
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not regulated	Not regulated	Not regulated

SECTION 15: REGULATORY INFORMATION

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

Relevant information regarding authorization:	Not applicable.
Relevant information regarding restriction:	Not applicable.
Other EU regulations:	Employment restrictions concerning young person must be observed. For use only by technically qualified individuals.
Other National regulations:	Not applicable.

SECTION 16: OTHER INFORMATION

16.1 Training instructions:Not applicable.

16.2 Further information:

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.

16.3 Notice to reader:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgment of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.