Surgical Guide Resin

MATERIAL SAFETY DATA SHEET

MSDS code: XL/QES-C-RDMS-030

Creation Date: August 13,2021

Revision Date: None

Revision instructions: None

SHINING 3D TECH CO.,LTD.

Stock code:830978

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

1.1 Product identifier

English product name: Surgical Guide Resin
English product code: SG01
Chemical Chinese name: 光敏聚合物树脂
Chemical English name: Photopolymer Resin
Product code: Not available.
Product description: Mixture of acrylic and methacrylic acid esters, photoinitiators, proprietary pigment and additive package.
Other means of identification: Not available.

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

Identified uses: Photopolymer Resin for AccuFab Series 3D Printers.

1.3 Details of the supplier of the safety data sheet

Company: SHINING 3D TECH Co.,Ltd.
Address: 1398 Xiangbin Road, Wenyan, Xiaoshan, Hangzhou, China
Email: cnsales@shining3d.com
MSDS code: XL/QES-C-QA-RDMS-030

1.4 Emergency telephone number

Telepone: +86-0571-82999589
Hours of operation: 24/7

SECTION 2: Haxards identification

2.1 Classification of the substance or mixture

Product definition: Mixture.
Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]
Acute toxicity - Oral, Category 4
Serious eye damage, Category 1
Skin sensitization, Category 2
Specific target organ toxicity - repeated exposure, Category 2
The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.
See Section 16 for the full text of the H statements declared above.
See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms:

Signal word: Danger

Haxard statements:

H318 Causes serious eye damage.

H315 Causes skin irritation.

H302 Harmful if swallowed.

H317 May cause an allergic skin reaction.

H373 May cause damage to organs (state all organs affected, if known) through prolonged or repeated exposure (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)

H412 Harmful to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P260 Do not breathing vapour. (uncured material only)

P264 Wash thoroughly after handing.

P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye protection, face protection.

Response:

P301 + P312 IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell.

P302 + P352 IF ON SKIN: Wash with plenty of water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove lenses, if present and easy to do. Continue rinsing.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364 Take off contaminated clothing and wash it before reuse.

P314 Get medical advice and attention if you feel unwell.

Storage: Not applicable.

Disposal: P501 Dispose of contents and container in accordance with all local, regional,national

Hazardous ingredients: Methacrylated monomers, Methacrylated oligomers, Photoinitiators.

Supplemental label elements: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings: Not applicable.

Tactile warning of danger: Not applicable.

2.3 Other hazards

Other hazards which do not result in classification: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures: Mixtures

Product/ingredient name	Identifiers	Composition (%)	Classification Regulation (EC) n. 1272/2008 [CLP]

Methacrylated monomers	(Patent)	N/A	Ingestion Harmful 2, H302 Skin Sens. 1, H317	Eye Irrit. 2, H318 Aquatic Chronic. 3, H412
Methacrylated oligomers	(Patent)	N/A	Eye Irrit. 2, H318	STOT SE3, H335
Photoinitiator	(Patent)	N/A	Skin Sens. 1, H317	Aquatic Chronic 2, H411

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

SECTION 4: First-aid measures

4.1 Description of first aid measures

General advice: Consult a physician. Show this safety date sheet to the doctor in attendance.

Skin contact: Wash skin with soap and water for at least 20 minutes. Remove any contaminated clothing and shoes and clean before reuse. Seek medical attention if irritation develops.

Eye contact: Immediately remove the contact lenses and rinse the eyes continuously with clean water for at least 15 minutes. Seek medical attention.

Inhaled: Remove the exposed person from source of exposure into fresh air. Seek medical attention if any irritation develops. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, or belt.

Ingestion: Rinse mouth with water and keep the fresh air around the victim. Stop feeding anything and seek medical attention if the victim is unconscious or feels sick.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact: No known significant effects or critical hazards.

Inhalation: May cause respiratory irritation.

Skin contact: Causes skin irritation. May cause an allergic skin reaction.

Ingestion: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following: pain or irritation, watering, redness.

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing.

Skin contact: Adverse symptoms may include the following: irritation, redness.

Ingestion: No known significant effects or critical hazards.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments: No specific treatment.

SECTION 5: Fire-fighting measures

5.1 Extinguishing Media

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Hazards from the substance or mixture: This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products: No specific data.

5.3 Advice for firefighters

Special protective actions for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Small spill: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product.

6.4 Reference to other sections

See Section 1 for emergency contact information.

See Section 8 for information on appropriate personal protective equipment.

See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 Precautions for safe handing

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous.

Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations: Not available.

Industrial sector specific solutions: Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values: No date available.

Biological limit values: No date available.

DNEL/DMEL: No DNELs/DMELs available.

PNEC: No PNEC available.

8.2 Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Individual protection measures & Hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be

allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection: Safety glasses with side-shields conforming to EN166.Use equipment for eye protection tested and approved under appropriate government standards such as EN 166(EU).

Skin protection: Wear impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace. Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection: Wear dust mask when handing large quantities.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties

Physical state	Liquid
Colour	Clear
Odour	Ester-like Odor
Melting point/freezing point	-35℃- lit.
Boiling point or initial boiling point and boiling rang	158℃ / 67mmHg(lit .)
Flammability	No date available
Lower and upper explosion limit/flammability limit	No date available
Flash point	126.5℃
Auto-ignition temperature	No date available
Decomposition temperature	No date available
PH	No date available
Kinematic viscosity	No date available
Solubility	Almost insoluble in water, good solubility in most organic solvents.
Partition coefficient n-octanol/water(log value)	No date available
Vapour pressure	No date available
Density and/or relative density	1.122 g/mL at 25℃（lit.）
Relative vapour density	No date available

Particle characteristics	No date available

SECTION 10: Stability and reactivity

10.1 Reactivity: No data available
10.2 Chemical stability: Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions: Hazardous polymerization may occur. Uncontrolled polymerization may cause rapid evolution of heat and increase in pressure that could result in violent rupture of sealed storage vessels or containers.
10.4 Conditions to avoid: Light, electrostatic discharge, heat, humidity.
10.5 Incompatible materials: Polymerization initiators, including peroxides, strong oxidizing agents, alcohols, copper, copper alloys, carbon steel, iron, rust, and strong bases.
10.6 Hazardous decomposition products: Hazardous decomposition products may include oxides of carbon, nitrogen and various hydrocarbon fragments.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Oral: No date available
Inhalation: No date available
Dermal: No date available
Skin corrosion/irritation
No date available
Serious eye damage/irritation
No date available
Respiratory or skin sensitization
No date available
Germ cell mutagenicity
No date available
Carcinogenicity
No date available
Reproductive toxicity
No date available
STOT-single exposure
No date available
STOT-repeated exposure
No date available
Aspiration hazard
No date available

SECTION 12: Ecological information

12.1 Toxicity
There is no date available.

12.2 Persistence and degradability
There is no date available.

12.3 Bioaccumulative potential
There is no date available.

12.4 Mobility in soil
There is no date available.

12.5 Results of PBT and vPvB assessment
PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects
There is no date available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Product
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste: The classification of the product may meet the criteria for a hazardous waste.

Packaging
Methods of disposal: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions: This material and its container must be disposed of in a safe way. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.

14.2 UN Proper Shipping Name

ADR/RID: unknown
IMDG: unknown
IATA: unknown

14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.

14.4 Packing group, if applicable

ADR/RID: Not dangerous goods.	IMDG: Not dangerous goods.	IATA: Not dangerous goods.

14.5 Environmental hazards

ADR/RID: No	IMDG: No	IATA: No

14.6 Special precautions for user

There is no data available.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

There is no data available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV: None of the components are listed.

Substances of very high concern: None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles: Not applicable.

Other EU regulations Europe inventory: Not determined.

Ozone depleting substances (1005/2009/EU): Not listed.

Prior Informed Consent (PIC) (649/2012/EU): Not listed.

Seveso Directive: This product is not controlled under the Seveso Directive.

National regulations D. Lgs. 152/06: Not classified.

15.2 Chemical safety assessment: This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Information on revision

Creation Date	August 13,2021
Revision Date	--

Abbreviations and acronyms

ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]

DMEL = Derived Minimal Effect Level

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement

PBT = Persistent, Bioaccumulative and Toxic

PNEC = Predicted No Effect Concentration

RRN = REACH Registration Number

vPvB = Very Persistent and Very Bioaccumulative

Data sources: REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.