

SAFETY DATA SHEET

SECTION 1

Identification of the substance/preparation and the company/undertaking

1.1 Product identifier

| | |
|-------------------|----------------|
| Product name | UTR 3100 |
| CAS No. | Not applicable |
| EC No. | Not applicable |
| Molecular formula | Not applicable |

1.2 Details of the supplier of the safety data sheet

| | |
|-----------------|--|
| Company name | Shanghai Union Technology Corporation |
| Address | Room 102, Unit 40, 258 Xinzhuan Rd, Songjiang High Science & Technology Park, Caohejing Developing Zone, Shanghai, China |
| Postcode | 201612 |
| Fax | 021-6497 8786*202 |
| Phone | 021-6497 8786; 400-138-8966 |
| E-mail | enquiry@uniontech3d.cn |
| Emergency phone | 400-138-8966 (24 h) |

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

| | |
|----------------------|--|
| Identified use | A liquid stereolithography material for manufacturing of 3D-printed to produce prototypes. |
| Uses advised against | Mixtures containing unreacted liquid monomer intended to come into contact with skin or nails. |

SECTION 2 Hazards Identification

2.1 Classification of the substance or mixture

| | | | | |
|---|-----------------|-------|------|--|
| According to Regulation (EG) No.1272/2008 [CLP] | Skin sens. | Cat.1 | H317 | Cause skin irritation. |
| | Aquatic Chronic | Cat.2 | H412 | Toxic to aquatic life with long-lasting effects. |
| | Aquatic Acute | Cat.2 | H420 | Toxic to aquatic life. |

2.2 Label elements

Pictogram



Signal word

Warning

| | | |
|---------------------------------|----------------|--|
| Hazard statements | H317 | May cause an allergic skin reaction |
| | H412 | May cause long lasting harmful effects to aquatic life. |
| Precautionary statements | | |
| Protective measures | P280 | Wear protective gloves/eye protection/face protection. |
| | P272 | Contaminated work clothing should not be allowed out of the workplace. |
| Accident response | P302+P352 | IF ON SKIN: Wash with soap and water. |
| | P362+P364 | Take off contaminated work clothing and wash it before use. |
| Storage | Not applicable | |
| Disposal | P273 | Avoid release to the environment. |
| | P501 | Dispose of contents/container in accordance with local/regional/national/international regulation. |

2.3 Other hazards

Not classified as PBT or vPvB.

SECTION 3 Composition/information on ingredients

3.1 Substances

Mixture.

3.2 Mixtures

| Component(s) | % w/w |
|----------------|--------|
| Acrylates | 20-48 |
| Epoxy resin | 25-60 |
| Photoinitiator | 0.5-10 |

Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed in section 8.

SECTION 4 First aid measures

4.1 Description of first aid measures

| | |
|---------------------|--|
| Ingestion | Rinse mouth immediately and do not induce vomiting. Keep person under observation. If such person becomes uncomfortable, get medical attention. |
| Skin Contact | Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention promptly if irritation or symptom occur after washing. Wash contaminated work clothing before use. |
| Eye Contact | Continue to rinse for several minutes under running water with eyelids held open. Get medical attention. |

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11. Further important symptoms and effects are so far not known.

4.3 Indication of the immediate medical attention and special treatment needed

Note to physician.

Treatment Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5 Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media Water spray, dry powder, CO₂.

Unsuitable extinguishing media Water jet.

5.2 Special hazards arising from the substance or mixture

Hazards during fire-fighting Harmful vapours.
Evolution of fumes/fog.

High temperature may cause spontaneous polymerizing reaction generating heat/pressure. Closed containers may rupture or explode during a run away polymerization. Use water spray or fog to reduce temperature of containers.

5.3 Advice for fire-fighters

Protective equipment Wear a self-contained breathing apparatus and full protective clothing.

SECTION 6 Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Protective equipment Wear a self-contained breathing apparatus and full protective clothing.

Non-emergency responders Avoid contact with skin and eyes.
Keep away from heat, sparks and open flame.

Emergency responders Use protective gloves, goggles and suitable protective clothing.
In case of inadequate ventilation, use respiratory protection.

6.2 Environmental precautions

Contain contaminated water/firefighting water. Avoid release to the environment. Do not discharge into drains/surface water/groundwater.

6.3. Methods and material for containment and cleaning up

Remove sources of ignition. Absorb with sand or other inert absorbent. Spillage may be stored as chemical waste in approved area.

SECTION 7 Handling and storage

7.1 Precautions for safe handling

Keep away from heat, sparks and open flame. Use mechanical ventilation in case of handling which causes formation of vapors. Handle and open container with care. Wear full protective clothing for prolonged exposure and/or high concentration. Take precautionary measures against static discharges. Handle and open container with care. Avoid contact with skin and eyes.

7.2 Conditions for safe storage, including any incompatibilities

Protect from light, including direct sunrays. Keep containers tightly closed. Store in original container in a dry and well-ventilated place at room temperature (<35 °C). Do not expose to temperature above 60 °C for more than 24 hours. High temperature may cause spontaneous polymerization.

7.3 Specific end use(s)

Do not expose to the daylight.

SECTION 8 Exposure controls/personal protection

8.1 Control parameters

| Component(s) | Exposure limit |
|--------------|--|
| Epoxy resin | ACGIH TLV (US, 2/2010). TWA: 5.0 mg/m ³ , (as P) 8 h |

Biological limit: No data available.

8.2. Exposure controls

Appropriate engineering controls

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Individual protection measures, such as personal protective equipment (PPE)

| | |
|----------------------------|--|
| Skin protection | Wear suitable gloves. Gloves should be stored correctly and changed regularly, especially if excessive exposure. |
| Eye/face protection | Wear eye/face protection. Wear approved chemical safety goggles where eyes exposure must be provided. |
| Other | Keep working clothes separately. Take off contaminated clothing immediately. Wash soiled clothing before reuse. Keep away from food, drinks and animal feed. Wash hands thoroughly after handling. |

SECTION 9 Physical and chemical properties

| | | | |
|------------------------------|---------------------|---|--|
| Appearance: | Opaque white liquid | Relative density (g/cm³): | ~1.10 (water=1) |
| pH: | Not applicable | Density (g/cm³): | ~1.10 |
| Melting point (°C): | Not applicable | Solubility: | good solubility with most organic solvents |
| Boiling point (°C): | Not applicable | Solubility (water): | Not applicable |
| Softening point (°C): | Not applicable | Partition coefficient: | Not applicable |
| Flash point (°C): | Not applicable | Automatic ignition temperature (°C): | Not applicable |
| Evaporation rate: | Not applicable | | |

| | | | |
|--|----------------|--|----------------|
| Burning time: | Not applicable | Decomposition temperature (°C): | Not applicable |
| Burning rate: | Not applicable | Conductivity: | Not applicable |
| Flammability (solid, gas): | Not applicable | Molecular weight (g/mol): | Not applicable |
| Explosive property: | Not applicable | Flammable limits (lower): | Not applicable |
| Vapor pressure (kPa): | - | Viscosity (@ 30 °C, mPa · s): | ~214 |
| Vapor density (g/cm³): | Not applicable | Combustion heat (kJ/mol): | Not applicable |
| VOC content: | Not applicable | Critical pressure (MPa): | Not applicable |
| Dust explosion: | Not applicable | Critical temperature (°C): | Not applicable |

SECTION 10 Stability and reactivity

10.1 Chemical stability:

Stable under normal temperature conditions. Stable if stored and handled as prescribed/indicated.

10.2 Reactivity

See part 10.2.

10.3 Possibility of hazardous reactions

Stable if stored and handled as prescribed/indicated.

10.4 Conditions to avoid

Avoid heat, flames and other sources of ignition. Avoid exposure to high temperature, direct sunlight or ultra violet (UV) radiation.

10.5 Incompatible materials

No data available.

10.6 Hazardous decomposition product(s)

Stable if stored and handled as prescribed/indicated.

SECTION 11 Toxicological information

11.1 Information on toxicological effects

| Stable Acute toxicity | | | |
|-----------------------|--------------------------------------|-------------|----------|
| Component(s) | Results | Dosage | Exposure |
| Acrylates | LD ₅₀ acute oral rat | 5500 mg/kg | - |
| | LD ₅₀ acute dermal rabbit | >2000 mg/kg | - |
| Epoxy resin | LD ₅₀ acute dermal rabbit | >2000 mg/kg | - |
| Photoinitiator | LD ₅₀ acute dermal rabbit | >2000 mg/kg | - |

Irritation or corrosion

| Component(s) | Results | Cat. | Count | Exposure | Observation |
|----------------|----------------|----------------|-------|----------|-------------|
| Photoinitiator | Eye irritation | animal studies | - | - | - |

Germline mutagenicity: No data available.

Carcinogenicity: No data available.

Reproductive toxicity: No data available.

Specific target organ toxicity – single exposure No data available.

Specific target organ toxicity – repeated exposure No data available.

Inhalation No data available.

SECTION 12 Ecological information

12.1 Toxicity

| Component(s) | Results | Cat. | Exposure |
|--------------|---------------------------|---------|----------|
| Acrylates | EC ₅₀ 112 mg/L | Daphnia | 24 h |
| | LC ₅₀ 30 mg/L | Fish | 96 h |

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative 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

No data available.

SECTION 13 Disposal considerations

13.1 Waste treatment methods

Do not discharge into drain/surface water/groundwater. Dispose of in accordance with national, state and local regulations. Incinerate under approved controlled conditions, using incinerators for the disposal for organic chemicals. Decontaminate empty drums before recycling.

SECTION 14 Transport information

14.1 UN-Number

Not classified as a dangerous good under transport regulations.

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

Toxic to aquatic life with long lasting effects.

14.6 Special precautions for user

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14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

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SECTION 15 Regulation information

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

If information other than the information in relation to safety, health and environmental regulations / legislations what is mentioned elsewhere in this Safety Data Sheet is required, please use the information listed in Section 1 to inquire whether that specific information is available. Related information about the separate components in the mixture can be accessed the same way.

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for the separated components (100 %) listed in this document.

SECTION 16 Other information

This Safety Data Sheet was prepared in accordance with EC Regulation (EC) No. 453/2010.

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

Legend

Note: Not all of the following are necessarily contained in the Safety Data Sheet.

| | |
|-----------------------|--|
| IOELV | Indicative Occupational Exposure Limit Value. |
| WEL | Workplace Exposure Limit. |
| Bmgv | Biological Monitoring Guidance Value. |
| Sen. | Capable of causing respiratory sensitization. |
| Sk | Can be absorbed through skin. |
| Cara | Capable of causing cancer and/or heritable genetic damage. |
| CHAN | Chemical Hazard Alert Notice. |
| COM | The company aims to control exposure in its workplace to this limit. |
| LTEL | Long Term Exposure Limit. |
| STEL | STEL Short Term Exposure Limit. |
| TWA | Time Weighted Average. |
| STOT SE | Specific Target Organ Toxicity – Single Exposure. |
| Repr. | Reproductive toxicity. |
| Aquatic acute/chronic | Hazardous to the aquatic environment. |