Safety Data Sheet

3D SLA Resin
ENG Tough

1.Chemical Product And Company Identification

Product Name

3DSR – ENG Tough

Application

3D printing with UV-Visible light 3D-printer for high precision printing, especially for snap-fit objects or assembly applications which need some flexibility.

Supplier

Kudo3D Inc.

Address

11700 Dublin Blvd., Suite 220, Dublin, CA 94568, USA

Telephone

1-925-399-4242

Website

www.kudo3d.com

Email

contact@kudo3d.com

Emergency Phone Numbers

911

2.Hazards Identification

GHS Classification

Serious eye damage/ irritation	Category 2
Skin corrosion/ irritation	Category 2
Sensitization, skin	Category 1B
Hazardous to the aquatic environment, chronic hazard	Category 3

GHS Label Elements

Signal Word

Warning

Hazards Statements

H315 - Causes skin irritation

H317 – May cause an allergic skin reaction

H319 - Causes serious eye irritation

H335 - May cause respiratory irritation

H412 - Harmful to aquatic life with long lasting effects

Prevention Precautionary Statements

P235 + 410 - Keep cool. Protect from sunlight.

P264 - Wash face, hands and any exposed skin 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/eye protection/face protection.

Response Precautionary Statements

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

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

P332 + P313 - If skin irritation occurs: Get medical advice/attention.

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

P337 + P313 - If eye irritation persists: Get medical advice/attention.

P362 - Take off contaminated clothing and wash before reuse.

P363 - Wash contaminated clothing before reuse.

P501 - Dispose of contents/container to an approved waste disposal plant.

3.Composition/ Information on Ingredients

Mixture

Component	CAS No.	%Weight
Photoinitiator	Proprietary	1-10%
Acrylate Monomer	Proprietary	20-50%
Acrylate Oligomer	Proprietary	40-70%

4.First-aid Measures

Inhalation

Remove victim to fresh air immediately. Give oxygen or artificial respiration if needed. Seek emergency medical attention.

Skin Contact

Remove contaminated clothing and wash with soap and clean water for 15 minutes at least. Seek medical attention.

Eye Contact

Flush eyes with plenty of clean water for 30 minutes at least and retract eyelids often. Obtain emergency medical attention.

Ingestion

Do Not induce vomiting. Obtain emergency medical attention.

5.Fire-Fighting Measures

Extinguishing Media

Dry chemical, CO_2, foam, water spray/ fog

Fire and Explosion Hazards

High temperature, inhibitor depletion, accidental impurities, exposure to radiation or oxidizers may cause polymerization accompanied by heat and pressure generation inducing rupture/ explosion of containers.

Special Protective Equipment and Precautions for Fire-fighters

Fire fight from safe distance/ protected location with full protective clothing and self-contained breathing apparatus. Water spray/ fog can be used for cooling.

6.Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures

Wear suitable protective clothing. Extinguish all ignition sources, keep unnecessary people away, ventilate area, and absorb spilled material with inert absorbent.

Environmental Precautions

Do not release into drain, soil, surface water, groundwater.

Waste Disposal Methods

Contain spills in an appropriate container for disposal with applicable regulations.

7.Handling and Storage

Precautions for Safe Handling

While handling this product, wear suitable protective gloves, protective clothing, eye protection and face protection equipment for safety and avoid contact with eyes, skin or hair. Handle this product in a well-vented area for preventing from inhalation. Keep away from heat source such as a heating oven. Wash hands and exposed skin thoroughly after operation each time.

Conditions for safe storage

Avoid from light, strong oxidizers, strong acids and bases, radical initiators, heat, sparks, open flame, or any sources of ignition. Must be stored in a cool(15-35^{o}C/59-95^{o}F) and dry place with closed opaque containers. Do not blanket or mix with oxygen-free gas to prevent ineffectiveness of

polymerization inhibitors. Keep this product out of reach of kids and pets.

8.Exposure Controls/ Personal Protection

Respiratory Protection

NIOSH/ MSHA approved respiratory equipment is recommended.

Eye Protection

Tight-fitting chemical safety goggles and face shield should be equipped to avoid from any splashing and vapor. Do not wear contact lenses for safety.

Skin Protection

Wear protective gloves (neoprene or nitrile), apron, boots, long pants, and head and face protection, prevent from any contact of skin. Equipment should be cleaned thoroughly after operation each time.

Engineering Controls

Ventilation system or outdoors for fresh air supply.

Other Hygienic Practices

Emergency eyewash and safety shower facility are well-prepared. Wash hands and shower thoroughly after handling. Do not eat, drink, smoke, or any behavior unrelated to operation in working area.

9.Physical and Chemical Properties

Appearance	Grey viscous liquid
Odor	Low acrylic ester odor
pH	-
Melting Point	-
Boiling Point	>110°C (>230°F)
Flash Point	>110°C (>230°F)
Autoignition	-
Lower Explosion limit	-
Upper Explosion limit	-
Vapor Pressure(mmHg)	Negligible
Vapor Density(air = 1)	-
Specific Gravity(H_2O=1 at 25°C)	1.05
Solubility in Water	Negligible

10.Stability and Reactivity

Chemical Stability

Stable under appropriate storage and use as indicated.

Possibility of Hazardous Reactions

Hazardous polymerization may occur while contact light, heat, radical initiators, inert gas or over

shelf life.

Conditions to Avoid

Light, heat, peroxides, oxidizing agents, radical initiators, metal ions, metal oxides, strong acids and bases, inert gas, oxygen scavengers, any ignition sources, and moisture.

11.Toxicological information

Routes of Exposure

Inhalation, Skin Contact, Eye Contact, Ingestion

Inhalation

Inhalation vapor of this product may cause irritation of chest and nasal passages, inducing coughing, sneezing, and nausea.

Skin Contact

Contact skin may cause irritation, skin sensitivity, and blisters, long-term exposure may cause allergic reactions, redness and dermatitis.

Eye Contact

May cause eyes irritation, pain, and redness, long-term or repeated exposure may cause conjunctivitis.

Ingestion

May cause gastrointestinal discomfort, and nausea.

12.Ecological information

Ecotoxicity	Harmful to aquatic life. Dispose in accordance with applicable regulations.
Persistence and Degradability	-
Bioaccumulative Potential	-
Mobility in Soil	-
Other Adverse Effect	-

13.Disposal Consideration

Do not release to drains, soil, surface waters and groundwater. Dispose this product and container in accordance with national, state, and local regulations.

14.Transport Information

UN Number	-
UN Transportation Name	-
Transport Hazard Class	-
Packing Group	-
Environmental Hazards	-

Special Transportation Method and Attention	**-**

15.Regulatory Information

Applicable Regulations (Taiwan)

1.Occupational Safety and Health Act

2.Regulation of Labelling and Hazard Communication of Hazardous Chemicals

3.Methods and Facilities Standards for the Storage, Clearance and Disposal of Industrial Waste

4.Regulations Governing Road Traffic Safety

5.Toxic Chemical Substances Control Act

16.Other Information

Reference	1.Globally Harmonized System of Classification and Labeling of Chemicals (GHS Purple Book) 2.Recommendations on the Transport of Dangerous Goods (UN Orange Book) 3.Chinese Toxic Chemicals Database, Environmental Protection Administration 4.GHS Harmful Substances Database, Council of Labor Affairs
Provided By	Kudo3D Inc **Address :** Rm. B8, 1F., No.1, Lixing 1st Rd., East Dist., Hsinchu City 300, Taiwan(R.O.C.) **Telephone :** +886 35799963
Provided Person	**Title :** Engineer，**Name :** Benson Lin
Created Date	2018.2.1
Note	The"-" symbol means there's no current available data or information.

The SDS is prepared from information we receive and measure, data and information herein listed is used only for this product, and is not applicable for combination with any other material or any other use which isn't mentioned. We make no warranty, expressed, or implied regarding the correctness of the information and aren't responsible for any damage, lost, or injury of its use. User is responsible for judgement the safety of conditions/ places/ methods of this product in specific use.