

SAFETY DATA SHEET FOR CHEMICAL PRODUCTS (SDS)

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Applicant Name : SHENZHEN ESUN INDUSTRIAL CO., LTD.

Applicant Address : WUHAN UNIVERSITY BUILDING A401, NO.6 YUEXING 2 ROAD,
NANSHAN DISTRICT, SHENZHEN, CHINA 518057

Product Name : Hard-Tough Resin

Received Date : May 30, 2022

Compilation Period : May 30, 2022 to June 23, 2022

Regulatory Requirements : As requested by the applicant, the Safety Data Sheet is prepared according to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) Rev_9 (2021) .



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SECTION 1. Identification of the substance/preparation and company

1.1 Product Identification	: Hard-Tough Resin
1.2 Model No.	: /
1.3 Recommended Use	: 3D Printing
1.4 Manufacturer Name	: SHENZHEN ESUN INDUSTRIAL CO., LTD.
1.5 Manufacturer Address	: WUHAN UNIVERSITY BUILDING A401, NO.6 YUEXING 2 ROAD, NANSHAN DISTRICT, SHENZHEN, CHINA 518057
1.6 Manufacturer Tel	: 86-755-26031979
1.7 Manufacturer Fax	: /
1.8 Manufacturer Email	: BRIGHT@BRIGHTCN.NET
1.9 Emergency Phone	: /

SECTION 2. Hazards identifications

2.1 Hazard Class:

According to Globally Harmonized System of Classification and Labelling of Chemicals (GHS) (part 2~4), classification of risk categories.

Skin corrosion/irritation, categories 2

Sensitisation, skin, categories 1

Serious eye damage/eye irritation, categories 2

2.2 Pictograms:



2.3 Signal word:

Warning

2.4 Hazard description:

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.



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H319 Causes serious eye irritation

2.5 Precautionary description:

P264 Wash hand and face thoroughly after handling

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

2.6 Other hazard

PBT and vPVB: None

SECTION 3. Composition / information on ingredients

Ingredient(s) of the product: Mixture

Substance name	Conc. (%)	CAS. No
Urethane acrylate	46	68987-79-1
2-Phenoxyethyl acrylate	15	48145-04-6
Dipropylene glycol diacrylate	15	57472-68-1
Ethoxylated trimethylolpropane triacrylate	20	28961-43-5
Phenylbis(2,4,6-trimethylbenzoyl)phosphine oxide	3	162881-26-7
UV Color pigment	0.5	1333-86-4/482-89-3
BYK 1794	0.5	128-37-0

SECTION 4. First aid measures

General advice: Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

4.1 Following inhalation:

Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately

4.2 Following skin contact:

Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feeling uncomfortable.



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4.3 Following eye contact:

In case of contact may cause irritation, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician immediately if eyes are hurt.

4.4 Following ingestion:

Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

SECTION 5. Firefighting measures

5.1 Hazardous Characteristics:

No hazardous characteristics.

5.2 Extinguishing Media:

Dry powder, Chemical foam, Carbon dioxide, water mist.

5.3 Firefighting procedures:

As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.

Take all precautions to avoid mixing with combustibles.

5.4 Hazardous combustion products:

Carbon monoxide, organic volatiles

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear appropriate protective measures (SEE SECTION 8).

6.2 Environmental precautions:

Do not empty into drains. If the product contaminates lakes, rivers or sewages, inform appropriate authorities in accordance with local regulations.

6.3 Cleaning method:

Remove by liquid absorbing material (e.g. kieselguhr) . Adhered or collected material should be promptly disposed of. Disposal of discarded waste/pollutants refers to SECTION 13.



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SECTION 7. Safe handling and storage

7.1 Handling Notes:

Keep indoor ventilation or local exhaust device.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Use only outdoors or in a well-ventilated area.

7.2 Storage Notes:

Stored in cool and dry condition.

Do not store with incompatible material (see section 10.2)

SECTION 8. Exposure controls / personal protection

8.1 Occupational Exposure Limit:

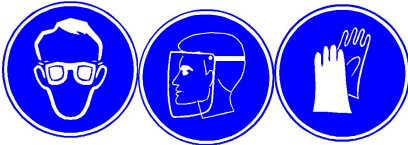
No relevant data

8.2 Engineering Control:

Provide adequate ventilation. Where reasonably practicable, this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and solvent vapour below the OEL, suitable respiratory protection must be worn.

Ensure that eyewash stations and safety showers are proximal to the work-station location.

8.3 Personal Protection:

General requirement:	
Respiratory:	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Eyes:	Wear protective goggle (Conform to EC EN 166 or US-NIOSH).
Hands:	Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU),US F739 or AS/NZS 2161.1 standard.

8.4 Sanitary Measure:

Forbid smoking, eating and drinking in working places. Washing hands after handling products.



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SECTION 9. Physical and chemical properties

Appearance and Color	Blue/White/Black/Gray liquid
Odour	Slight, ester-like
PH value	5.0
Flammability	Noncombustible
Density(g/cm³)	1.089(25°C)
Relative steam density (air = 1)	No Data
Vapor pressure(MPa)	No Data
Octanol/water partition coefficient	No Data
Viscosity	200-300mPa·s (25°C)
Flash point(°C,Closed cup)	>380
Boiling point(°C)	No Data
Melting point (°C)	No Data
Evaporation rate (kg/s)	No Data
UEL %(V/V)	Not Applicable
LEL %(V/V)	Not Applicable
Auto-ignition temperature(°C)	No Data
Decomposition temperature(°C)	No Data
Solubility	Soluble in ethanol, ethyl acetate, benzene and other organic solvents, insoluble in water

SECTION 10. Stability and reactivity

10.1 Stability:

Stable under recommended storage and handling conditions (See section 7).

10.2 Material for avoiding:

Strong oxide, acid and alkali, Strong reducing agent.

10.3 Contact conditions for avoiding:

Sunlight, high temperature.



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10.4 Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11. Toxicological information

11.1 Acute toxicity:

Based on available data, the classification criteria are not met.

11.2 Skin corrosion/irritation:

Skin irritation

11.3 Serious eye damage/irritation:

Eye irritation

11.4 Respiratory or skin sensitisation:

Sensitisation, skin, categories 1

11.5 Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

11.6 Carcinogenicity:

Based on available data, the classification criteria are not met.

11.7 Reproductive toxicity:

Specific target organ toxicity, single exposure; Respiratory tract irritation, categories 3

11.8 STOT-single exposure:

Specific target organ toxicity, single exposure; Respiratory tract irritation, categories 3

11.9 STOT-repeated exposure:

Specific target organ toxicity, single exposure; Respiratory tract irritation, categories 3

11.10 Aspiration hazard.:

Based on available data, the classification criteria are not met.

SECTION 12. Ecological information

12.1 Toxicity:

No data available.



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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 Other Dangers:

PBT and vPVB evaluation results: Not applicable

SECTION 13. Disposal considerations

13.1 Handling method for waste:

Handling waste according to the local regulations. Contact specific waste disposal company or companies recommended by local laws.

13.2 Handling method for uncleaned packaging

Processing as general waste processing after the empty container.

SECTION 14. Transport information

Land transport(ADG): Not regulated for transport of dangerous goods.

Air transport(ICA0-IATA/DGR): Not regulated for transport of dangerous goods.

Sea transport(IMDG-Code/GGVSee): Not regulated for transport of dangerous goods.

Transport in bulk according to Annex II of MARPOL and the IBC code. Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Packaging Label	None
UN NO	None
Technical name	None
Transport hazard class	None
Subsidiary hazard class	None



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Packing group	None
Special Provisions	None

SECTION 15. Regulatory information

15.1 Safety, health and environmental regulations / laws for pure substances or mixtures

Catalogue of hazardous chemicals (2015 Edition)

Not included in the list.

15.2 Safety assessment of chemical substances

Not evaluated

SECTION 16. Other information

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the result of its use, this information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

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