

SDS**Safety Data Sheet**

3F., No. 287, Niupu Rd., Xiangshan Dist.,
Hsinchu City 300, Taiwan (R.O.C.)

Phrozen Resin
Water Washable Black Resin

Tel | 886-3-540-0076

E-mail | Ray.wu@phrozen3d.com

Website | <http://www.phrozen3d.com>

1. Identification of the Substance/Preparation and of the Company/Undertaking

Product Name	Phrozen Water Washable Black Resin
Synonyms	-
Chemical Name	Mixture of Acrylate, Photoinitiator, and Pigment
Type	Liquid
Application	UV/Visible Light curable resin for 3D printing
Manufacturers	普羅森科技股份有限公司 Phrozen Tech Co. Ltd. +8863-5400076 3F., No. 287, Niupu Rd., HSIN CHU CITY 30091, Taiwan Ray.wu@phrozen3d.com
Emergency Phone	+886916781577 Local police number

2. Hazards Identification

Chemical Hazard Classification : Serious eye damage/eye irritation category 2B, Skin sensitizer category 1.
Symbol Contents :
Symbol : Exclamation mark.
Signal word : Warning.
Hazard Statement : Causes eye irritation, May cause allergic skin reaction.
Precautionary Statement : Store in well-ventilated place. Keep away from ignition sources – No smoking. Do not wear contact lenses. Chemical safety goggles are recommended. Avoid eyes and skin contact. Wear suitable protective equipment. Call a doctor or physician if you feel unwell.
Other Effects : -----

3. Ingredients

Hazardous ingredient name	Concentration WT%	CAS No.
Urethane acrylate oligomer	65	73324-00-2
Acryloyl morpholine	15	5117-12-4
Ethoxylated Trimethylolpropane Triacrylate	15	28961-43-5
Diphenyl(2,4,6-trimethylbenzoyl)-phosphine oxide	3	75980-60-8
Silica	2	7631-86-9

4. First Aid Measures

The First-aid Measures for Different Exposure Routes :
Inhalation : Remove to fresh air. If symptoms persist, obtain medical attention.
Skin Contact : Immediately wash with soap and water. Wash contaminated clothing before reuse. Get medical attention if symptoms occur.
Eye Contact : Flush with lukewarm water at least 15 minutes. Seek medical advice.
Ingestion : Clean with water and drink plenty of water. Induce vomiting. Keep individual calm. Obtain medical attention.
The Most Important Symptoms and Hazardous Effects : Nausea and irritating.

The Protection of First-aides : Wear impervious gloves. Avoid contacting the pollutant.
 Notes to Physicians : Do not induce vomiting. Never give anything by mouth to an unconscious person.

5.Fire-Fighting Measures

Suitable Fire Extinguishing Media : Carbon dioxide, foam or dry chemical.
 Specific Hazards May Be Encountered During Fire-fighting : May cause carbon monoxide, acetone, aldehyde, ammonia and some organism materials.
 Specific Fire-fighting Methods : Move to the safe area.
 Special Equipment for The Protection of Firefighters : Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals

6.Accidental Release Measures

Personal Precautions : Wear suitable protective equipment. Clean the floor to prevent from slipping and falling.
 Environmental Precautions : Extinguish the flame. Do not flush into surface water or sanitary sewer system. Advise water authority if spillage has entered water course or drainage system.
 Methods for Cleaning Up : Spontaneous hazardous polymerization may occur. Eliminate sources of ignition. Use eye and skin protection. Maintain adequate ventilation. Soak up with inert absorbent. Store in a half filled, closed container until disposal.

7.Handling and Storage

Handling : Wear suitable protective equipment.
 Avoid leak.
 Keep away from light and heat.
 Avoid eye and skin contact.
 Keep the place ventilated.
 Storage : Keep away from flame and sunlight.
 Keep in a cool, well ventilated area away from heat, sparks and open flame.
 Keep container tightly sealed.

8.Exposure Controls/Personal Protection

Engineering Controls : If handling results in aerosol or vapor generation, local exhaust ventilation is recommended. Do not smoke and eat in the work area. Keep the workplace clean.
 Control Parameters :

Ingredients	Time weighted average exposure limits (TWA/8hr)	Short-term exposure limits (STEL)	Maximum exposure limits (CEILING)	Biological Standards (BEIs)
Not Available	Not Available	Not Available	Not Available	Not Available

Personal Protection :
 Respiratory : Respiratory equipment and gas mask.
 Hand protection : Use protective gloves.
 Eyes : Do not wear contact lenses. Chemical safety goggles are recommended.
 Skin : Avoid skin contact. Use impermeable gloves and protective clothing as necessary to prevent skin contact.
 Wash contaminated clothing before reuse.
 Other Hygienic Practices : Use good personal hygiene practices. Wash hands and face before eating and drinking. Exercise more to keep healthy. Ingest food which contains vitamins and minerals. Do physical examination regularly.

9. Physical and Chemical Properties

Physical State(Appearance, Color) : Gray liquid	Odor : Mild
Odor Threshold : Not Available	Melting Point : Not Available °C
pH Value : Not Available	Boiling Point : > 250 °C
Flammable (Solid, Gas) : Not Available	Flash Point : > 113 °C
Decomposition Temp. : Not Available °C	Test Method : Closed-cup
Autoignition Temperature: Not Available °C	Explosion Limits :
	Upper(UEL) : Not Available ; Lower(LEL) : Not Available
Vapor Pressure : < Not Available mmHg (@20 °C)	Vapor Density : Not Available (Air=1)
Density : 1.10g/cm ³ (Water=1)	Solubility in Water : Not Available

Octanol-water Partition Coefficient, Kow: Not Available	Evaporation Rate : Not Available
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10. Stability and Reactivity

Stability	Stable.
Hazardous Polymerization	May occur.
Incompatibility	Avoid flammable, ignitable, heat source, spark, flame, strong oxidant, free radical initiator, peroxide and basic materials.
Hazardous Decomposition Products	Carbon monoxide, acetone, aldehyde, ammonia.

11. Toxicological Information

Acute Toxicity : Inhalation : May irritate to nose and throat.			
Skin : Irritating to skin if contact.			
Eye : The vapor may Irritate to eye.			
Ingestion : May cause headache, nausea, dizziness and tiredness.			
Ingredients	Concentration %	LD50 (Lethal Dose 50)	LC50 (Lethal Concentration 50)
Prepolymer	65	Not Available	Not Available
Acryloyl morpholine	15	Not Available	Not Available
Ethoxylated Trimethylolpropane Triacrylate	15	Not Available	Not Available
Diphenyl(2,4,6-trimethylbenzoyl)-phosphine oxide	3	Not Available	Not Available
Silica	2	Not Available	Not Available
Local Effects : May cause irritating if skin contact for a long time.			
Sensitization : Not Available			
Chronic Toxicity or Long Term Toxicity : Not Available			
Specific Effects : Not Available			

12. Ecological Information

Ecotoxicity : Not Available
Persistence / Degradability : Not Available
Bioaccumulation: Not Available
Mobility : Not Available
Other Information : Avoid the products enter into drainage or soli surface. After the product curing, it can be disposed by following local regulations.

13. Disposal Considerations

Recommended methods of Disposal : Recover or recycle if possible. Otherwise, incineration following local regulations.
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14. Transport Information

United Nation Number (UN No.) : Not Available
Proper Shipping Name : Not Available
Class : Not Available
Packing Group : Not Available
Marine pollutant (Yes/No) : No
Special delivery methods and precautions : Not Available
IATA-DGR : Not Restricted AS DGR 58 edition

15. Regulatory Information

Traffic Regulation Occupational Safety and Health Act Regulation of Labelling and Hazard Communication of Dangerous and Harmful Materials Standards of Permissible Exposure Limits of Airborne Hazardous Substances in Workplace Management Regulations for the Import, Export, Transit and Transshipment of Waste Public Hazardous Materials and Flammable Pressurized Gases Establishment Standards and Safety Control Procedures

16. Other Information

Reference documents
MSDS prepared by Organization name : Phrozen Tech Co. Ltd. Address/Telephone : No.2, Ln. 496, Niupu S. Rd., Xiangshan Dist., Hsinchu City 300, Taiwan (R.O.C.) +886916781577
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Remark : " - " = not available ; " / " = not applicable
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