

SAFETY DATA SHEET

Aqua Hyperfine, Red

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SECTION 1 : IDENTIFICATION

1.1 Product identifier

Product name Aqua Hyperfine, Red

Recommended use and restrictions on use

Recommended use For use in Phrozen 3D-printers

Restrictions on use Do not use in the situation that easily generate aerosol, steam.

1.2 Name, address and phone of manufacturer , importers or supplier

Manufacturer Phrozen Tech Co., Ltd.287 Niupu Rd, Xiangshan Dist,
Hsinchu City 30091, TAIWAN(R.O.C)

Phone +886-3621-0505

Emergency phone / Fax +886-3621-0505 / +886-3539-6591

SECTION 2 : HAZARD IDENTIFICATION

2.1 Hazard classification

Skin corrosion/irritation Category 2 , Serious eye damage/eye irritation Category 1 ,

Skin sensitization Category 1

Specific target organ toxicity-repeated exposure Category 2

Hazardous to the aquatic environment (acute hazard) Category 1

Hazardous to the aquatic environment (chronic hazard) Category 3

2.2 Signal statement

Corrosion, Exclamation mark, Health hazard, Environment



2.3 Pictograms

2.4 Signal word Danger

2.5 Hazard statements

Causes skin irritation

Causes serious eye damage

May cause an allergic skin reaction

May cause damage to organs through prolonged or repeated exposure

Very toxic to aquatic life with long lasting effects

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2.6 Precautionary statements

If medical advice is needed, have product container or label at hand.

Keep out of reach of children.

Read carefully and follow all instructions.

Do not breathe dust/fume/gas/mist/vapours/spray.

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

IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, If present and easy to do. Continue rinsing.

Immediately call a POISON CENTER/doctor.

Dispose of contents/container in accordance with local/regional/national/international regulations.

2.7 Other hazard

None

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Substances

Not relevant (mixture)

3.2. Mixtures

| Components | CAS number | Weight % | Classification acc. to GHS |
|---|------------|----------|--|
| Oxybis(methyl-2,1-ethanediyl) diacrylate | 57472-68-1 | 10 – 25% | Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Eye Dam. 1 / H318 |
| 4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride | 68958-77-0 | 10 – 25% | Skin Sens. 1 / H317 Acute Tox. 4 / H332 Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413 |
| (2,4,6-trioxo-1,3,5-triazine-1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl triacrylate | 40220-08-4 | 10-25% | Eye Dam. 1 / H318 Skin Sens. 1 / H317 Aquatic Chronic 2 / H411 |
| 4-(1-oxo-2-propenyl)-morpholine | 5117-12-4 | 10-25% | Acute Tox. 4 / H302 |

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| | | | |
|---|--------------|--------|--|
| | | | STOT RE 2 / H373 Eye Dam. 1 / H318 Skin Sens. 1 / H317 |
| 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane | 264888-31-5 | 10-25% | Acute Tox. 4 / H302 Skin Sens. 1B / H317 Aquatic Chronic 3 / H412 |
| Additives1 | Trade Secret | <2% | Skin Sens. 1A / H317 Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413 |
| Additives2 | Trade Secret | <2% | Carc. 2 / H351 |

SECTION 4 : FIRST AID MEASURES

4.1. First-aid advice and recommendations for different routes of exposure

4.1.1 Inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. In case of respiratory tract irritation, consult a physician. Provide fresh air.

4.1.2 Skin Contact

Wash with plenty of soap and water.

4.1.3 Eyes Contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, freshwater for at least 10 minutes, holding the eyelids apart.

4.1.4 Ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2. Most important symptoms and hazardous effects

None

4.3. Protection of First-aid personnel

None

4.4. Note for physician

None

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SECTION 5 : FIRE-FIGHTING MEASURES

5.1 Applicable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

5.2 Specific hazards confronted during fire fighting

Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides

5.3 Specific fire-fighting procedure

None

5.4 Specific protective equipments for fire-fighters

In case of fire and/or explosion do not breathe fumes. Co-ordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions

Wear breathing apparatus if exposed to vapours/dust/spray/gases.

6.2. Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3. Cleaning methods

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder. Covering of drains.

Place in appropriate containers for disposal. Ventilate affected area.

SECTION 7 : SAFETY HANDLING AND STORAGE

7.1. Handling

Use local and general ventilation. Use only in well-ventilated areas.

Do not eat, drink and smoke in work areas.

Remove contaminated clothing and protective equipment before entering eating areas.

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Wash hands after use.

Never keep food or drink in the vicinity of chemicals.

Never place chemicals in containers that are normally used for food or drink.

7.2. Storage

Storage at the area of cool,dry.

Keep away from heat ,direct sunlight, rainy and rapid temperature .

Storage temperature between 15°C/ 59°C to 35°C / 95°F.

Close the lid tightly when not in use.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Engineering controls

Provide adequate ventilation to the areas where the product is stored and/or handled.

8.2. Control Parameters

| Component | TWA | STEL | CEILING | BEI s |
|------------------|------------------------|-----------------------|---------|-------|
| Titanium dioxide | 10 mg / m ³ | 15 mg /m ³ | - | - |

8.3. Personal protective equipment

8.3.1 Respiratory protection

In case of inadequate ventilation wear respiratory protection.

8.3.2 Hand protection

Chemical protection gloves are suitable, which are tested according to EN 374.

For example : NBR: acrylonitrile-butadiene rubber

Material thickness : $\geq 0.6\text{mm}$

Breakthrough times of the glove material : > 480 minutes (permeation: level 6)

8.3.3 Eye protection

Use safety goggles.

8.3.4 Skin protection

Use clothing that provides complete protection to the skin.

8.4. Hygiene measures

Do not eat, drink and smoke in work areas.

Wash thoroughly after handling.

Keep clean of operation area.

Take off polluted clothing as soon as possible after work. The clothing can be re-wear only after washed in clean or discard.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|--|----------------------------------|-----------------|----------------------|
| Apperance and color | Red viscous liquid | Odor | Typical acrylate |
| Odor threshold | N/A | Melting point | N/A |
| pH value | 6-8 | Boiling point | 104.5 °C at 2.05 hPa |
| Flammable | N/A | Flash point | N/A |
| Decomposition Temp | N/A | Testing method | N/A |
| Natural Temp | 240°C | Explosive limit | N/A |
| Vapor pressure | 0.5 hPa at 86.6 °C | Vapor density | N/A |
| Density | 1.15 g /cm ³ at 25 °C | Solubility | N/A |
| Octanol/water distribution coefficient (log Kow) | N/A | Evaporaion rate | N/A |

SECTION 10: STABILITY AND REACTIVITY

10.1. Stability

Stable under normal condition.

10.2. Possible hazardous reation under specific conditions

None

10.3. Must avoid condition

UV-radiation/sunlight.

10.4. Must avoid substances

Oxidisers

10.5. Hazardous decomposed product

None

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SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Test data are not available for the complete mixture.

11.1. Exposure paths

None

11.2. Symptoms

None

11.3. Acute toxicity

| Components | route | End point | Value |
|---|-----------------------|-----------|-------------|
| 4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride | inhalation: vapour | LC50 | 11mg/l /4H |
| | inhalation: dust/mist | LD50 | 4.9mg/l/4H |
| 4-(1-oxo-2-propenyl)-morpholine | Oral | LD50 | > 588 mg/kg |
| 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane | Oral | LD50 | >2000 mg/kg |

11.4. Chronic toxicity

None

11.5. Reproductive and/or Developmental Effects

None

SECTION 12: ECOLOGICAL INFORMATION

The product has not been tested. The statement has been derived from the properties of the individual components.

12.1. Ecological toxicity

| Aquatic toxicity (acute) of components of the mixture | | | | |
|---|-----------|-----------|-----------------------|---------------|
| Components | End point | Value | Species | Exposure time |
| Oxybis(methyl-2,1-ethanediyl) diacrylate | LC50 | 4.64 mg/l | fish | 96 h |
| | EC50 | 22.3 mg/l | aquatic invertebrates | 48 h |
| | ErC50 | 16.7mg/l | algae | 72h |
| | LL50 | >100 mg/l | fish | 96 h |

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| 4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride | LC50 | 0.082mg/l | fish | 96h |
|---|-----------|-------------|-----------------------|---------------|
| | EC50 | 0.11mg/l | aquatic invertebrates | 48h |
| | EL50 | >100mg/l | aquatic invertebrates | 48h |
| (2,4,6-trioxo-1,3,5-triazine-1,3,5-(2H,4H,6H)-triazine-2,1-ethanediyl triacrylate | LC50 | 9.43mg/l | fish | 96h |
| | EC50 | 158.3mg/l | aquatic invertebrates | 72h |
| | ErC50 | 25.7mg/l | algae | 96h |
| 4-(1-oxo-2-propenyl)-morpholine | LC50 | >220mg/l | fish | 72 h |
| | EC50 | 230mg/l | aquatic invertebrates | 48 h |
| | ErC50 | >120mg/l | algae | 72h |
| 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane | EL50 | 58 mg/l | aquatic invertebrates | 48 h |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | LC50 | >90µg/l | fish | 96 h |
| | EC50 | >1175µg/l | aquatic invertebrates | 48 h |
| | ErC50 | >260µg/l | algae | 72h |
| Aquatic toxicity (chronic) of components of the mixture | | | | |
| Components | End point | Value | Species | Exposure time |
| Oxybis(methyl-2,1-ethanediyl) diacrylate | EC50 | >1,000 mg/l | microorganisms | 30 min |
| 4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride | EC50 | >1,000 mg/l | microorganisms | 3h |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | EC50 | >100mg/l | microorganisms | 3h |

12.2. Persistence and degradability

| Degradability of components of the mixture | | | | |
|--|----------------|------------------|------|--------|
| Components | Process | Degradation rate | Time | Source |
| Oxybis(methyl-2,1-ethanediyl) diacrylate | DOC removal | 90–100 % | 28d | ECHA |
| 4,4'-Isopropylidenediphenol, polymer with | carbon dioxide | 5% | 29d | ECHA |

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|---|---------------------------|-------|------|------|
| 1-chloro-2,3- epoxy propane, propane-1, 2-diol acrylate and succinic anhydride | generation | | | |
| (2,4,6-trioxo-1,3,5-triazine1,3,5(2H,4H,6H)-triy)tri-2,1-ethanediyl triacrylate | oxygen depletion | 19.7% | 28d | ECHA |
| 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane | carbon dioxide generation | 5% | 28d | ECHA |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | carbon dioxide generation | 1% | 29 d | ECHA |

12.3. Bio-accumulative potential

| Components | BCF | Log kow | BOD/COD |
|--|-----|--------------------------------|---------|
| Oxybis(methyl-2,1-ethanediyl) diacrylate | | 0.01- 0.39 (pHvalue : 7, 24°C) | |
| 4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3- epoxy propane, propane-1, 2-diol acrylate and succinic anhydride | | 1.1 (20.6°C) | |
| (2,4,6-trioxo-1,3,5-triazine1,3,5(2H,4H,6H)-triy)tri-2,1-ethanediyl triacrylate | | 1.09(pHvalue : 6.8, 25°C) | |
| 4-(1-oxo-2-propenyl)-morpholine | | -0.46(21°C) | |
| 2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane | | >2.8 - <4.9(25°C) | |
| phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide | <5 | 5.8(pHvalue : 8.3, 22°C) | |

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12.4. Mobility in soil

None

12.5. Other adverse effects

None

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste disposal methods

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

13.2. Sewage disposal method

Do not empty into drains. Avoid release to the environment.

13.3. Contaminated Packaging disposal method

Handle contaminated packages in the same way as the substance itself.

SECTION 14: TRANSPORT INFORMATION

| | |
|----------------------------|--|
| Land transport USDOT | Not classified as dangerous goods under transport regulations. |
| Sea transport IMDG | Not classified as dangerous goods under transport regulations. |
| Air transport IATA/ICAO | Not classified as dangerous goods under transport regulations. |
| Further information | N/A |
| Other requirements | N/A |

SECTION 15: REGULATORY INFORMATION

15.1. List of substances subject to authorisation (REACH, Annex XIV) / SVHC- candidate list

None of the ingredients are listed

15.2. Directive on the restriction of the use of certain hazardous substances in electrical

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and electronic equipment (RoHS)

None of the ingredients are listed

15.3. Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

None of the ingredients are listed

15.4. Regulation on persistent organic pollutants (POP)

None of the ingredients are listed.

15.5. National inventories

| Country | Inventory | Status |
|---------|------------|--------------------------------|
| AU | AU AICS | not all ingredients are listed |
| CA | DSL | not all ingredients are listed |
| CA | NDSL | not all ingredients are listed |
| CN | IECSC | all ingredients are listed |
| EU | ECSI | not all ingredients are listed |
| EU | REACH Reg. | not all ingredients are listed |
| JP | CSCL-ENCS | not all ingredients are listed |
| JP | ISHA-ENCS | not all ingredients are listed |
| NZ | NZIoC | all ingredients are listed |
| TR | CICR | not all ingredients are listed |
| TW | TCSI | all ingredients are listed |
| US | TSCA | all ingredients are listed |

Legend

| | |
|-----------|---|
| AIIC | Australian Inventory of Industrial Chemicals |
| DSL | Domestic Substances List (DSL) |
| IECSC | Inventory of Existing Chemical Substances Produced or Imported in China |
| EU | EC Substance Inventory (EINECS, ELINCS, NLP) |
| EU | REACH registered substances |
| CSCL-ENCS | List of Existing and New Chemical Substances (CSCL-ENCS) |
| ISHA-ENCS | Inventory of Existing and New Chemical Substances (ISHA-ENCS) |
| NZIoC | New Zealand Inventory of Chemicals |
| CICR | Chemical Inventory and Control Regulation |
| TCSI | Taiwan Chemical Substance Inventory |



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|------|-----------------------------|
| TSCA | Toxic Substance Control Act |
|------|-----------------------------|

SECTION 16: OTHER INFORMATION

| | |
|------------------------|--|
| Reference | US OSHA HCS 29 CFR 1910.1200 ,ECHA |
| Table formulation unit | Name : Phrozen Tech. Co. Ltd Address / Phone : 287 Niupu Rd, Xiangshan Dist, Hsinchu City 30091, TAIWAN(R.O.C) /+ 886-3-6210505 |
| Table formulator | Job title : Occupational Safety & Health manager Name : Chun-Yao, Kuo |
| Table formulation Date | 2024.01.10 |
| Remarks | In the above described information, the symbol "N/A" means no relevant information currently. |

To the best of our knowledge the information contained herein is accurate. However, Phrozen Tech. Co. Ltd. makes no warranty, expressed or implied, regarding the accuracy of these results to be obtained from the use thereof. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. Phrozen Tech. Co. Ltd. assumes no responsibility for injury from the use of the product described herein.

END OF SAFETY DATASHEET