

**SECTION 1 : IDENTIFICATION****1.1 Product identifier**

**Product name** Aqua Macaroon-Green

**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 2A ,

Skin sensitization Category 1 , Carcinogenicity Category 2,

Specific target organ toxicity (single exposure) Category 3

Hazardous to the aquatic environment (chronic hazard) Category 3

**2.2 Signal statement**

Corrosion, Exclamation mark, Health hazard

**2.3 Pictograms**

**2.4 Signal word** WARNING

**2.5 Hazard statements**

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

**2.6 Precautionary statements**

Wear protective gloves, Wash thoroughly after handling.

Wear eye/face protection.

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IF ON SKIN: Wash with plenty of soap and water.

Take of contaminated clothing and wash before re-use. If skin irritation occurs, seek medical advice/attention

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

Remove contact lenses, If present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention. Wash hands after handling.

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

### 2.7 Other hazard

None

## SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

| Components                                                                                                         | CAS number   | Weight %  | Classification acc. to GHS                                                          |
|--------------------------------------------------------------------------------------------------------------------|--------------|-----------|-------------------------------------------------------------------------------------|
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid | 55818-57-0   | 10 – 30%  | Skin Sens. 1 / H317<br>Aquatic Acute 1 / H400<br>Aquatic Chronic 2 / H411           |
| Oxybis(methyl-2,1-ethanediyl) diacrylate                                                                           | 57472-68-1   | 15 – 25%  | Skin Irrit. 2 / H315<br>Skin Sens. 1 / H317<br>Eye Dam. 1 / H318                    |
| Glycerol propoxylate (1PO/OH) triacrylate                                                                          | 52408-84-1   | 15-25%    | Acute Tox. 4 / H302<br>STOT RE 2 / H373<br>Eye Dam. 1 / H318<br>Skin Sens. 1 / H317 |
| Hexane, 1,6-diisocyanato-, homopolymer, 2-hydroxyethyl acrylate-blocked                                            | 264888-31-5  | 10-20%    | Skin Sens. 1A / H317<br>Skin Irrit. 2 / H315<br>Eye Dam. 2A / H319                  |
| Additives1                                                                                                         | Trade Secret | 1-4%      | -                                                                                   |
| Additives2                                                                                                         | Trade Secret | 0.1-2%    | Carc. 2 / H351                                                                      |
| Additives3                                                                                                         | Trade Secret | 0.05-0.1% | -                                                                                   |

**SECTION 4 : FIRST AID MEASURES****4.1. First-aid advice and recommendations for different routes of exposure****4.1.1 Inhalation**

Keep at rest. Move to fresh air. Consult a physician.

**4.1.2 Skin Contact**

Take off contaminated clothing and shoes immediately. Rinse immediately with plenty of water and seek medical advice.

**4.1.3 Eyes Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
Consult a physician.

**4.1.4 Ingestion**

Do not induce vomiting. Keep at rest. Consult a physician.

**4.2. Most important symptoms and hazardous effects**

None

**4.3. Protection of First-aid personnel**

None

**4.4. Note for physician**

None

**SECTION 5 : FIRE-FIGHTING MEASURES****5.1 Applicable extinguishing media**

Water spray, BC-powder, Carbon dioxide (CO<sub>2</sub>)

**5.2 Specific hazards confronted during fire fighting**

Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>) , NO<sub>x</sub>

**5.3 Specific fire-fighting procedure**

None

**5.4 Specific protective equipments for fire-fighters**

For fires in enclosed areas, wear self-contained breathing apparatus and protective suit.  
Do not inhale combustion gases.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

**6.1. Personal precautions**

Ensure adequate ventilation. Wear personal protective equipment. Remove all sources of ignition. Avoid contact with skin and eyes. Do not breathe vapors or spray mist.

**6.2. Environmental precautions**

Do not flush into surface water.

**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.

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 <sup>3</sup> | 15 mg / m <sup>3</sup> | - | - |
| Carbon black     | 3.5 mg/ m <sup>3</sup> | 7 mg/ m <sup>3</sup>   |   |   |

### 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.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

|                     |                      |                 |                        |
|---------------------|----------------------|-----------------|------------------------|
| Apperance and color | Green viscous liquid | Odor            | Typical acrylate       |
| Odor threshold      | N/A                  | Melting point   | N/A                    |
| pH value            | N/A                  | Boiling point   | N/A                    |
| Flammable           | N/A                  | Flash point     | $>110^{\circ}\text{C}$ |
| Decomposition Temp  | N/A                  | Testing method  | close up               |
| Natural Temp        | N/A                  | Explosive limit | N/A                    |
| Vapor pressure      | N/A                  | Vapor density   | N/A                    |

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|                                                  |                                  |                  |     |
|--------------------------------------------------|----------------------------------|------------------|-----|
| Density                                          | 1.12 g /cm <sup>3</sup> at 20 °C | Solubility       | N/A |
| Octanol/water distribution coefficient (log Kow) | N/A                              | Evaporation rate | N/A |

## SECTION 10: STABILITY AND REACTIVITY

### 10.1. Stability

Stable under normal condition.

### 10.2. Possible hazardous reaction under specific conditions

None

### 10.3. Must avoid condition

UV-radiation/sunlight.

### 10.4. Must avoid substances

Oxidisers, Reducing agents

### 10.5. Hazardous decomposed product

CO<sub>x</sub>, NO<sub>x</sub>

## 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  | Species | End point | Value        |
|------------------------------------------|--------|---------|-----------|--------------|
| Oxybis(methyl-2,1-ethanediyl) diacrylate | Oral   | Rat     | LD50      | 4600 mg/kg   |
|                                          | Oral   | Rabbit  | LD50      | >2g/kg       |
| Glycerol propoxylate (1PO/OH)triacylate  | Oral   | Rat     | LD50      | >2000 mg/kg  |
|                                          | Dermal | Rat     | LD50      | >2000 mg/kg  |
| Titanium dioxide                         | Oral   | Rat     | LD50      | >10000 mg/kg |

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|  |           |     |      |               |
|--|-----------|-----|------|---------------|
|  | Dermal    | Rat | LD50 | >10000 mg/kg  |
|  | Ingestion | Rat | LC50 | >5.09 mg/l/4h |

## 11.4. Chronic toxicity

None

## SECTION 12: ECOLOGICAL INFORMATION

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           |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid | LL50      | >100 mg/l   | fish                  | 96 h          |
|                                                                                                                    | LC50      | 0.082mg/l   | fish                  | 96h           |
|                                                                                                                    | EC50      | >16mg/l     | aquatic invertebrates | 48h           |
|                                                                                                                    | EL50      | 105mg/l     | algae                 | 48h           |
|                                                                                                                    | ErC50     | 17mg/l      | algae                 | 72h           |
| Glycerol propoxylate (1P O/OH) triacrylate                                                                         | LC50      | 5.74mg/l    | fish                  | 96h           |
|                                                                                                                    | EC50      | 91.4mg/l    | aquatic invertebrates | 48h           |
|                                                                                                                    | EC50      | 12.2mg/l    | algae                 | 72h           |
| Hexane, 1,6-diisocyanato-, homopolymer, 2-hydroxyethyl acrylate-blocked                                            | LC50      | >100mg/l    | fish                  | 96 h          |
|                                                                                                                    | EC50      | >100mg/l    | aquatic invertebrates | 48 h          |
|                                                                                                                    | EC50      | >100mg/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, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid | EC50      | >1,000 mg/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, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid | oxygen depletion | 42%              | 28d  | ECHA   |

### 12.3. Bio-accumulative potential

| Components                                                                                                         | BCF | Log <sub>KOW</sub>              | BOD/COD |
|--------------------------------------------------------------------------------------------------------------------|-----|---------------------------------|---------|
| Oxybis(methyl-2,1-ethanediyl) diacrylate                                                                           |     | 0.01- 0.39 (pHvalue : 7, 24°C)  |         |
| 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane, esters with acrylic acid |     | 1.6 – 3.8 (pHvalue : 6.4, 23°C) |         |

### 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**

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

**Additional information for IMDG CODE 3.4.1 :**

According to the general provisions 2.10.2.7, if the volume of the product is less than 5L or the mass is less than 5kg when transported, and the packaging complies with the general provisions in 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8, the product is not regarded as dangerous goods transportation.

**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 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**

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| Country | Inventory  | Status                         |
|---------|------------|--------------------------------|
| AU      | AU AICS    | all ingredients are listed     |
| CA      | DSL        | all ingredients are listed     |
| CA      | NDSL       | 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                                     |
| TSCA      | Toxic Substance Control Act                                             |

### SECTION 16: OTHER INFORMATION



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|                        |                                                                                                      |
|------------------------|------------------------------------------------------------------------------------------------------|
| Reference              | US OSHA HCS 29 CFR 1910.1200 / DIN38412 / REACH                                                      |
| 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<br>Name : Chun-Yao, Kuo                             |
| Table formulation Date | 2023.11.27                                                                                           |
| 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**