SAFETY DATA SHEET

Aqua-Gray 8K

普羅森科技股份有限公司 2024-01-23 職安人員

SECTION 1 : IDENTIFICATION

1.1 Product identifier

Product name Aqua-Gray 8K

1.2 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.

1.3 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

1.4 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.

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 to hazardous or special waste collection point.

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	30–50 %	Skin Corr.Irrit. 2 / H315 Eye Dam./Irrit. 1 / H318 Skin Sens. 1 / H317
4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane -1, 2-diol acrylate and succinic anhydride	68958-77-0	10 - 30 %	Acute Tox. 4 / H332 Skin Sens. 1B / H317 Aquatic Acute 1 / H400 Aquatic Chronic 4 / H413
4-(1-oxo-2-propenyl)-morpholine	5117-12-4	15–30 %	Acute Tox. 4 (oral) /H302 Eye Dam./Irrit. 1 /H318 Skin Sens. 1/ H317 STOT RE 2 /H373
Additives1	Trade Secret	10 – 20 %	Eye Dam. 1 / H318 Skin Sens. 1 / H317 Aquatic Chronic 2 / H411

Additives2	Trade Secret	5 – 15 %	Acute Tox. 4 / H302 Skin Sens. 1B / H317 Aquatic Chronic 3 / H412
Additives3	Trade Secret	< 2%	Aquatic Chronic 4 / H413
Additives4	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. 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, fresh water 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 effecects

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_2)

5.2. Specific hazards confronted during fire fighting

Nitrogen oxides (NOx), Carbon monoxide (CO), Carbon dioxide (CO_2)

5.3. Specific fire-fighting procedure

None

5.4. Specific protecttive 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 precations

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

6.2. Environmental precations

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.

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

Components	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.

Filtering half mask (EN 149). P1 (filters at least 80 % of airborne particles, colour code: White).

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 : ≥ 0.6mm

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	Gray 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** **Testing method**	N/A N/A
Decomposition Temp	N/A		
Natural Temp	240℃	**Explosive limit**	N/A
Vapor pressure	0.5 hPa at 86.6 °C	**Vapor density**	N/A
Density	1.18 g /cm³ 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 decomposted product

None

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
4,4'Isopropylidenediphenol, polymer with 1-chloro-2,3- epoxypropane, propane-1, 2-diol acrylate and succinic anhydride	inhalation: vapour	Rat	LD50	11mg/l/4h
	inhalation: dust/mist	Rat	LD50	4.9mg/l/4h
4-Acryloylmorpholine	oral	Rat	LD50	588 mg/kg
	Dermal	Rat	LD50	> 2,000 mg/kg
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocy-anatohexane	oral	Rat	LD50	> 2,000 mg/kg
Titanium dioxide	oral	Rat	LD50	>10000 mg/kg
	Dermal	Rat	LD50	>10000 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
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane	EL50	>58mg/l	aquatic invertebrates	48h
4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3- epoxypropane, propane-1,2-diol acrylate and succinic anhydride	LLC50	>100 mg/l	fish	96 h
	LC50	0.082mgl	fidh	96h
	EL50	>100 mg/l	aquatic invertebrates	48h
	EC50	0.11mg/l	aquatic invertebrates	48h
4-(1-oxo-2-propenyl)-mor-pholine	LC50	>220mg/l	fidh	24h
	EL50	230mg/l	aquatic invertebrates	24h
	EC50	>120mg/l	algae	72h
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
(2,4,6-trioxo-1,3,5-triazine1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl triacrylate	LC50	9.43mg/l	fidh	96 h
	EC50	158.3mg/l	aquatic invertebrates	48 h
	ErC50	25.7mg/l	algae	72h
Aquatic toxicity (chronic) of components of the mixture				
Components	**End point**	**Value**	**Species**	**Exposure time**
4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride	EC50	>1,000 mg/l	microorganisms	3 h
Oxybis(methyl-2,1-ethanediyl) diacrylate	EC50	>1,000 mg/l	microorganisms	30 min

12.2. Per sistence and degradability

Degradability of components of the mixture				
Components	**Process**	**Degradation rate**	**Time**	**Source**

2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocy- anatohexane	carbon dioxide generation	5%	28d	ECHA
4,4'-Isopropylidenediphenol, polymer with 1-chloro-2,3-epoxypropane, propane-1,2-diol acrylate and succinic anhydride	carbon dioxide generation	5%	29d	ECHA
(2,4,6-trioxo1,3,5-triazine1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl triacrylate	oxygen depletion	19.7%	28d	ECHA
Oxybis(methyl-2,1-ethanediyl) diacrylate	DOC removal	90–100 %	28d	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-epoxypropane, propane-1,2-diol acrylate and succinic anhydride	-	1.1(20.6°C)	-
4-(1-oxo-2-propenyl)-morpholine	-	-0.46(21°C)	-
(2,4,6-trioxo-1,3,5-triazine1,3,5(2H,4H,6H)-triyl)tri-2,1-ethanediyl triacrylate	-	1.09(pHvalue : 6.8, 25°C)	-
2-Propenoic acid, 2-hydroxyethyl ester, polymer with 1,6-diisocyanatohexane	-	2.8 – 4.9(25°C)	-

bis(4-methylphenyl)phosphoroso](2,4,6-trimethylphenyl)methanone		4.7 (20 °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

Land transport ADR/RID/ADN	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 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	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
KR	KECI	all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	not all ingredients are listed

Country	Inventory	Status
PH	PICCS	not all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NDSL	Non-domestic Substances List (NDSL)
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

SECTION 16: OTHER INFORMATION

Reference	US OSHA HCS 29 CFR 1910.1200 / REACH / ECHA
Table formulation unit	Name : Phrozen Tech. Co. Ltd
	Address / Phone : 287 Niupu Rd, Xiangshan Dist, Hsinchu City 30091, TAIWAN(R.O.C) /+886-3621-0505

普羅森科技股份有限公司 2024-01-23 職安人員

Table formulator	Job title Occupational Safety & Health manager Name Chun-Yao, Kuo
Table formulation Date	2024.01.23
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