

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

Product name Castable W20 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**

Reproductive toxicity Category 1B

2.2 Signal statement

Health hazard

**2.3 Pictograms**

2.4 Signal word Warning

2.5 Hazard statements

Causes skin irritation

May cause an allergic skin reaction

Causes serious eye irritation

Suspected of damaging fertility

2.6 Precautionary statements

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.



No smoking
 Keep container tightly closed
 Avoid breathing dust, fume, gas, mist, vapours, spray
 Wash thoroughly after handling
 Use only outdoors or in a well-ventilated area. Hazardous polymerization may occur upon depletion of inhibitor
 Contaminated work clothing should not be allowed out of the workplace
 Avoid release to the environment.
 Wear protective gloves, protective clothing, eye protection
 If on skin, wash with plenty of soap and water.
 If exposed: Call a POISON CENTER or doctor/physician.
 If skin irritation or rash occurs: Get medical advice/ attention
 Wash contaminated clothing before reuse.
 Collect spillage. Store locked up.
 Dispose of contents/container in accordance with local/regional regulations

2.7 Other hazard

None

SECTION 3 : COMPOSITION / INFORMATION ON INGREDIENTS

Components	CAS number	Weight %	Classification acc. to GHS
Acrylate monomers	2455-24-5	15-40%	Flam. Liq. 4 / H227 Aquatic Acute 3 / H402 Aquatic Chronic 3 /H412
Acrylate oligomer	72869-86-4	15-40%	Skin Sens. 1 / H317 Aquatic Acute 3 / H402 Aquatic Chronic 3 /H412
Wax additive	8002-74-2	20%	-
Additives1	Trade Secret	0.5%-4%	Skin Sens. 1 / H317 Repr. 2 / H360FD Aquatic Acute 2 / H401



			Aquatic Chronic 2/ H411
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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

Immediately take off all contaminated clothing. Wash skin immediately with mild soap/water for at least 15 minutes. If resin is not completely removed, use a waterless cleaner first. Seek medical advice if irritation persists.

4.1.3. Eyes Contact

Wash the eye and under eyelid immediately with water for 20-40 minutes.

Seek medical advice if irritation, pain, tears or redness persists.

4.1.4. Ingestion

DO NOT INDUCE VOMITING. If vomiting occurs naturally, keep airways clear.

Immediately obtain medical attention.

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 (CO₂)

5.2 Specific hazards confronted during fire fighting

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

**5.3 Specific fire-fighting procedure**

Avoid inhaling the fumes. Incomplete combustion releases toxic gases.

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

Limit leakages with earth or sand. If the product has flown off into a water course, into the drainage system, or has contaminated the ground or vegetation, notify the responsible authorities.

6.3. Cleaning methods

Rapidly collect the product. To do so, wear a mask and protective clothing.

If the product is in a liquid form, stop it from entering the drainage system.

Recover the product for re-use if possible, or for elimination in compliance with waste disposal regulations in force.

The product might, where appropriate, be absorbed by inert material.

SECTION 7 : SAFETY HANDLING AND STORAGE**7.1. Handling**

Avoid contact with and inhalation of vapours and/or dusts. Do not eat or drink or smoke while working.

7.2. Storage

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

Keep in a dry place, in the original containers tightly closed, avoid heat/ignition and light sources.

Prevent contamination by foreign materials and water.

For industrial use only, keep away from children.

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
Wax	2mg / m ³	4mg /m ³	-	-

8.3. Personal protective equipment**8.3.1 Respiratory protection**

Required where ventilation/aspiration is insufficient or exposure is prolonged, or for applications in which the product is sprayed or heated. Required in case of machining or applications that release dust.

8.3.2 Hand protection

Use protective gloves. For an extended exposure of the product, wear nitrile/neoprene gloves.

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	Lime green viscous liquid	Odor	Typical acrylate
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Odor threshold	N/A	Melting point	N/A
pH value	N/A	Boiling point	N/A
Flammable	N/A	Flash point	>100°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
Density	1.08 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

The product reacts exothermically with amines, Lewis acids and mercaptans.

10.5. Hazardous decomposed 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
Diphenyl(2,4,6-trimethyl benzoyl) phosphine oxide	Oral	Rat	LD50	> 5,000 mg/kg
	Dermal	Rat	LD50	> 2,000 mg/kg
Wax	Oral	Rat	LD50	> 5,000 mg/kg
	Dermal	Rat	LD50	> 2,000 mg/kg
Acrylate oligomer	Oral	Rat	LD50	> 5,000 mg/kg

11.4. Chronic toxicity

None

11.5. Reproductive and/or Developmental Effects

Components	route	Species	End point	Value
Diphenyl(2,4,6-trimethyl benzoyl) phosphine oxide	Ingestion	Rat	NOAEL pre mating into lactation for female	200 mg/kg/day

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
diphenyl(2,4,6-trimethylbenzoyl) phosphine ox-ide	LC50	1.4mg/l	fish	96h
	EC50	3.53mg/l	aquatic invertebrates	48h
	ErC50	>2.01mg/l	algae	72h
Tetrahydrofurfuryl methacrylate	LC50	34.7mg/l	fish	96h
Acrylate oligomer	LC50	10.1mg/l	fish	96h
	EC50	>1.2 mg/l	aquatic invertebrates	48h

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12.2. Persistence and degradability

Degradability of components of the mixture				
Components	Process	Degradation rate	Time	Source
Acrylate oligomer	aerobic	22%	28d	OECD
Diphenyl(2,4,6-trimethyl benzoyl) phosphine oxide	oxygen depletion	0 -10%	28 d	OECD

12.3. Bio-accumulative potential

Components	BCF	Log _{kow}	BOD/COD
Diphenyl(2,4,6-trimethyl benzoyl) phosphine oxide	47 – 55	3.1 (pH value: 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

Land transport USDOT	Not classified as dangerous goods under transport regulations.
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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

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

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	all ingredients are listed

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EU	REACH Reg.	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	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

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**SECTION 16: OTHER INFORMATION**

Reference	US OSHA HCS 29 CFR 1910.1200,OECD,REACH
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
Table formulator	Job title : Occupational Safety & Health manager Name : Chun-Yao, Kuo
Table formulation Date	2023.11.15
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