

Safety Data Sheet for Chemical Products

Tough 2K Grey V1 Resin

Safety data sheet according to Regulation (EU) 2020/878 as amended from time to time

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Date / First version: 23.07.2023

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SECTION 1. Identification of the substance/mixture and of the company/undertaking

Product	Photopolymer Resin
Product identifier	High Detail Apricot V1 Resin
Recommended use	Raise3D DF series 3D printers
Company	Raise 3D Technologies, Inc.
Contact address	Floor 4 B5, 1688 North Guoquan Road, Yangpu District Shanghai 200438
Telephone	400-6367-888
E-mail address	sds@raise3d.com
Emergency telephone number	112 (General emergency telephone number (EU))

SECTION 2. Hazards Identification

Hazardous substances and mixtures (GHS) :

classification criteria according to Globally Harmonized System of Classification and Labelling of Chemicals (Part 2-4)

Eye Dam./Irrit. 1

Skin Corr./Irrit. 2

Skin Sens. 1

Aquatic Chronic 2

Specific target organ systemic toxicity (single exposure) 3 Respiratory Irrit.

Pictogram:**Signal Word:**

Warning

Hazard Statement:

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary Statements (Response):

P261	Avoid breathing mist or vapour or spray.
P264	Wash hands thoroughly after handling.
P265	Do not touch eyes.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves and eye protection or face protection.

Precautionary Statements (Response):

P333 + P317	If skin irritation occurs: Get medical help.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P391	Collect spillage.
P305 + P354 + P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Other hazards:

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

SECTION 3: Composition/Information on Ingredients**Chemical nature: Mixtures****Hazardous ingredient:**

Acrylated aliphatic urethane

Content (W/W): $\geq 35\%$ - $< 50\%$

CAS No.: 68987-79-1

Skin Sens. 1

Specific target organ systemic toxicity (single exposure) 3

Eye Dam./Irrit. 1

Skin Corr./Irrit. 2

PO2-NPGD

Content (W/W): $\geq 25\%$ - $< 40\%$

CAS No.: 84170-74-1

Skin Sens. 1B

Aquatic Chronic 2

(5-ethyl-1,3-dioxan-5-yl)methyl acrylate

Content (W/W): $\geq 10\%$ - $< 25\%$

CAS No.: 66492-51-1

Skin Sens. 1B

Skin Corr./Irrit. 2

Aquatic Chronic 2

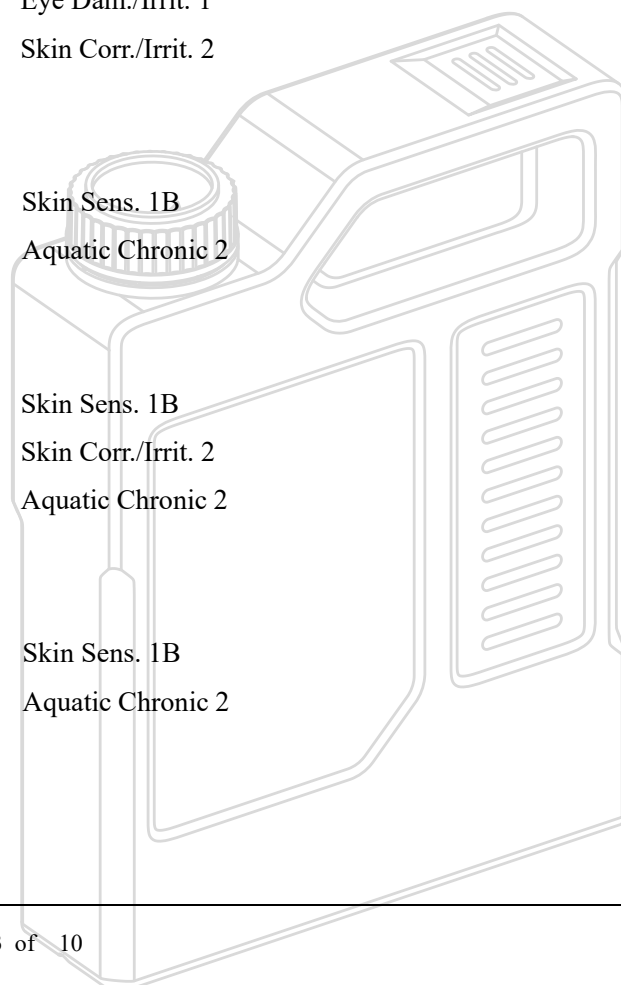
Ethyl (2,4,6-trimethylbenzoyl) phenylphosphinate

Content (W/W): $> 0\%$ - $\leq 10\%$

CAS No.: 84434-11-7

Skin Sens. 1B

Aquatic Chronic 2

SECTION 4: First-Aid Measures

Advice:

1. First aid is usually required. Please show the SDS to the doctor on the scene.
2. Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention, inhale corticosteroid aerosol depending on medical condition.

On skin contact:

Remove contaminated clothing. Wash thoroughly with soap and water, covered with a sterile bandage, seek medical attention.

On contact with eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist. If eyes injured, seek medical attention immediately.

On ingestion:

Immediately rinse mouth and then drink 200-300 ml of water, get medical help, call a doctor or contact a Poison Control Center.

Cautions:

Symptoms: (Further) symptoms and / or effects are not known so far, The most important known symptoms and effects are described in section 2 and/or in section 11.

Hazards: No hazard is expected under intended use and appropriate handling.

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

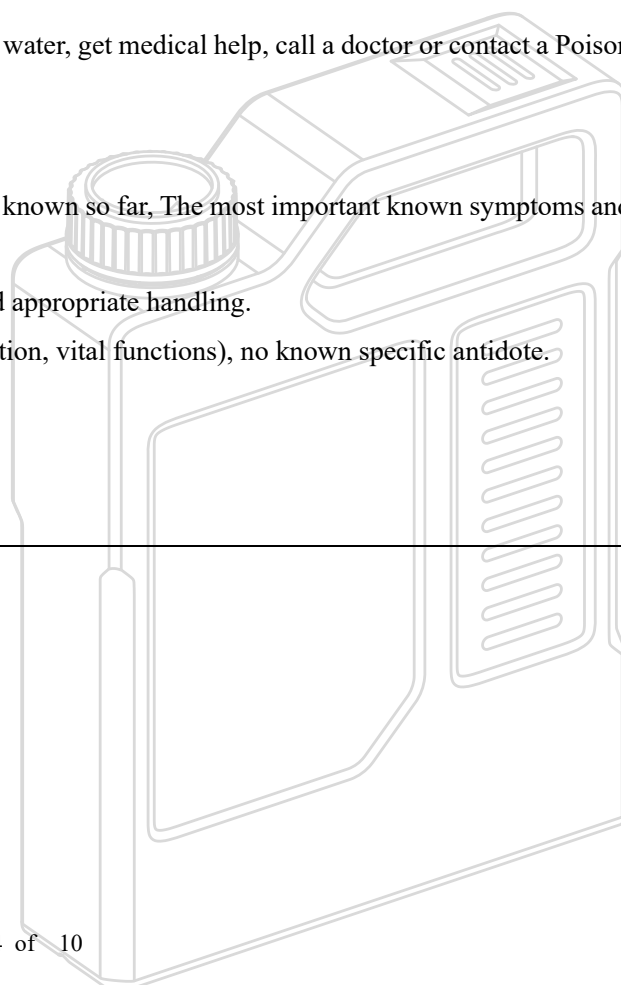
Hazardous properties:

No fire hazard.

Extinguishing media:

Dry powder, foam, carbon dioxide, water spray

Advice for fire-fighters:



Wear self-contained breathing apparatus (MSHA/NIOSH compliant or equivalent) and chemical-protective clothing.

Extinguish fires at a safe distance and with adequate protection.

Take all precautions to avoid mixing of combustibles.

Hazardous combustion products:

carbon monoxide, volatile organic compounds.

SECTION 6: Accidental Release Measures

Personal precautions:

Information regarding personal protective measures, see Section 8.

Environmental precautions:

Do not release products into the sewage system or any water source. If released, please report to the relevant authorities.

Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up:

Pick up with inert absorbent material (e.g., diatomite, sand etc.). Store attachments or collections in suitable airtight containers. Information regarding exposure controls/personal protection and disposal considerations can be found in section 13. Use specific cleanser instead of solvent.

SECTION 7: Handling and Storage

Precautions for safe handling:

Provide good ventilation of working area.

Keep away from heat, sparks, fire, hot surfaces. Do not smoke.

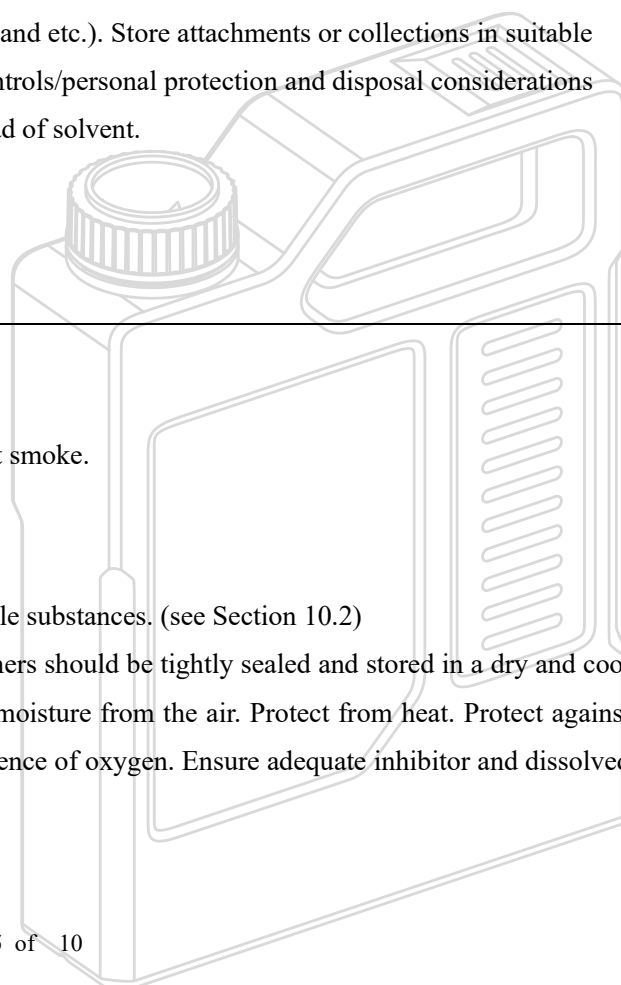
Use only outdoors or in well-ventilated areas.

Conditions for safe storage:

Segregate from foods, animal feeds, or any incompatible substances. (see Section 10.2)

Detailed information about storage conditions: Containers should be tightly sealed and stored in a dry and cool place. Keep containers dry since the product absorbs moisture from the air. Protect from heat. Protect against light effects. The stabilizer is only effective in the presence of oxygen. Ensure adequate inhibitor and dissolved oxygen levels.

Protect from temperatures below: 0 °C



Changes in the properties of the product may occur if substance/product is stored below indicated temperature for extended periods of time.

Protect from temperatures above: 40 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

SECTION 8: Exposure Controls/Personal Protection


Monitoring method (parameter)

No relevant data.

Engineering controls:

Keep the material airtight during production. Ensure adequate ventilation. Use local extraction and ventilation if feasible. If ventilation fails to keep particle and solvent vapor concentrations below occupational exposure limits, wear a suitable respirator. Ensure showers and eyewash stations equipped in the workplace.

Personal protective equipment:

General requirements:	
Respiratory protection	Suitable respiratory protection if concentrations above occupational exposure limits or irritation: Combination filter for gases/vapors of organic, inorganic, acid inorganic, alkaline compounds and solid and liquid harmful particles (e.g., EN 14387 Type ABEK-P2)
Eye protection:	Safety glasses with side-shields (according to EN 166 or NIOSH)
Hand protection:	Chemical resistant protective gloves (e.g., butyl rubber) (recommended: chemical-protective gloves according to EN 374, US F739 or AS/NZS 2161.1)

General safety and hygiene measures:

When using, do not eat, drink or smoke. Wash hands at the end of the shift.

SECTION 9: Physical and Chemical Properties

Form, characteristics and color	Grey flowing liquid
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Odor	Slight odor
pH value	6.8-7.2
Flammability	Not flammable
Density (g/cm ³)	1.05g/cm ³ (25°C)
Relative vapor density (g/L)	>1
Vapor pressure (mPa)	<0.01mmHg
Partitioning coefficient n-octanol/water (log Kow)	not determined
Viscosity (mpa·s)	150~300 (mpa·s) (25°C)
Flash point (°C, closed cup)	>250
Boiling point (°C)	140
Melting/freezing point (°C)	-60
Evaporation velocity (kg/s)	not determined
Upper explosion limit % (V/V)	not applicable
Lower explosion limit % (V/V)	not applicable
Self-ignition temperature (°C)	>450
Decomposition temperature (°C)	>250
Solubility	slightly soluble in water, soluble in benzene, alcohol, ether and other organic solvents

SECTION 10: Stability and Reactivity

Stability:

stable if stored and handled as prescribed/indicate (see Section 7)

Substances to avoid:

Avoid acid, alkali, strong oxidizing agent and strong reducing agent.

Conditions to avoid:

Avoid direct sunlight, heat and moist conditions.

Hazardous decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

Acute toxicity

Based on available data, the classification criteria are not met, yet still harm in ingesting small amounts.

Skin irritation:

Skin contact causes irritation.

Eye irritation:

Eye contact causes serious irritation, including severe pain, feeling of burning, shedding tears, or swelling.

Respiratory/Skin sensitization:

Sensitization after skin contact possible.

Germ cell mutagenicity:

Based on available data, the classification criteria are not met.

Carcinogenicity:

Based on available data, the classification criteria are not met.

Reproductive toxicity:

Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure):

Based on available data, the classification criteria are not met.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure):

Based on available data, the classification criteria are not met.

Aspiration hazard:

With low volatility in the normal service condition, the products are not expected to cause obvious symptoms. But it may generate gases/vapors after heating up, which results in respiratory irritation, including cough, secreting mucus, polypnea.

SECTION 12: Ecological Information

Toxicity:

Assessment of aquatic toxicity:

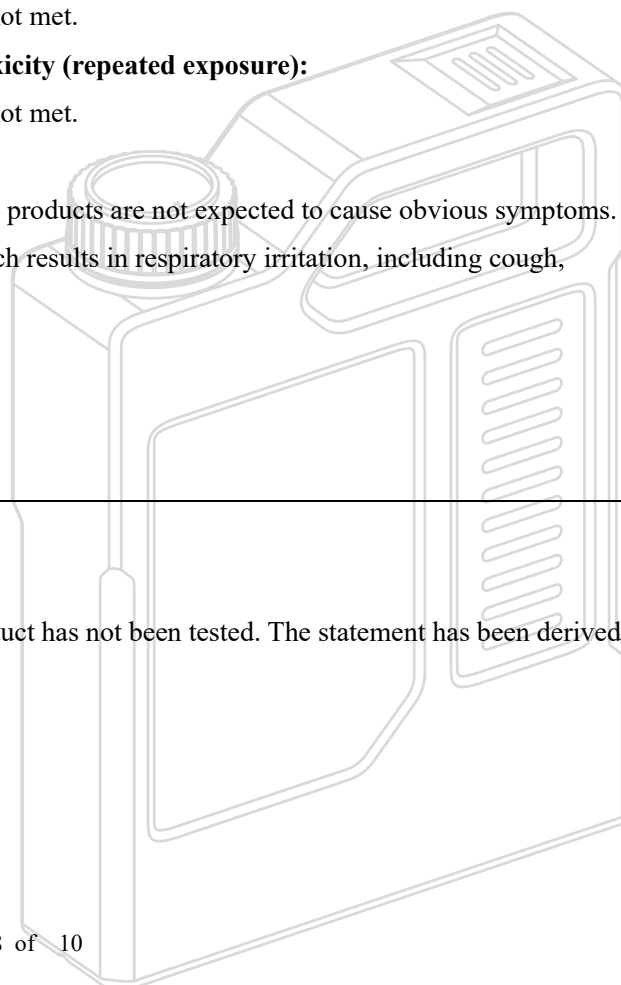
Toxic to aquatic life with long lasting effects. The product has not been tested. The statement has been derived from the properties of the individual components.

Persistence and degradability:

No data available.

Bioaccumulative potential:

No data available.



Mobility in soil:

No data available.

Other adverse effects:

Results of PBT and vPvB assessment: Not available.

SECTION 13: Disposal Considerations

Waste treatment methods:

Dispose of in accordance with national, state and local regulations.

Contact specialized companies about recycling.

Contaminated packaging:

Dispose of in accordance with national, state and local regulations.

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

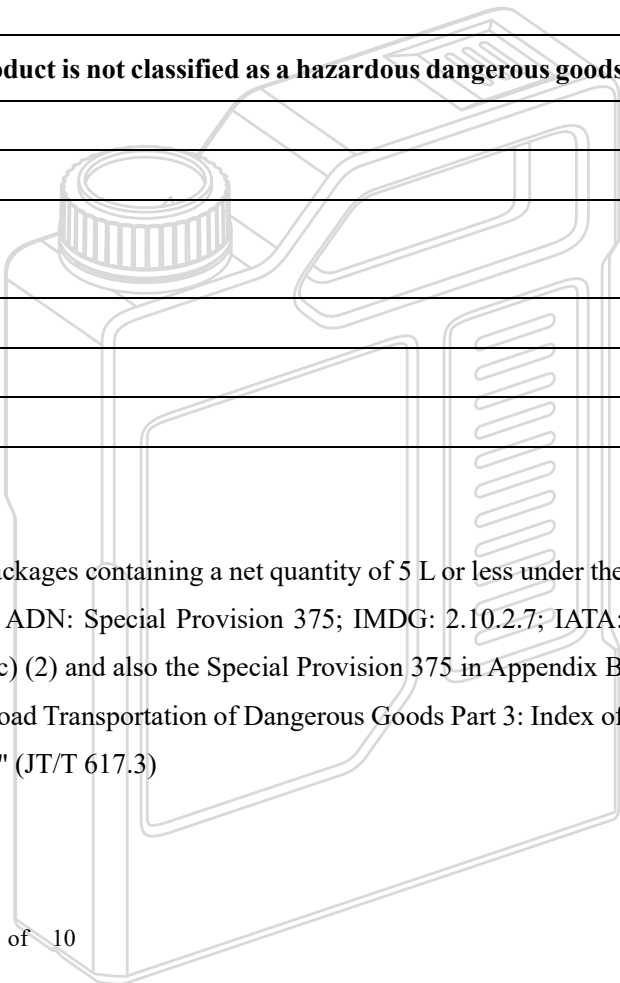
SECTION 14: Transport Information

According to IATA, IDMG, DOT regulations, the product is not classified as a hazardous dangerous goods.

Package label	None
UN number	UN 3082
UN proper shipping name	None
Major hazard class	None
Minor hazard class	None
Packing group	None

Further information

Product may be shipped as non-hazardous in suitable packages containing a net quantity of 5 L or less under the provisions of various regulatory agencies: ADR, RID, ADN: Special Provision 375; IMDG: 2.10.2.7; IATA: A197; TDG: Special Provision 99(2); 49CFR: §171.4 (c) (2) and also the Special Provision 375 in Appendix B which is regulated in China "Regulations Concerning Road Transportation of Dangerous Goods Part 3: Index of dangerous goods name and transportation requirements" (JT/T 617.3)



SECTION 15: Regulatory Information

This product may be subject to the Regulations on the Safety Management of Hazardous Chemicals, and the classification of dangerous goods is mentioned in Section 14.

Other regulations/legislation:

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

SECTION 16: Other Information

Any other intended applications should be discussed with the manufacturer.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. However, we do not have any express or implied warranties regarding the data provided. The handling, storage, use or disposal of this product is may be beyond our control and knowledge. Under no circumstances will we be liable for loss, damage or related costs arising from improper handling, storage, use or disposal of this product. This safety data sheet is written based on this product and may only be applied to this product.

