

# Raise3D Premium PVA+ Safety Data Sheet

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

### 1.1 Trade name:

Raise3D Premium PVA+ 3D Printing Filament

### 1.2 Use of the product:

3D Printer Filament

### 1.3 Supplier information

#### Supplier:

Raise 3D Technologies, Inc.

#### Address:

43 Tesla, Irvine, CA 92618

*Emergency phone number: In case of toxicological emergency, contact your doctor.*

## Section 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture classification (REGULATION (EC) No 1272/2008)

This product is not classified according to Regulation (EC) 1272/2008 and Directive 67/548/EEC.

### 2.2 Label elements

Not applicable.

### 2.3 Other hazards

Skin sensitization material (Category 1) is contained less than 0.1%.



## Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

### Mixtures

Chemical Name	%	Cas No./EC No
Polyvinyl Alcohol Compound	>96	-
Aliphatic polyol	<20	-
Calcium distearate	<2	1592-23-0
Methanol (impurity)*	<1	67-56-1 200-659-6
*Classification: Flam. Liq. 2; H225, Acute Tox. 3; H301, Acute Tox. 3; H311, Acute Tox. 3; H331, STOT SE 1; H370		

## Section 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### 4.1.1 General advice:

If you feel unwell, seek medical advice (show the label where possible). Never give anything by mouth to an unconscious person. Take off contaminated clothing and shoes immediately.

#### 4.1.2 If inhaled:

If breathed in, move person into fresh air.

#### 4.1.3 In case of skin contact:

If on skin, rinse well with water. If skin irritation persists, call a physician.

#### 4.1.4 In case of eye contact:

If easy to do, remove contact lens, if worn. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

#### 4.1.4 If swallowed:

Rinse mouth with water. Induce vomiting immediately and call a physician. If a person vomits when lying on his back, place him in the recovery position.

### 4.2 Most important symptoms and effects, both acute and delayed

no data available

### 4.3 Indication of any immediate medical attention and special treatment needed



no data available.

## Section 5: FIRE FIGHTING MEASURES

### 5.1 Extinguishing media

#### Suitable extinguishing media:

Water fog, Dry chemical

#### Unsuitable extinguishing media:

Do not use a solid water stream as it may scatter and spread fire.

### 5.2 Special hazards arising from the substance or mixture

#### Specific hazards during firefighting:

Do not use a solid water stream as it may scatter and spread fire. Exposure to decomposition products may be a hazard to health.

### 5.3 Advice for fire fighters

#### Special protective equipment for firefighters:

Wear self-contained breathing apparatus for firefighting if necessary. Use personal protective equipment.

#### Further information:

Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. In the event of fire and/or explosion do not breathe fumes.

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation, especially in confined areas.

### 6.2 Environmental precautions

no data available.

### 6.3 Methods and materials for containment and cleaning up

Avoid dust formation. Collect dust or particulates using a vacuum cleaner with a HEPA filter. Do not use compressed air when cleaning.



## Section 7: HANDING AND STORAGE

### 7.1 Handling

#### Advice on safe handling:

For personal protection see section 8. Avoid creating dust. Do not breathe dust. Avoid contact with skin and eyes.

#### Advice on protection against fire and explosion:

Normal measures for preventive fire protection.

#### Dust explosion class:

No data available.

### 7.2 Conditions for safe storage, including any incompatibilities

#### Requirements for storage areas and containers:

store spool in the original vacuumized and sealed bag in a dry, cool and ventilated place.

#### Further information on storage conditions:

After opening the vacuumized bag, Protect from moisture.

#### Advice on common storage:

Keep away from oxidizing agents and strongly acid or alkaline materials. Keep away from food, drink and animal feeding stuffs.

#### Storage temperature:

> 0 °C and <= 40 °C

#### Other data:

No decomposition if stored and applied as directed.



**Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**8.1 Control parameters**

Components	CAS No.	Type	Value	Detail
Methanol (impurity)	67-56-1	STEL  TWA:	333 mg/m3 250 ppm 266 mg/m3 200 ppm	
Aliphatic polyol	-	PEL	5 mg/m3 15 mg/m3	Respirable fraction. Total dust.
Dust	-	PEL	5 mg/m3 15 mg/m3	Respirable fraction. Total dust.

**8.2 Exposure controls**

Use local exhaust ventilation to maintain airborne concentrations below the TLV. Suitable respiratory equipment should be used in cases of insufficient ventilation or where operational procedures demand it. For guidance on engineering control measures refer to publications such as the ACGIH current edition of 'Industrial Ventilation, a manual of Recommended Practice.

**8.3 Personal protective equipment**

**Engineering measures**

Provide sufficient ventilation for operations causing dust formation. During thermoplastic reprocessing at elevated temperatures, where risk of mist emission from the aliphatic polyol component exists, provide sufficient ventilation. Follow occupational exposure limit values for dusts or mists, where applicable. Ventilate as needed to control airborne dust or mist. Use explosion-proof electrical equipment if airborne dust or mist levels are high.

**Personal protective equipment**

**Respiratory protection:**

In case of dust: Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use. In case of risk of inhalation of mists during thermoplastic reprocessing at elevated



temperatures, use suitable respiratory equipment with combined filter for organic gases and particles (type A2P2 or comparable).

**Hand protection:** Rubber gloves

**Eye protection:** Goggles

**Skin and body protection:** Apron

**Hygiene measures:**

Handle in accordance with good industrial hygiene and safety practice. General industrial hygiene practice. Do not breathe dust. Avoid contact with skin, eyes and clothing. When using do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Wash contaminated clothing before re-use.

**Environmental exposure controls:**

no data available

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

**Appearance:** Solid Filament

**Odour:** Sligth vinegar

**Colour:** Yellow to pale yellow

**Odour threshold:** No information available

**pH:** 5.0-7.0

**Melting/freezing point:** 150-230 °C / -

**Initial boiling point and boiling range:** Not applicable

**Flash point:** >200 °C

**Evaporation rate:** Not applicable

**Flammability (solid, gas):** No information available

**Upper/lower flammability or explosive limits**

**UEL:** No data available

**LEL:** 35 g/m<sup>3</sup>

**Vapour pressure:** Not applicable

**Vapour density:** Not applicable

**Relative density:** 1.19 – 1.31 g/cm<sup>3</sup>

**Solubility(ies):** Unlimited solubility 100.00 g/L

**Partition coefficient (n-octanol/water):** Not available

**Auto-ignition temperature:** 520 °C

**Decomposition temperature:** >=200 °C



**Viscosity:** Not applicable

**Explosive properties:** Dust explosion risk at fine dust

**Oxidizing properties:**

**Oxidizing potential:** not oxidizing

## Section 10: STABILITY AND REACTIVITY

### 10.1 Reactivity:

The product is stable and non-reactive under normal conditions of use, storage and transport.

### 10.2 Chemical stability:

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions:

No decomposition if stored and applied as directed. Dust can form an explosive mixture in air.

### 10.4 Conditions to avoid:

Avoid elevated temperatures for prolonged periods of time. While printing, keep away from sparks and open flame.

### 10.5 Incompatible materials:

**Materials to avoid:** Oxidizing agents, Acids, Bases

### 10.6 Hazardous decomposition products

Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

## Section 11: TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

**Component:** Methanol (impurity) CAS 67-56-1

#### Acute toxicity

**Acute oral toxicity:** LD50 Oral: > 2,000 mg/kg

**Acute inhalation toxicity:** Acute toxicity estimate: > 20 mg/L

**Test atmosphere:** vapor

**Exposure time:** 4h



**Method:** Calculation method

**Acute dermal toxicity:**

**Acute toxicity estimate:** > 2,000 mg/kg

**Method:** Calculation method

**Acute toxicity (other routes of administration)**

**methanol:**

**Species:** rabbit

No skin irritation

**Skin corrosion/irritation**

Prolonged skin contact may cause temporary irritation

**Serious eye damage/eye irritation**

Direct contact with eyes may cause temporary irritation

**Respiratory or skin sensitisation**

Not expected to cause respiratory or skin sensitisation

**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0,1% are mutagenic or genotoxic

**Carcinogenicity**

Not classified as to carcinogenicity to humans

**Reproductive toxicity:**

Based on available data, the classification criteria are not met

**Teratogenicity:** no data available

**STOT - single exposure:** Not classified

**STOT - repeated exposure:** Not classified

**Aspiration hazard:** Not a aspiration hazard

## Section 12: ECOLOGICAL INFORMATION





## 12.1 Toxicity

The product is not classified as environmentally hazardous.

**Components:** Test results

### Methanol (Impurity)(67-56-1)

**EC50 Algae:** 22000 mg/l 96 hours

**EC50 Daphnia magna:** > 10000mg/l/48 hours

**LC50 Fish:** 15400 mg/l 96 hours

## 12.2 Persistence and degradability

No data is available on the degradability.

## 12.3 Bioaccumulative potential

No data available.

## 12.4 Mobility in soil

No data available.

## 12.5 Other adverse effects

No data available.

## 12.6 Mobility in soil

### Additional ecological information:

If the PVA filament is dissolved in water, the effluent can be disposed of through the drain, but only if this effluent is eventually treated in a waste water treatment plant.

## Section 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Disposal method

##### Disposal:

In accordance with local and national regulations. Waste codes should be assigned by the user based on the application for which the product was used.

## Section 14: TRANSPORT INFORMATION

### 14.1 UN number

Not regulated as a hazardous material.



**14.2 UN proper shipping name**

Not applicable.

**14.3 Transport hazard class(es)**

Not applicable.

**14.4 Packing Group**

Not applicable.

**14.5 Environmental hazards**

No additional data is available.

**14.6 Special precautions for user**

No data available.

**14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not evaluated.

**Section 15: REGULATORY INFORMATION****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List

Not listed.

**15.2 Chemical Safety Assessment**

no data available

**Section 16: OTHER INFORMATION****Revision information**

Date of this revision: June 11, 2021

**Declare to reader**

Information is referenced from other manufacturers.

For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).



This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006 and Regulation (EC) No. 2015/830. Label element according to Regulation (EC) No 1272/2008.

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