

Raise3D Premium PVA Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

1.1 Identification of the material

Raise3D Premium PVA 3D Printing Filament

1.2 Identified uses

Used primarily for extrusion-based 3D printing processes

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 GHS Classification

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

2.2 Label elements

Not a dangerous substance or mixture according to the Globally Harmonized System (GHS)

2.3 Other hazards

No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. If small particles are generated during further processing, handling, or by other means, combustible dust concentrations in air may form. See section 7 for more information. See section 8 for more information.



Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Chemical Name	CAS No.	Weight (%)	Exposure Limits
Polyvinyl alcohol, fully saponified	9002-89-5	70%-88%	None
Methanol (Impurity)	67-56-1200-659-6	<2%	None

Section 4: FIRST AID MEASURES

4.1 Description of first aid measures

4.1.1 Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

4.1.2 Skin contact

Wash off with soap and water. Get medical attention if irritation develops and persists.

4.1.3 Eye contact

Do not rub eye. Rinse with water. Get medical attention if irritation develops and persists.

4.1.4 Ingestion

Rinse mouth. If ingestion of a large amount does occur, call a poison control centre immediately.

4.2 Most important symptoms and effects, both acute and delayed

Contact with dust: Irritation of eyes and mucous membranes. Coughing.

4.3 Indication of any immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media

Water fog. Foam. Dry powder. Carbon dioxide (CO₂). Use fire-extinguishing media appropriate for surrounding materials. Apply extinguishing media carefully to avoid creating airborne dust.

5.2 Special hazards arising from the substance or mixture

Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.



5.3 Advice for fire fighters

5.3.1 Special protective equipment for firefighters

Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

5.3.2 Special fire fighting procedures

Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to cool unopened containers.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protection recommended in Section 8 of the SDS.

6.2 Environmental precautions

Environmental manager must be informed of all major spillages.

6.3 Methods and materials for containment and cleaning up

Avoid the generation of dusts during clean-up. Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material, if this is without risk.

Section 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

7.2 Conditions for safe storage

Keep container tightly closed. Store in a well-ventilated place. Store away from incompatible materials (see section 10 of the SDS).



Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Dust (CAS -)	TWA	4 mg/m ³	Respirable dust
		10 mg/m ³	Inhalable dust
Methanol (Impurity) (CAS67-56-1)	STEL	333 mg/m ³	
		250 ppm	
		266 mg/m ³	
	TWA	200 ppm	

Biological limit values: No biological exposure limits noted for the ingredient(s)

Recommended monitoring procedures: Follow standard monitoring procedures.

Derived no-effect level (DNEL): Not available

Predicted no effect concentrations (PNECs): Not available

8.2 Engineering controls

Provide appropriate exhaust ventilation at places where dust is formed or the material is molten, such as during printing.

8.3 Personal protective equipment

Wear gloves when handling hot/molten material.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance: Filament, Solid

Color: Various

Odor: Odorless

Odor threshold: Not available

pH: 5-7

Melting point/freezing point: Not applicable

Boiling point: Not applicable



Flash point: Not applicable
Evaporation rate: Not applicable
Flammability: Not available
Upper/lower flammability or explosive limits: Not available
Vapor pressure: Not applicable
Vapor density: Not applicable
Relative density: Not applicable
Solubility: Soluble in water
Partition coefficient (n-octanol/water): No data available
Auto-ignition temperature: Not applicable
Decomposition temperature: Not applicable
Viscosity: Not applicable

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable at normal conditions.

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization does not occur.

10.4 Conditions to avoid

Contact with incompatible materials. Avoid dust close to ignition sources.

10.5 Incompatible materials

Strong oxidizing agents. Strong acids.

10.6 Hazardous decomposition products

Carbon oxides



Section 11: TOXICOLOGICAL INFORMATION

11.1 Likely routes of exposure

Inhalation: Dust irritates the respiratory system, and may cause coughing and difficulties in breathing
May be harmful if inhaled.

Skin contact: Components of the product may be absorbed into the body through the skin. Dust may irritate skin.

Eye contact: Dust may irritate the eyes.

Ingestion: May cause discomfort if swallowed.

11.2 Symptoms

Dust may irritate throat and respiratory system and cause coughing. Direct contact with eyes may cause temporary irritation.

11.3 Information on toxicological effects

Acute toxicity: Not expected to be acutely toxic.

Skin corrosion/irritation: Based on available data, the classification criteria are not met. Dust may irritate skin.

Serious eye damage/eye irritation: Based on available data, the classification criteria are not met. Dust may irritate the eyes. Exposed individuals may experience eye tearing, redness, and discomfort.

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

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

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.

Specific target organ toxicity - repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Due to the physical form of the product it is not an aspiration hazard.

Mixture versus substance information: Not applicable.

Other information: Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure.



Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2 Persistence and degradability

Expected to be inherently biodegradable.

12.3 Bioaccumulative potential

The product is not expected to bioaccumulate.

12.4 Mobility in soil

Not available.

12.5 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Section 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. Contact manufacturer if needed.

Section 14: TRANSPORT INFORMATION

ADR: Not regulated as dangerous goods.

RID: Not regulated as dangerous goods.

AND: Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods.

IMDG: Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

This substance/mixture is not intended to be transported in bulk.



Section 15: REGULATORY INFORMATION

15.1 International Inventories

TSCA: Complies

DSL/NDL: Complies

EINECS/ELINCS: Complies

ENCS: Complies

IECSC: Complies

KECL: Complies

PICCS: Complies

AICS: Complies

15.2 Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified

Chemical Substances ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

15.3 US Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute health hazard: No

Chronic Health Hazard: No

Fire hazard: No

Sudden release of pressure hazard: No

Reactive Hazard: No

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).



CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

15.4 US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. EPA Label Information

EPA Pesticide Registration Number: Not applicable

Section 16: OTHER INFORMATION

Revision information

Date of this revision: December 18, 2018

Declare to reader

The information above is believed to be accurate and represents the best information currently available to us.

However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.

This shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

