



Safety Data Sheet

According to EU Directive 1907/2006, as amended

Product name: Real filament PVA Plus

Date of issue: 23-7-2018

1. Identification of the substance/preparation and of the company

1.1 Trade name: Real filament PVA Plus

1.2 Use of the product: 3Dprinter Filament

1.3 Supplier:

ReprapWorld B.V.
Wagenmaker 6a
2631 RL Nootdorp, The Netherlands
Phone: +31 (0)85 0091531

2. Hazards identification

2.1 Classification of the substance or mixture

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%.

3. Composition/information on ingredients

3.2 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

4. First aid measures

4.1 On skin contact:

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.

If inhaled:

If breathed in, move person into fresh air.

In case of skin contact:

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

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.

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.



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4.2 After inhalation:

no data available

4.3 On ingestion:

no data available

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.

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

Use mechanical handling equipment. Keep in suitable, closed containers for disposal. Clean contaminated surface thoroughly.

7. Handling 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. Keep away from oxidising agents and strongly acid or alkaline materials. Keep away from food, drink and animal feedingstuffs.

Advice on common storage:



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Storage temperature:

> 0 °C and ≤ 40 °C

Other data:

No decomposition if stored and applied as directed

8. Exposure controls/personal protection

8.1 Control parameters

Components	CAS-No.	Type	Value	
Methanol (impurity)	67-56-1	STEL TWA:	333 mg/m ³ 250 ppm 266 mg/m ³ 200 ppm	
Aliphatic polyol Dust	-	PEL	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.
	-	PEL	5 mg/m ³ 15 mg/m ³	Respirable fraction. Total dust.

8.2 Exposure controls

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



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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

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	Solid Filament
Odour	Slight 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 ³
Vapour pressure	Not applicable
Vapour density	Not applicable
Relative density	1.19 – 1.31 g/cm ³
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	Oxidising potential: not oxidising

10. Stability

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.



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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:

vapour

Exposure time:

4 h

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

Carcinogenicity

present at greater than 0,1% are mutagenic or genotoxic

Reproductive toxicity:

Not classified as to carcinogenicity to humans

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

12. Ecological information

12.1 Toxicity

The product is not classified as environmentally hazardous.

Components

Methanol (Impurity)(67-56-1)

Test results

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 Results of PBT and vPvB assessment

No data available.

12.6 Other adverse effects

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.



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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..

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

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

16. Other information

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.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.