



SDS Report

Samples Name: PVA

Client Name: Zhejiang Flashforge 3D Technology Co. Ltd

Client Address: No. 518, Xianyuan Road, Wucheng District, Jinhua City, Zhejiang Province

Signed for and on behalf of HCT

Daniel

Daniel





Safety Data Sheet(SDS)

According to GHS

Report No.: SZC18121083185-6

Date: Dec. 15, 2018

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Section 1 - Identification of the substance/preparation and of the company/undertaking

Product identifier

Product Name : PVA
Trade Name: 3D printed lines
Chemical Uses: 3D printing supplies
File Numbers : SZC18121083185-6
Transport Fashion: Air, sea, rail, highway

Details of the supplier of the safety data sheet

Manufacture/Supplier : Zhejiang Flashforge 3D Technology Co. Ltd
Address: No. 518, Xianyuan Road, Wucheng District, Jinhua City, Zhejiang Province
Tel : 181 5795 7275
Emergency number : 0579-89007351
E-mail : 184021419@qq.com

Further information obtainable from: Zhejiang Flashforge 3D Technology Co. Ltd

Section 2 - Hazards Identification

	Min	Max	
Flammability	1		0=Minimum
Toxicity	2		1=Low
Body Contact	2		2=Moderate
Reactivity	1		3=High
Chronic	2		4=Extreme

GHS classification

Not Applicable

Label elements:

Not Applicable

SIGNAL WORD:

Not Applicable

Section 3 –Composition/Information on Ingredients

Ingredient Name	CAS No.	EC No.	Content (%)
PVA	9002-89-5	209-183-3	>97.9
Toughener	25852-37-3	--	2
Other additives	--	--	0.1





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Section 4 - First Aid Measures

INGESTION

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

EYE

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

- Treat symptomatically.

Section 5 - Fire Fighting Measures

EXTINGUISHING MEDIA

- Alcohol stable foam.
- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.

FIRE/EXPLOSION HAZARD

Polyvinyl alcohol powder is a ST-1 (strong) dust explosion hazard when tested to ASTM E-1226. The explosive





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hazard is highly dependent on particle size, the finer the particles the greater the explosive strength

Typical maximum explosion pressure: 540 kPa

Dust Explosion Hazard Class 1

Dusts fall into one of three Kst* classes. Class 1 dusts; Kst 1-200 m³/sec; Class 2 dusts; 201-299 m³/sec. Class 3 dusts; Kst 300 or more.

FIRE INCOMPATIBILITY

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Section 6 –Accidental Release Measures

MINOR SPILLS

- Generally not applicable.

MAJOR SPILLS

- Generally not applicable.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

Section 7 - Handling and Storage

PRECAUTIONS FOR SAFE HANDLING

- Use in a well-ventilated area.
- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidising agents

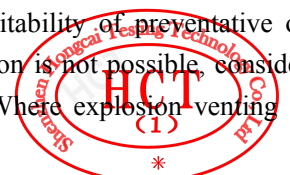
PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

Section 8 - Exposure Controls, Personal Protection

APPROPRIATE ENGINEERING CONTROLS

Assess operations based upon available dust explosion information to determine the suitability of preventative or protective systems as precautionary measures against possible dust explosions. If prevention is not possible, consider protection by use of containment, venting or suppression of dust handling equipment. Where explosion venting is





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considered to be the most appropriate method of protection, vent areas should preferably be calculated based on Kst rather than an St value. If nitrogen purging is considered as the protective system, it must operate with an oxygen level below the limiting oxygen concentration.

PERSONAL PROTECTION



EYE AND FACE PROTECTION

- Safety glasses with side shields
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

SKIN PROTECTION

See Hand protection below

HANDS/FEET PROTECTION

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Suitability and durability of glove type is dependent on usage.

BODY PROTECTION

See Other protection below

OTHER PROTECTION

- Overalls.
- P.V.C. apron.
- Barrier cream.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Color	Transparent yellow
Form	Strip
Odor	Odorlessness
Melting Range (°C)	No data.
Boiling Range (°C)	No data.
Flash Point (°C)	No data.
Decomposition Temp (°C)	No data.
Autoignition Temp (°C)	No data.
Upper Explosive Limit (%)	No data.
Lower Explosive Limit (%)	No data.





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Volatile Component (%vol)	No data.
Molecular Weight	No data.
Viscosity	No data.
Solubility in water (g/L)	Partly Miscible
pH (1% solution)	No data.
pH (as supplied)	No data.
Vapour Pressure (kPa)	No data.
Specific Gravity (water=1)	No data.
Relative Vapour Density (air=1)	No data.
Evaporation Rate	No data.

Section 10 - Stability and Reactivity

REACTIVITY

See section 7

CHEMICAL STABILITY

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - Toxicological Information

Information on toxicological affects

Acute Toxicity

LD/LC50 values relevant for classification

No data.

Primary irritant effect

On the skin

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

On the eyes

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

Inhaled

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.





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Sensitization

No data.

Section 12 - Ecological Information

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
PVA	LOW	No Data Available	LOW	HIGH
Toughener	No Data Available	No Data Available	No Data Available	No Data Available
Other additives	No Data Available	No Data Available	No Data Available	No Data Available

Section 13 - Disposal Considerations

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

Section 14 - Transport Information

Labels Required

Marine Pollutant: NO

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: UN, IATA, IMDG

Section 15 - Regulatory Information

REGULATIONS

The product needs to follow local regulations.

Section 16 - Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This information of section 1, 3 and 9 is provided by Zhejiang Flashforge 3D Technology Co. Ltd.





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