

Material Safety Data Sheet

according to Regulation (EC) No. 1907/2006
Issued December 2016,
Rev.3: April 2017

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Trade name: BVOH Filament for 3D Printer
Registration number: -
Synonyms: None

55901 VERBATIM 3D PRINTER FILAMENT BVOH 1.75MM 500G WHITE
55902 VERBATIM 3D PRINTER FILAMENT BVOH 2.85MM 500G WHITE

1.2. Relevant identified uses: 3D Printer Filament for Material Extrusion type

1.3. Supplier: Verbatim GmbH
Address: Duesseldorfer Strasse 13
D- 65760
Eschborn, Germany
Email SDS@verbatim-europe.com
Emergency Telephone Number: +49 (0) 6196 9001- 0

2. HAZARDS IDENTIFICATION GHS Classification:

2.1. Classification of the substance or mixture

The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies:

Classification according to Regulation (EC) No 1272/2008 as amended.

This substance does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

2.2. Label elements

Label according to Regulation (EC) No. 1272/2008 as amended

Hazard pictograms: Not applicable
Signal word: Not applicable
Hazard statements: The mixture does not meet the criteria for classification.
Other hazards: None known

2.3. Precautionary statements

Safety measures:	Do not breathe dust/fume/gas/mist.
Response:	Get medical attention/advice if you feel unwell.
Storage:	Keep away from fire. Store indoors at ambient temperature.
Disposal:	Do not dump into sewers, on the ground or into any body of water. Burn in an adequate incinerator or bury in landfill in accordance with applicable local, state and federal regulations.
Supplemental label information:	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Description	CAS ID	EINECS No.	Content in %
Butenediol -Vinyl Alcohol copolymer and Additives	listed		>= 99.0

4. FIRST AID MEASURES

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1 Description of first aid measures

Inhalation:
 If you feel unwell by inhalation of vapor or gas, move to fresh air and keep at rest in a position comfortable for breathing. Call a doctor if you feel unwell.

Skin Contact:
 In case of contact with melted material, fully cool down by pouring plenty of water over the clothing. Then take off clothing, cover with clean gauze and get medical attention immediately. Get medical attention if appearance changes, irritating pain occurs or feeling unwell.

Eye contact:
 Immediately rinse the eye with plenty of clean running water for at least 15 minutes. Remove contact lenses, if present and easy to do. Rinse thoroughly the inner side of the eye lid. Get medical attention as soon as possible.

Ingestion:
 If swallowed by accident, keep at rest and get medical attention immediately. Avoid vomit entering into respiratory tract. Do not induce vomiting unless instructed by a doctor.

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

Exposure may cause temporary irritation, redness, or discomfort.

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

Treat symptomatically.

5. FIRE-FIGHTING MEASURES

General fire hazards: No unusual fire or explosion hazards noted.

5.1 Extinguishing media:

Suitable extinguishing media:

Water fog. Foam, dry chemical powder, Carbon dioxide (CO₂).

Unsuitable extinguishing media:

Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture:

During fire, hazardous gases may be formed.

5.3 Special protective equipment for firefighters:

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

Specific methods:

Use standard firefighting procedures and consider the hazards of other involved materials.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:

Keep unnecessary personnel away.

For personal protection, see section 8 of the SDS

For emergency responders:

Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS

6.2 Environmental precautions:

Avoid discharge into drains, water courses or onto the ground

6.3 Methods and material for containment and cleaning up:

Stop the flow of material, if this is without risk.

Following product recovery, flush area with water

6.4 Reference to other sections:

For personal protection, see section 7,8 & 11, 12 and 13 of the SDS.

7. HANDLING AND STORAGE

- 7.1. Precautions for safe handling:** Handle in a well-ventilated area. Installation of local exhaust at 3D printers area is recommended when many printers are operated at once. Keep away from fire (ignition source) and store at ambient temperature.
- 7.2. Storage:** Keep containers tightly closed in a dry and cool place. Protect from water, moisture and direct sunlight and store indoors at ambient temperature and well-ventilated. Keep away from oxidizing agents and strongly acid or alkaline materials. Keep away from food, drink and animal feeding stuffs.
- 7.3. Storage Temperature** <= 40 °C
- 7.4. Other Data:** No decomposition if stored and applied as directed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits:

No exposure limits noted for ingredient(s)

Recommended monitoring procedures:

Follow the standard monitoring procedures

8.2. Exposure controls:

Appropriate engineering controls:

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

8.3. Individual protection measures, such as personal protective equipment

General information:

Personal protection equipment should be chosen according to the CEN standard discussion with the supplier of the personal protective equipment.

Eye/face protection:

Wear safety glasses with side shields (or goggles).

8.4. Skin protection:**Hand protection:**

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

Other: Wear suitable protective clothing.

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal Hazards:

Wear appropriate thermal protective clothing, when necessary.

8.5. Hygiene measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls:

Environmental manager must be informed of all major releases.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties:

Appearance:	
Physical state:	Solid Filament Shape
Colour(s):	White, Light Yellow
Odor:	Slight vinegar like
Odor threshold:	No data available
pH:	5.0 – 7.0. Concentration: 100.00 g/L
Melting Point Range:	150- 230 °C
Flash Point:	> 392 °F (> 200 °C) Method: Seta closed cup
Flammability (solid, gas):	No data available
Upper/lower flammability or explosive limits:	
Flammability limit- lower (%) :	No data available.
Flammability limit- upper (%) :	No data available
Vapor pressure:	No data available
Relative vapor density :	No data available
Solubility(ies):	
Solubility (water):	Soluble(emulsified)
Solubility (other):	Insoluble Medium: Acetone Insoluble Medium: Alcohol Insoluble Medium: n-Hexane Insoluble Medium: Toluene Insoluble Medium: Dimethyl form amide Insoluble Medium: Dimethyl sulfoxide
Partition coefficient (n-octanol/water)	No data available
Auto ignition temperature:	968 °F (520 °C)
Decomposition temperature:	> 392 °F (> 200 °C)
Viscosity:	No data available
Lower explosion limit:	35 g/m ³
Upper explosion limit :	No data available
Explosive properties:	No data available
Oxidizing properties:	No data available

9.2. Other information

Density:	1.19 – 1.31 g/cm ³
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10. Stability and reactivity

10.1. Reactivity:

Possibility of hazardous reactions:

The product is stable and non-reactive under normal conditions of use, storage and transport. Stable at room temperature. Decomposition becomes noticeable at high temperature (200°C or more). No decomposition if stored and applied as directed. Dust can form an explosive mixture in air.

**Conditions to avoid:
 Incompatible materials:
 Hazardous decomposition products:**

High-temperature and humidity. Oxidizing agents, Acids, Bases. In case of fire, toxic decomposition products (carbon monoxide, etc.) may be generated.

10. TOXICOLOGICAL INFORMATION

General information:

Occupational exposure to the substance or mixture may cause adverse effects.

11.1 Information on toxicological effects

Acute toxicity:

Butenediol-Vinyl Alcohol copolymer;
 Acute oral toxicity: LD50 Oral : > 2,000 mg/kg

Skin corrosion/irritation:

No data available

Serious eye damage/eye irritation:

No data available

Respiratory sensitization:

No data available

Skin sensitization:

No data available

Germ cell mutagenicity:

Genotoxicity in vitro: No data available
 Genotoxicity in vivo: No data available

Carcinogenicity:

IARC: Not listed
 NTP Report: Not listed
 OSHA: Not listed

Reproductive toxicity:

No data available

Teratogenicity:

No data available

Specific target organ toxicity

-single exposure:

No data available

Specific target organ toxicity

-repeated exposure:

No data available

Aspiration hazard:

No data available

Neurological effects:

No data available

Toxicology Assessment:

Toxicology, Metabolism, Distribution: No data available.
 Acute effects: No data available.

Mixture versus substance information:

No information available

Other information:

This product has no known adverse effect on human health.

11. ECOLOGICAL INFORMATION

- 12.1. Toxicity:** **Toxicity to fish:** NOEC \geq 200mg/L.
Exposure time: 9 d./ Species: Danio rerio.
- Test method: Short-term toxicity test on embryo and fish larval stage.**
Toxicity to crustacean: NOEC \geq 50 mg/L.
Exposure time: 6 d./ Species: Ceriodaphnia dubia.
- Test method: Reproductive inhibition test.**
Toxicity to algae: NOEC \geq 200mg/L
Exposure time: 72 hr./Species: Pseudokirchneriella subcapitata.
- Test method: Growth inhibition test.**
- 12.2 Persistence and degradability:**
Product: Note: Inherently biodegradable.
Butenediol-Vinyl Alcohol Biodegraded by sludge containing such as
copolymer: Pseudomonas.
- 12.3 Bioaccumulative potential:**
Product: Note: Inherently biodegradable.
Butenediol-Vinyl Alcohol Not or- low bioaccumulative.
copolymer:
- 12.4 Mobility in soil:** No data available
- 12.5. Results of PBT and vPvB assessment:** Not available
- 12.6. Other adverse effects**
Additional ecological information:
This product does not contain the ingredients that are listed in the Annex to the Montreal Protocol.

12. DISPOSAL CONSIDERATIONS

- 13.1. Waste treatment methods**
- Residual waste:** Dispose of in accordance with local regulations
- EU waste code:** The Waste code should be assigned in discussion between the user, the producer and the waste disposal company
- Disposal methods/ information:** Do not dump into sewers, on the ground or into any body of water. Burn in an adequate incinerator or bury in landfill in accordance with applicable regulations.
- Special precautions:** Dispose in accordance with all applicable regulations.
- Water this product solved:** Dispose of waste in accordance with applicable local, regional and international regulations and standards. Do not exceed 1mg/L in a river which the waste liquid flow into when it is disposed of from a drain as water solution. Also, it should be diluted with water by at least 20 times when disposed of. It can be disposed of as water solution in a day with maximum 2kg as itself.

13. TRANSPORT INFORMATION

Regulatory Body	Special Provisions
ADR	Not regulated as dangerous goods
RID	Not regulated as dangerous goods
AND	Not regulated as dangerous goods
IMDG	Not regulated as dangerous goods
IATA	Not regulated as dangerous goods
Special precautions for user:	See chapter: 6, 7 and 8.

14. REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No. 1005/2009 on substances that deplete the ozone layer, Annex I and II, as amended: Not listed

Regulation (EC) No. 850/2004 On persistent organic pollutants, Annex I as amended: Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 1 as amended: Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 2 as amended: Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex I, Part 3 as amended: Not listed

Regulation (EU) No. 649/2012 concerning the export and import of dangerous chemicals, Annex V as amended: Not listed

Regulation (EC) No. 166/2006 Annex II Pollutant Release and Transfer Registry, as amended: Not listed

Regulation (EC) No. 1907/2006, REACH Article 59(10) Candidate List as currently published by ECHA: Not listed

Authorizations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended: Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended: Not listed

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended: Not listed

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breastfeeding, as amended: Not listed

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances: Not listed

Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work, as amended: Not listed

Directive 94/33/EC on the protection of young people at work, as amended: Not listed

Other regulations:

The product is classified and labelled in accordance with EC directives or respective national laws. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations:

Follow national regulation for work with chemical agents.

14.3. Chemical safety assessment:

No Chemical Safety Assessment has been carried out

15. Other information

List of abbreviations	Not available
References	GESTIS Substance Database
	ACGIH: Documentation of the Threshold Limit Values and Biological Exposure Indices
	EPA: AQUIRE database
	HSDB®: Hazardous Substances Data Bank
	IARC Monographs: Overall Evaluation of Carcinogenicity Raw material safety data sheet (SDS)

Information on evaluation method leading to the classification of mixture

Not available

Full text of any H-statements not written out in full under Sections 2 to 15

None

Disclaimer:

This safety data sheet (SDS) is issued based on the latest reference, data etc. currently available. The information in this SDS has been carefully assessed, but no guarantee is given for its accuracy. We cannot anticipate all conditions under which this product may be used. It is the user's responsibility to take appropriate safety measures for handling. Verbatim Limited cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.