

**PRODUCT NAME:** 3D FILAMENT PVB

**PRODUCT DESCRIPTION:** PVB filament is a polyvinyl butyral in the form of a thread, designed for 3D printing using the FFF/FDM method. Filament coiled on spools, vacuum-packed with desiccant in a PET/PE bag, and then in a box.

## SECTION 1. Product and company identification

### 1.1. Product identification

**Product name:** 3D FILAMENT PVB  
**Trade name:** 3D FILAMENT PVB 1,75mm 0,5kg  
**Chemical name:** polyvinyl butyral

### 1.2. Relevant identified uses of the substance or mixture and uses advised against

**Identified uses:** Extrusion in FDM 3D printing

### 1.3. Data on the supplier of the safety data sheet

**Supplier:** ROSA PLAST Sp. z o.o.  
05-074 Hipolitów, Polska  
ul. Hipolitowska 102B  
tel: +48 783 62 62

**Email address of the person responsible for this safety datasheet:** 3d@rosaplast.pl

## SECTION 2. Hazard identification

### 2.1. Classification of a substance or mixture

The substance 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.

#### Hazard summary

Dusts may irritate the respiratory tract, skin and eyes. Exposed individuals may experience eye tearing, redness, and discomfort. Released dust may irritate throat and respiratory system and cause coughing. Prolonged contact may cause dryness of the skin.

## 2.2. Labelling elements

The substance does not meet the criteria for classification.

### Precautionary statements

**Prevention:** Use personal protective equipment as required.

**Response:** No specific first aid measures noted.

**Storage:** Store in a dry area. Store in a closed container.

**Disposal:** Dispose of waste and residues in accordance with local authority requirements.

## 2.3. Other hazards

Fine particles may form explosive mixtures with air. This material does not ignite easily; however, feasible precautions against dust explosion are recommended.

## SECTION 3. Composition/information about ingredients

### 3.1. Substances

**General information:**

**Chemical name:** PVB polyvinyl butyral

**CAS No:** 68648-78-2

**PVB percentage in mixture:** >99%

**Other ingredients:** -

**Composition comments:** All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. Polyvinyl butyral can also have CAS no 63148-65-2.

## SECTION 4. First aid measures

**General information:** If you feel unwell, seek medical advice (show the label where possible).

### 4.1. Description of first aid measures

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

**Skin contact:** Rinse skin with water. Get medical attention if irritation develops and persists.

**Eye contact:** Do not rub the eyes. Rinse with water. Get medical attention if irritation develops and persists.

**Ingestion:** Rinse mouth. Get medical attention if symptoms occur.

### 4.2. Main acute and delayed symptoms and effects of exposure

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

### 4.3. Indications regarding all immediate medical attention and special treatment of the victim

Provide general supportive measures and treat symptomatically.

## SECTION 5. Firefighting measures

**General fire hazards:** The product may form dust and can accumulate electrostatic charges, which may cause an electrical spark (ignition source). Use proper grounding procedures.

### 5.1. Extinguishing agents

**Suitable extinguishing media:** Water fog. Foam. Dry chemical powder. Carbon dioxide: Apply extinguishing media carefully to avoid creating airborne dust. Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

**Unsuitable extinguishing media:** Do not use a solid water stream as it may scatter and spread fire.

### 5.2. Specific hazards associated with a 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. Information for the firefighters

**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 a fire.

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

## SECTION 6. Unintended release into the environment

### 6.1. Individual precautions, protective equipment and emergency procedures

**For non-emergency personnel:** Keep unnecessary personnel away. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust and contact with skin and eyes.

**For emergency responders:** Use personal protection recommended in Section 8 of the SDS.

### 6.2. Environmental precautions

Avoid discharge into drains, water courses or onto the ground. Environmental manager must be informed of all major spillages.

### 6.3. Methods and materials to prevent the spread of contamination and to remove contamination

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Stop the flow of material if this is without risk.

Large spills: Wet down with water, build a ditch or a dam, then dispose of the substance. Shovel the material into waste container. Collect dust or particles using a vacuum cleaner with a HEPA filter. Following product recovery, flush area with water.

Small spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not use compressed air when cleaning.

#### 6.4. References to other sections

For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.

## SECTION 7. Handling and storage

### 7.1. Precautions for safe handling

Avoid inhalation of dust and contact with skin and eyes. Wear appropriate personal protective equipment. Wash hands after using the material. Observe good industrial hygiene practices. Avoid dust formation and dispersion. Periodically clean work and storage areas to prevent dust accumulation. Use only in well-ventilated areas. Take precautionary measures against static discharges when there is a risk of dust explosion.

### 7.2. Safe storage conditions, including incompatibilities.

Keep in original container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials. Read and follow manufacturer's recommendations. (see section 10 of the SDS).

### 7.3. Specific end use(s)

Extrusion in FDM 3D printing.

## SECTION 8. Exposure control/personal protective equipment

### 8.1. Control parameters

#### Occupational exposure limits

**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. Exposure control

**Appropriate engineering controls:** Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) 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. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL (occupational exposure limit), suitable respiratory protection must be worn. Provide sufficient ventilation for operations causing dust formation. Follow above occupational exposure limit values for dusts. Ventilate as needed to control airborne dust. Use explosion-proof electrical equipment if airborne dust levels are high.

## Individual protection measures, such as personal protective equipment

**General information:** Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

### Hand protection:

Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by the glove supplier. It is a good industrial hygiene practice to minimize skin contact.

### Skin protection:

Wear suitable protective clothing. It is a good industrial hygiene practice to minimize skin contact.

### Eye/face protection:

Wear safety glasses with side shields (or goggles).

### Respiratory protection:

In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter (type P2).

### Environmental exposure controls:

Contain spills and prevent releases and observe national regulations on emissions.

### Thermal hazards:

Wear appropriate thermal protective clothing, when necessary.

## SECTION 9. Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

**Physical state:** Solid.

**Colour:** Depends on used masterbatch.

**Odour:** Odourless.

**pH:** Not available.

**Melting point/freezing point:** 135 - 210°C

**Initial boiling point and boiling range:** Not available.

**Flash point:** Not available.

**Evaporation rate:** Not available.

**Flammability (solid, gas):** Not available.

**Upper/lower flammability or explosive limits:** Not available.

**Vapor pressure:** Not available.

**Vapor density:** Not available.

**Solubility:** Not available.

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

**Auto-ignition temperature:** > 380°C

**Decomposition temperature:** Not available.

**Viscosity:** Not available.

**Explosive properties:** Not explosive.

**Oxidizing properties:** Not oxidizing.

## 9.2. Other information

Percent volatile: < 1% w/w

## SECTION 10. Stability and reactivity

### 10.1. Reactivity

Stable under normal conditions.

### 10.2. Chemical stability

Material is stable under normal conditions.

### 10.3. Possibility of dangerous reactions

Hazardous polymerization does not occur.

### 10.4. Conditions to avoid

Avoid dust close to ignition sources. Keep away from heat, sparks and open flame. Prevent from contact with incompatible materials. Minimize dust generation and accumulation.

### 10.5. Non-compliant material

Strong oxidizing agents. Strong acids.

### 10.6. Hazardous decomposition products

Carbon oxides.

## SECTION 11. Toxicological information

**General information:** Dusts or powder may irritate the respiratory tract, skin and eyes.

**Inhalation:** Dust irritates the respiratory system and may cause coughing and difficulties in breathing.

**Skin contact:** Dust may irritate skin. Product ingredients may be absorbed by skin.

**Eye contact:** Dust may irritate the eyes.

**Ingestion:** May cause discomfort if swallowed.

### 11.1. Information on toxicological effects

#### Acute toxicity:

Dusts may irritate the respiratory tract, skin and eyes.

#### Skin corrosion / irritation:

Dust may irritate skin.

#### Serious eye damage eye irritation:

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:**

Not a skin sensitizer.

**Germ cell mutagenicity:**

Not expected to be mutagenic.

**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:**

Due to partial or complete lack of data the classification is not possible.

**Specific target organ toxicity – repeated exposure:**

Due to partial or complete lack of data the classification is not possible.

**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

Follow good industrial hygiene practices.

**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. Durability and decomposition capacity**

The product is not expected to be biodegradable.

**12.3. Bioaccumulative potential**

No data available.

**Partition coefficient n-octanol/water (log Kow)**

No data available.

**Bioconcentration factor (BCF)**

Not available.

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB evaluation**

Not available.

**12.6. 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. Waste management

**13.1. Methods of disposal of waste****Residual waste:**

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

**Contaminated packaging:**

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of in accordance with local regulations.

**Eu waste code:**

07 02 13 The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

**Disposal methods/information:**

Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of in accordance with local regulations.

**Special precautions:**

Dispose in accordance with all applicable regulations.

## SECTION 14. Transport information

Not regulated as dangerous goods in the field of: road transport (A.D.R.), maritime transport (IMDG Code) and air transport (IATA).



**14.1. UN number**

Not applicable.

**14.2. Valid UN shipping name**

Not applicable.

**14.3. Hazard class(es) in transport**

Not applicable.

**14.4. Packing group**

Not applicable.

**14.5. Environmental risks**

Not applicable.

**14.6. Special precautions for users**

Not applicable.

**14.7. Bulk transport in accordance with Annex II to MARPOL73/78 and the IBC Code**

Not applicable.

## SECTION 15. Regulatory information

**15.1. Safety, health and environmental 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 (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 1 as amended:  
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 2 as amended:  
Not listed.

Regulation (EC) No. 689/2008 concerning the export and import of dangerous chemicals, Annex I, part 3 as amended:  
Not listed.

Regulation (EC) No. 689/2008 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:  
Not listed.

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

**National regulations:** Follow national regulation for work with chemical agents.

#### **15.2. Chemical safety assessment**

No Chemical Safety Assessment has been carried out.

## SECTION 16. Other information

#### **EXPLANATIONS OF ABBREVIATIONS:**

- CLP: Regulation No. 1272/2008
- DNEL: Derived No-Effect Level
- PNEC: Predicted No-Effect Concentration
- IATA: International Air Transport Association

- IMDG: International Maritime Dangerous Goods
- PBT: Persistent, Bioaccumulative, Toxic
- REACH: Registration, Evaluation and Authorization of Chemicals
- vPvB: very Persistent, very Bioaccumulative
- OEL: Occupational Exposure Limit
- ADR: Agreement concerning the International Carriage of Dangerous Goods by Road
- MARPOL: International Convention for the Prevention of Pollution from Ships

### Training information:

Follow training instructions when handling this material.

### Further information:

The substance is classified based on test data for physical hazards. The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available. For details, refer to Sections 9, 11 and 12.

### Note for users:

This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment. ROSA PLAST Sp. z o.o. 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.



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