

PRODUCT NAME: 3D FILAMENT PC-PBT
PRODUCT DESCRIPTION: PC-PBT filament – blend of polycarbonate and polybutylene terephthalate 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 PC-PBT
Trade name: 3D FILAMENT PC-PBT 1,75mm
Chemical name: Blend: polycarbonate and polybutylene terephthalate

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

E-mail address of the person responsible for this safety datasheet: 3d@rosaplast.pl

SECTION 2. Hazard identification

2.1. Classification of a substance or mixture

This product is not classified as dangerous according to GHS criteria.

2.2. Label elements

The product does not require a hazard warning label in accordance with GHS criteria.

2.3. Other hazards

No special risks are known.

SECTION 3. Composition/information about ingredients

3.1. Substance

Non-applicable.

3.2. Mixture

Chemical name: Polycarbonate (PC), Polybutylene Terephthalate (PBT), modifier, additives, pigments

Hazardous ingredients: Applicable for colored mixtures (in particular for bright colors & white):

Titanium dioxide

Loading (W/W): >= 1% - <= 10%

CAS: 13463-67-7

EG: 236-675-5

REACH: 01-2119489379-17

Affected containers are labelled separately.

SECTION 4. First aid measures

4.1. Description of first aid measures

Avoid contact with the skin, eyes and clothing.

Inhalation: If difficulties occur after dust has been inhaled, remove to fresh air and seek medical attention.

Skin contact with melted polymer:

a) Cool with water

b) Do not use force or solvents to remove product incrustations from affected skin areas

c) Medical treatment necessary

Eye contact: If irritation develops, seek medical attention. In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water.

Ingestion: Rinse mouth and then drink plenty of water. If difficulties occur: Seek medical attention.

4.2. Main acute and delayed symptoms and effects of exposure

There are no known significant human body reactions to the product. No risk is expected with intended use and proper handling.

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

Treatment: Treat symptomatically

SECTION 5. Firefighting measures

5.1. Extinguishing agents

Suitable extinguishing media: Water mist or fine spray, dry chemical extinguishers, CO₂ extinguishers, foam.

5.2. Specific hazards associated with a substance or mixture

Hazardous combustion products: Special hazards associated with the substance or mixture

Avoid thermal decomposition (see section 9 for decomposition temperature).

Hazardous gases and vapors containing mainly carbon monoxide and nitrogen oxides may be formed during thermal decomposition caused by overheating during processing or in case of fire.

Further hydrocarbons (aromatic and aliphatic), furan derivatives, tetrahydrofuran, terephthalic acid.

Under special circumstances, traces of other toxic components cannot be excluded. The formation of other decomposition products depends on combustion conditions.

5.3. Information for the firefighters

Special protective equipment for firefighters: Wear an independent breathing apparatus, as toxic gases and carbon monoxide may be produced. Wear protective clothing and face protection. Dispose of fire residue and contaminated firefighting water in accordance with official regulations.

SECTION 6. Unintended release into the environment

6.1. Individual precautions, protective equipment and emergency procedures

Fine clippings: Particular danger of slipping on fine clippings from the product. Collect the contamination mechanically. Danger of exothermic decomposition. Cool with water.

6.2. Environmental precautions

No special precautions required.

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

For small quantities: Collect with a suitable device and dispose of.

For large quantities: Collect with a suitable device and dispose of.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations - see section 8 and 13.

SECTION 7. Handling and storage

7.1. Precautions for safe handling

Take precautions against electrostatic discharge. Do not inhale dust.

Take into account dust explosion regulations when crushing or grinding the product. Use closed systems. Provide exhaust ventilation. Do not inhale vapors

7.2. Safe storage conditions, including incompatibilities.

Storage conditions: store in accordance with good manufacturing practice.

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: not determined, general dust limit must be provided during processing. Dust, respirable fraction AGW 1.25 mg/m³ (TRGS 900 (DE)), component in accordance with the general dust limit (TRGS 900, No. 2.4 & 2.5).

Dust, inhalable fraction (total dust) AGW 10 mg/m³ (TRGS 900 (DE)), inhalable fraction peak limit/excess ratio: 2

Short-term exposure classification: (TRGS 900 (DE)), inhalable fraction Category II: Resorbent substances.

8.2. Exposure control

General security and hygiene measures in the workplace: Personal protective equipment should be selected in accordance with the relevant regulations on their approval and in cooperation with their supplier.

Hand protection: Use additional heat protection gloves when handling hot molten masses (EN 407), e.g. of textile or leather.

Eye/face protection: Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Respiratory protection: Breathing protection if breathable aerosols/dust are formed. Wear respiratory protection (type P3) if ventilation is inadequate.

Other safety and hygiene controls:

Do not eat, drink or smoke at workstation. Wash hands and uncovered skin after work.

SECTION 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

For complete information see the product technical datasheet.

Physical state: Solid.

Colour: Depends on used masterbatch.

Odour: Odourless.

Odour threshold: No data.

pH: No data.

Melting point: ~220°C.

Evaporation rate: Not applicable.

Flammability: Not applicable.

Ignition temperature: >350°C.

Self ignition temperature: >350°C.

Lower explosion limit: Not applicable.

Explosion risk: No risk of explosion.

Decomposition temperature: >290°C.

Oiling range: Product decomposes, not applicable.

Density: 1,1-1,6 g/cm³.

Relative density: No data.

Vapor pressure: Not applicable.

Relative vapor density: Not applicable.

Viscosity: Not applicable.

Solubility in water: Insoluble.

Partitioning coefficient (n-octanol/water): Not applicable.

Kinematic viscosity: Not applicable.

SECTION 10. Stability and reactivity

10.1. Reactivity

Hazardous reactions are not expected under normal conditions of use.

10.2. Chemical stability

Chemically stable in normal conditions.

10.3. Possibility of dangerous reactions

No hazardous reactions occur in normal conditions.

10.4. Conditions to avoid

Avoid temperatures above decomposition temperature (cf. Section 9). Upon thermal decomposition, e.g. by overheating during processing, or in case of fire, hazardous gases and vapors may be formed. Seek "hazardous decomposition products".

10.5. Non-compliant material

No data.

10.6. Hazardous decomposition products

Mainly carbon monoxide and nitrogen oxides.

Further Hydrocarbons (aromatic and aliphatic), furan derivatives, tetrahydrofuran, terephthalic acid.

Under special circumstances, traces of other toxic components cannot be excluded. Formation of other decomposition products depends on burning conditions.

SECTION 11. Toxicological information

11.1. Information on toxicological effects

Strong toxicity: Contact with molten product may cause thermal burns.

Irritation: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Contact with eyes: Eye contact with granules may cause eye irritation.

Respiratory/Skin sensitization: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Germ cell mutagenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Carcinogenicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Reproductive toxicity: Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Specific target organ toxicity (single exposure): Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Specific target organ toxicity (repeated exposure): Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Aspiration hazard: No aspiration hazard expected.

Other relevant toxicity information: None.

SECTION 12. Ecological information

12.1. Toxicity

There is a high probability that the product is not acutely harmful to aquatic organisms, due to the chemical structure and insolubility in water.

12.2. Persistence and degradability

Experience shows this product to be inert in water and non-degradable. The product is virtually insoluble in water and can thus be separated from water mechanically in suitable effluent treatment plants.

12.3. Bioaccumulative potential

Bioaccumulation is not expected due to its consistency and insolubility in water.

12.4. Mobility in soil

Study scientifically not justified due to product consistency and insolubility in water.

12.5. Results of PBT and vPvB assessment

The product is not persistent, bio-accumulative, toxic.

SECTION 13. Waste management

13.1. Methods of waste disposal

Check for possible recycling. The preparation can be molten and processed several times. Consider sorting accuracy and cleanliness of plastics.

Incinerate in suitable incineration plant, or landfill as consumer waste, observing local authority regulations.

Waste code according to European waste catalogue: 070213 waste plastic

Contaminated packaging: Packs must be completely emptied. Completely emptied packages can be given for recycling.

SECTION 14. Transport information

Land transport - ADR/RID:

Not classified as a dangerous good under transport regulations.

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): Not applicable.

Packing group: Not applicable.

Environmental hazards: Not applicable.

Special precautions for user: None known.

Inland waterway transport - ADN:

Not classified as a dangerous good under transport regulations.

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): Not applicable.

Packing group: Not applicable.

Environmental hazards: Not applicable.

Special precautions for user: None known.

Transport in inland waterway vessel: Not evaluated.

Sea transport - IMDG:

Not classified as a dangerous good under transport regulations.

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): Not applicable.

Packing group: Not applicable.

Environmental hazards: Not applicable.

Special precautions for user: None known.

Transport in inland waterway vessel: Not evaluated.

Air transport - IATA/ICAO:

Not classified as a dangerous good under transport regulations.

UN number: Not applicable.

UN proper shipping name: Not applicable.

Transport hazard class(es): Not applicable.

Packing group: Not applicable.

Environmental hazards: Not applicable.

Special precautions for user: None known.

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

Regulation: Not evaluated.

Shipment approved: Not evaluated.

Pollution name: Not evaluated.

Pollution category: Not evaluated.

Ship type: Not evaluated.

SECTION 15. Regulatory information

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

Product is not classified as hazardous.

15.2. Chemical safety assessment

Not required.

SECTION 16. Other information

Note for users:

The preparation must not be used to produce medical parts which are intended as a permanent implant in the human body. Follow training instructions when handling this material. The information contained in this sheet is based on the knowledge we have as of the date of the last version of the sheet. The user should verify that the information provided is correct and comprehensive in relation to the specific application of the product. This document must not be equated with a guarantee of any specific product property. Since the manufacturer does not have the ability to directly control the use

of the product, the user is obliged to comply with the laws and orders in force on hygiene and safety. The manufacturer assumes no responsibility for misuse of the product.

