THE **LARGE-SCALE** FFF 3D-PRINTER
FOR **PROFESSIONAL** AND **INDUSTRIAL** USE.

MATERIAL SAFETY DATA SHEET

BigRep Filament ProFlex

The material complies with the compositional requirements of the European Regulation on Plastic Food Contact Materials and with the requirements of LFGB

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

1.1 Trade name:	**BigRep Filament ProFlex**
1.2 Chemical name:	**TPU**
1.3 Typical use of the material:	**Monofilament for FFF/FDM technology based 3D printing**
1.4 Identification of the company:	**BigRep GmbH** **Gneisenaustraße 66** **10961 Berlin – Germany** **Phone : +49 30 20 84 82 60** **Email : office@bigrep.com**

2. Hazards identification

2.1 Risk advise to man and the environment:	**No risk exists to the health of users if the product is handled and processed properly.**
2.2 Classification of the substance or mixture:	**Harmless**
2.3 Special advice on hazards:	**Burns while handling the heated or molten product.**

3. Composition / information on ingredients

3.1 Chemical nature:	**Blend of polymer for 3D printing**
3.2 Additional information:	**No harmful**

4. First-aid measures

4.1 If inhaled:	**After inhalation of decomposition products, gases or dust, bring the affected person to a source of fresh air and keep calm. Contact a physician in case of discomfort.**
4.2 On skin contact:	**In case of contact with melted material, immediately cool the skin with plenty of cold running water. Removal of adhering to skin polymer, or burns caused by molten material require hospital treatment.**

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4.3 On contact with eyes:	**In case of contact with melten material, immediately cool the skin with plenty of cold running water. Removal of adhering to skin polymer, or burns caused by molten material require hospital treatment.**
4.4 On ingestion:	**Rinse mouth with water and then drink plenty of water. Seek medical attention if difficulties or discomfort occur.**

5. Firefighting measures

5.1 Suitable extinguishing media:	**Dry extinguishing, CO2 or water (only if filament is away from any the printer and any electrical Equipment).**
5.2 Specific hazards:	**Carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides and organics products. The substances mentioned can be released in case of fire.**
5.3 Special protective equipment:	**Full protective clothing and self-contained breathing apparatus.**
5.4 Further information:	**Risk is governed by the burning substance and the fire conditions. In case of combustion, toxic gases/vapors possible. Fire residues and dispose of contaminated water according to official regulations.**

6. Accidental Release Measures

6.1 Personal precautions:	**Avoid eye and skin contact. All ignition sources shall be removed. Inhale from dust shall be avoided. If necessary, use dust mask and Goggles.**
6.2 Environmental precautions:	**Prevent entry into drainage systems, or surface water.**
6.3 Methods for cleaning up:	**Sweep/shovel into suitable container for disposal. Avoid raising dust and ensure adequate ventilation.**

7. Handling and storage

7.1 Handling:	**Handle in a well ventilated area. Install local exhaust at 3D printers area is recommended when many printers are operated at once. Avoid contact with heated or molten product. Use personal protective equipment Avoid dust formation and electrostatic charge. Keep away from fire ignition sources.**
7.2 Storage:	**Protect from water, moisture and direct sunlight. Stored material in dry rooms and keep material in sealed packaging/container with desiccant when not in use. Store at ambient temperatures. Avoid all sources of ignition.**
7.3 Precautions:	**No special precautions required.**
7.4 Specific end use(s):	**Primarily used for 3D printing.**

8. Exposure controls / personal protection

8.1 Occupational exposure limits:	**Given suitable ventilation it can be that the threshold limits will not be reached.**
8.2 Exposure controls:	**Provide appropriate exhaust ventilation at places where dust is formed. Avoid electrostatic charge by use of grounding cables.**
8.3 Personal protective equipment	
8.3.1 Hand protection:	**Wear heat protection gloves, preferably cotton or leather, when handling hot molten product.**
8.3.2 Eye protection:	**Wear protective glasses, preferable with side-shields.**
8.3.3 Skin and body protection:	**Wear (protective) clothing to avoid direct exposure of skin to hot molten product when handling.**
8.3.4 Safety and hygiene measures:	**Avoid contact of hot molten material to skin. Avoid inhalation of dust, mists and vapors. Eye wash fountains and safety showers must be easily accessible. Handle in accordance with good industrial hygiene and safety practice. No eating or drinking during working.**
8.4 Environmental exposure controls:	**Prevent entry into drainage systems, or surface water.**

9. Physical and chemical properties

9.1 Form:	**Filament**
9.2 Colour:	**Natural**
9.3 Odour:	**From odorless to light sweet**
9.4 Melting point/range:	**-**
9.5 Auto-ignition temperature:	**Not specified**
9.6 Explosions limit:	**Not specified**
9.7 Density:	**1.2 g/cm3**
9.8 Solubility in water:	**Insoluble**

10. Stability and reactivity

10.1 Stability:	**Product is stable at recommended storage conditions.**
10.2 Conditions to avoid:	**Avoid extreme heat and all sources of ignition. Thermal decomposition.**
10.3 Substances to avoid:	**Strong oxidizing agents and reducing agents, strong acids and basis.**

10.4 Hazardous reactions:	**The product is chemically stable.**
10.4.1 Hazardous decomposition products:	**Carbon monoxide (CO), carbon dioxide (CO_2), nitrogen Oxides and hydrocarbons.**

11. Toxicological information

11.1 Information on toxicological effects:	**Harmless**

12. Ecological information

12.1 Information on eco-toxicity:	**Harmless**

13. Disposal considerations

13.1 Product:	**Generation of waste should be minimized, check possibility for recycling. Waste product can be incinerated or dumped together with domestic waste in compliance with local authority requirements.**
13.2 Packaging:	**Packaging material has to be emptied completely and disposed in accordance with the regulations. Packaging can be recycled if not contaminated.** ***WARNING - Plastic bags and desiccant bag can be dangerous. To avoid danger of suffocation, keep these bags away from babies, children and animals.***

14. Transport information

14. Transport hazard class	**Not Applicable**

15. Regulatory information

15.1 EU / National regulations:	**European Regulation on Plastic Food Contact Materials and with the requirements of LFGB.**

16. Other information

Company name:	**BigRep GmbH**
Additional data:	**In addition to the information given in this Material Safety Data Sheet (MSDS) we refer to the products specific Technical Data Sheet (TDS).**
Disclaimer:	**The information given in the Material Safety Data Sheet only applies to the described product in connection with its appropriate use.** **All information is based on the latest state of our knowledge. In particular, it describes our product under the aspect of possible hazards and pertaining safety measures. The information does not constitute any guarantee of specific product and/or quality properties.**

The information given in this Material Safety Data Sheet is not required according to article 31 and Annex II of Regulation (EC) No.1907/2006. It merely serves the purpose of providing sufficient information on a voluntary basis to ensure safe use of the compound/product. There is no obligation on the part of BigRep GmbH to revise this document. BigRep does not take responsibility for the data provided in this document.

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