



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

MATERIAL SAFETY DATA SHEET
BigRep PA12 CF

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

1.1 Trade name:	BigRep Filament PA12 CF
1.2 Chemical name:	Polyamide PA12-CF
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:	Not likely to be a risk in the solid form.
2.2 Classification of the substance or mixture:	This substance does not meet the criteria for classification according to Directive 67/548/EEC or Regulation (EC) 1272/2008 as amended.
2.3 Special advice on hazards:	Danger of burns when heated or molten material is handled

3. Composition / information on ingredients

3.1 Chemical nature:	Polyamide copolymer CAS No.: 7440-44-0 Weight %: 10-30% Exposure Limits: None
3.2 Additional information:	Not harmful

4. First-aid measures

4.1 If inhaled:	None expected to require first aid measures. If breathed in, remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical attention.
4.2 On skin contact:	None expected to require first aid measures. Wash thoroughly with soap and water. Get medical attention in the unlikely event that irritation persists.
4.3 On contact with eyes:	None expected to require first aid measures. Flush with running water for at least 15 minutes. If irritation persists get medical attention.

4.4 On ingestion:	Immediate first aid is not likely to be required. A physician or poison control center can be contacted for advice.
4.5. Important symptoms and effects	Burns resulted from contacting or handling heated or molten materials
4.6. Additional information	Provide general supportive measures and treat symptomatically

5. Firefighting measures

5.1 Suitable extinguishing media:	Use extinguishers suitable for surrounding fire
5.2 Specific hazards:	Gases hazardous to health may be formed in case of fire.
5.3 Further information:	Follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Use standard firefighting procedures and consider the hazards of other involved materials.

6. Accidental Release Measures

6.1 Personal precautions:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas.
6.2 Environmental precautions:	Avoid disposing into drainage/sewer system or directly into the aquatic environment.
6.3 Methods for cleaning up:	Sweep up and shovel into suitable containers. Clean up affected area.

7. Handling and storage

7.1 Handling:	Ensure good ventilation/exhaustion at the workplace. Wash thoroughly after handling.
7.2 Storage:	Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
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 Control parameters

Occupational exposure limits

UK. EH40 Workplace Exposure Limits (WELs)

Components	Type	Value	Form
Dust (CAS -)	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust

Biological limit values: No biological exposure limits noted for the ingredient(s)

Recommended monitoring procedures: Not available

Derived no-effect level (DNEL): Not available
Predicted no effect concentrations (PNECs): Not available

Provide appropriate exhaust ventilation at places where dust is formed. Avoid electrostatic charge by use of grounding cables.

8.2 Occupational exposure limits: Given suitable ventilation it can be that the threshold limits will not be reached.

8.3 Personal protective equipment

8.3.1 Hand protection: No special protection required.

8.3.2 Eye protection: No special protection required.

8.3.3 Skin and body protection: No special protection required.

8.3.4 Safety and hygiene measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period

8.4 Environmental exposure controls: Prevent entry into drainage systems, or surface water.

9. Physical and chemical properties

9.1 Form: Filament, Solid

9.2 Color: Black

9.3 Odor: Odorless

9.4 Melting point: 179 °C

9.5 Auto-ignition temperature: N/A

9.6 Explosions limit: Not specified

9.7 Relative density: 1.02

9.8 Solubility: Insoluble

10. Stability and reactivity

10.1 Stability: The substance is stable under normal storage and handling conditions.

10.2 Conditions to avoid: Incompatible materials.

10.3 Substances to avoid: Strong oxidizing agents.

10.4 Hazardous reactions: The product is chemically stable.

10.4.1 Hazardous decomposition products: Carbon oxides.

11. Toxicological information

11.1 Likely routes of exposure	Inhalation: Dust irritates the respiratory system, and may cause coughing and difficulties in breathing. Skin contact: Dust may irritate skin. Eye contact: Dust may irritate the eyes. Ingestion: May cause discomfort if swallowed.
11.2 Symptoms:	Dust may irritate throat and respiratory system and cause coughing. Direct contact with eyes may cause temporary irritation.
11.3 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 may experience eye tearing, redness, and discomfort. Respiratory sensitization: Not classified. Skin sensitization: Not a skin sensitiser. Germ cell mutagenicity: Not expected to be mutagenic. Carcinogenicity: Not classified. Reproductive toxicity: Not classified. Specific target organ toxicity - single exposure: No data available Specific target organ toxicity - repeated exposure: No data available 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.

12. Ecological information

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 Persistence and degradability:	No data available.
12.3 Bioaccumulative potential:	No data available.
12.4 Mobility in soil:	Not available.
12.5 Other adverse effects:	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.

13. Disposal considerations

13.1 Product:	Dispose of contents/container in accordance with local/regional/national/international regulations.
13.2 Packaging:	Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

14. Transport hazard class

ADR: Not regulated as dangerous goods.
RID: Not regulated as dangerous goods.
AND: Not regulated as dangerous goods.
IATA: Not regulated as dangerous goods.
IMDG: Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

15. Regulatory information

15.1 EU / National regulations:

Not listed

15.2 Chemical safety assessment:

No Chemical Safety Assessment has been carried out.

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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Dr. Sven Thate, MD

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