

SAFETY DATA SHEET

TPU FORCE (CARBON AND GLASS FIBER)

According to regulation (EC) 1907/2006
Date of compilation / revision: 16.04.2024
Version / revision n°: 1

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

- 1.1 Trade name: TPU FORCE
- 1.2 Chemical name: Thermoplastic polyurethane
- 1.3 Typical use of the material: Monofilament for FFF/FDM technology based 3D printing
- 1.4 Identification of the company: Tag Plasturgie
N°188 zone industrielle ouest
Mohammedia, Maroc
Tel: +212 (0)5 23 31 51 40
Email: contact@tag-plasturgie.com
- 1.5 Emergency telephone number: ORFILA +33 (0)1 45 42 59 59

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

- 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: Not classified as dangerous according to Directive N°1272/2008
- 2.3 Other hazards which do not result in classification: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher. Due to the presence of carbon fibers: May cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of the fibers.

3. Composition / information on ingredients

- 3.1 Chemical nature: Modified Thermoplastic polyurethane

3.2 CAS number:

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
TPU 55 D	Propriety		70%
Modifiers/additives	Not applicable		30%

- 3.3 Additional information: No harmful substances used.

4. First-aid measures

- 4.1 On skin contact: Wash with soap and water. Get medical attention if symptoms occur. In case of contact with molten polymer immediately cool the skin with cold water. Medical aid may be required to remove adhering material and for treatment of burns.
- 4.2 After inhalation: Move to fresh air. Treat symptomatically. Contact a doctor in case of discomfort.
- 4.3 On ingestion: No effects know. Rinse mouth with water and drink more water. Contact a doctor in case of discomfort.
- 4.4 On eyes contact: Rinse open eyes thoroughly with water. Get medical attention if symptoms persist. If molten material contacts the eye, immediately flush with plenty of water for at least 15 minutes.

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5. Firefighting measures

- 5.1 Suitable extinguishing media: Foam, water spray, dry extinguishing media, CO₂
- 5.2 Specific hazards: Carbon monoxide (CO), carbon dioxide (CO₂), and hydrocarbons during incomplete combustion. The substances mentioned can be released at highly elevated temperatures and in case of fire.
- 5.3 Special protective equipment: Full protective clothing and self-contained breathing apparatus.
- 5.4 Further information: Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures

- 6.1 Personal precautions: Use personal equipment/closing (see Section 8). Avoid eye contact and dust formation and remove all sources of ignition. Sweep up to prevent slipping hazard.
- 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 (Section 8). Avoid dust formation and electrostatic charge. Keep away from fire ignition sources.
- 7.2 Storage: Protect from water, moisture and direct sunlight. Store material in dry rooms and keep material in closed 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(se): 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 melt product.

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

9. Physical and chemical properties

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| 9.1 Form: | Filament |
| 9.2 Color: | Black |
| 9.3 Odor: | Almost odorless |
| 9.4 Melting point: | 172°C - 190°C |
| 9.5 Auto-ignition temperature: | Not self-igniting |
| 9.6 Explosions limit: | No data available |
| 9.7 Density: | 1.22 g/cm ³ |
| 9.8 Solubility in water: | Not determined |
| 9.9 Decomposition Temperature: | 227-279°C |

10. Stability and reactivity

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| 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 > 250°C |
| 10.3 Incompatible materials: | Strong oxidizing agents. |
| 10.4 Hazardous reactions: | The product is chemically stable. |

11. Toxicological information

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| 11.1 Information on toxicological effects: | Toxicological data has not been determined for this product. Information is based on similar products. |
| 11.1.1 Acute toxicity | |
| Inhalation: | No data available, but not expected. |
| Ingestion: | After ingestion stomach pain or nausea are possible. |
| Skin contact: | No data available, but not expected. |
| Eye contact: | No data available, but not expected. |
| 11.1.2 Irritation | |
| Skin: | Dust can cause irritation of eyes, respiratory organs and skin. |
| Eye: | Dust can cause irritation of eyes, respiratory organs and skin. |
| 11.1.3 Sensitization: | Not expected to be a skin sensitizer. |
| 11.1.4 Repeated dose toxicity: | Not expected to cause toxic effects. |
| 11.1.5 Carcinogenicity: | No data available, but not expected. |
| 11.1.6 Mutagenicity: | No data available, but not expected. |
| 11.1.7 Toxicity for reproduction: | No data available, but not expected. |
| 11.2 Other information: | Based on our state of knowledge and experience no injurious health effects are expected if product is properly handled for the designated use. |

12. Ecological information

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|-----------------------------------|---|
| 12.1 Information on eco-toxicity: | No ecological toxicity data has been generated for this |
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12.1.1 Ecological toxicity effects:

product. There are no test results available and information is based on similar products.

No negative ecological effects are known at the present state of knowledge.

12.2 Mobility in soil:

No data available

12.3 Persistence and degradability:

Product is biodegradable.

12.4 Bioaccumulation potential:

The product will not be readily bioavailable due to its consistency and insolubility in water.

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.

14. Transport information

14.1 International Air transport regulations (IATA):

Not classified as hazardous

14.2 International Maritime Organization (IMDG):

Not classified as hazardous

14.3 UN, IMO, ADR/RID, ICAO Code:

Not classified as hazardous

15. Regulatory information

15.1 EU regulations:

This product does not require a hazard warning label in accordance with EC Directives.

16. Other information

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. This safety data sheet describes our product in terms of safety requirements. Preceding data is not applicable as a warranty of product properties. It is the responsibility of the recipient to observe the existing legal regulations for use of this product. Disclaimer: TAG PLASTURGIE MAKES NO WARRANTY, EXPRESS OR IMPLIED, REGARDING THE INFORMATION CONTAINED HEREIN OR ITS PRODUCTS, INCLUDING BUT NOT LIMITED TO ANY WARRANTY AS TO ACCURACY OR COMPLETENESS OF INFORMATION, OR ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.