# PRELIMINARY TECHNICAL DATA SHEET

## Tarfuse® PA FR

***3D Filament***

Version No.: 1.0
Date: 11. 2022

## General Information

| | |
|---|---|
| **CHARACTERISTICS** | Tarfuse® PA FR it is a non-flammable filament, class V0 / 1,6 mm according to UL94, does not contain halogen derivatives, red phosphorus and asbestos. |
| **APPLICATIONS** | Tarfuse® filament for Fused Filament Fabrication. |
| **DELIVERY FORM** | Tarfuse ®: diameter 1.75±0,05mm; |
| **PACKAGING** | Available packing : 1kg |
| **COLOUR** | Natural, basic colours on request. |
| **STORAGE** | Tarfuse® PA FR filament must be stored in closed original packaging of the producer in dry rooms. Protect the packaging's against damage and against the influence of weather conditions. |
| **NOTICE** | The data contained in this publication are based on our current knowledge and experience. In view of the many factors with may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product.<br>It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. |



Grupa Azoty S.A.
ul. E. Kwiatkowskiego 8,
33-101 Tarnów
Poland

Tel.: +48 14 637 35 81
Faks: +48 14 637 21 51

**www.grupaazoty.com**

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**RECOMMENDED PRINT PROCESSING PARAMETERS**

Nozzle temperature: 290 - 300°C
Build chamber temperature: 60-90°C
Bed temperature: 80 - 90°C
Bed material: glass, polycarbonate (PC) mat, polyamide (PA) mat + PVA glue type
Nozzle diameter: ≥ 0.6 mm
Print speed: 30 - 60 mm/s

| Physical Properties | Unit | Value | ISO standard | Test conditions |
|---|---|---|---|---|
| | | | | |
| Melting temperature; DSC | °C | 220 | 11357-1-3 | 10°C/min. |
| Glass transition temperature; DSC | °C | 55-57 | 11357-1-3 | 10°C/min. |
| Crystalization temperature; DSC | °C | 160-170 | 11357-1-3 | 10°C/min. |
| Density | g/cm$^3$ | - | 1183 | - |
| Melt volume-flow rate MVR | cm$^3$/10min | 25 | 1133 | 220°C/10 kg |

| Mechanical Properties | Unit | XY | XZ | ZX | ISO standard | Test conditions |
|---|---|---|---|---|---|---|
| **Print direction** | | Flat | On its edge | Upright | | |
| Tensile strength | MPa | 34,6 | 47 | 19 | 527-1,-2 | 50mm/min |
| Elongation at break | % | 0,8 | 0,8 | 1,5 | 527-1,-2 | 50mm/min |
| Tensile E-modulus | MPa | 4560 | 6270 | 1900 | 527-1,-2 | 1mm/min |
| Flexural strength | MPa | - | - | - | 178 | 2mm/min |
| Flexural modulus | MPa | - | - | - | 178 | 2mm/min |
| Charpy impact strength | kJ/m$^2$ | - | - | - | 179-1 | 1eU |
| Charpy notched impact strength | kJ/m$^2$ | - | - | - | 179-1 | 1eA |
| Vicat softening point | °C | - | - | - | 306 | 50N |
| Heat deflection temperature | °C | - | - | - | 75-1,-2 | 1.8 MPa |
| Flammability vertical* | - | V0 | V0 | V0 | UL94 | 1,6 mm |

*Tests were performed at 23°C, unless otherwise specified.*



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