

## TECHNICAL DATA SHEET

### Tarfuse® PA

Filaments 3D

Version No.: 2.2  
Date: 09.2020

## General Information

#### CHARACTERISTICS

Tarfuse® PA is made of high quality polyamide 6, characterized by high mechanical strength, flexibility due to excellent layer-to-layer adhesion. Dedicated to printing functional and technical parts.

Tarfuse® PA is designed especially for 3D printing excellent mechanical properties and smooth appearance printing details make it ideal for demanding applications.

#### APPLICATIONS

Tarfuse® filament for Fused Filament Fabrication.

#### DELIVERY FORM

Tarfuse®: diameter 1,75±0,05mm; 2,85±0,1mm

#### PACKAGING

Packing available: 1kg +(297 g spool), 2kg +(602 g spool)

#### COLOUR

Natural, black, other colours for request

#### STORAGE

Tarfuse® PA 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.

#### DRYING RECOMMENDATIONS

To ensure good print quality, it is recommended to dry in a hot air dryer for 4 to 16 hours in 80°C

#### NOTICE

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that 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. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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#### RECOMENDED PRINT PROCESSING PARAMETERS

Nozzle temperature 270 - 290 °C  
Build chamber temperature: 23 - 90 °C  
Bed temperature: 30 - 120 °C  
Bed material: PC/glass + PVA glue stick  
Nozzle diameter  $\geq 0,4$  mm  
Print speed: 30 - 60 mm / s

| Physical Properties               | Unit                   | Data    | 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.       |
| Crystallization temperature; DSC  | °C                     | 160-170 | 11357-1-3    | 10°C/min.       |
| Density                           | g/cm <sup>3</sup>      | 1,13    | 1183         | -               |
| Moisture absorption               | %                      | 2,5     | 62           | 23°C/50%RH      |
| Water absorption                  | %                      | 9,5     | 62           | 23°C/sat.       |
| Melt volume-flow rate MVR         | cm <sup>3</sup> /10min | 25      | 1133         | 275°C/5 kg      |

| Mechanical Properties           | JM                | XY   | XZ          | ZX      | ISO standard | Test conditions |
|---------------------------------|-------------------|------|-------------|---------|--------------|-----------------|
| Print direction                 |                   | Flat | On its edge | Upright |              |                 |
| Tensile strength                | MPa               | 72   | 70          | 24      | 527-1,-2     | 50mm/min        |
| Elongation at break             | %                 | 4,1  | 4           | 3       | 527-1,-2     | 50mm/min        |
| Tensile E-modulus               | MPa               | 2400 | 2500        | 2400    | 527-1,-2     | 1mm/min         |
| Flexural strength               | MPa               | 73   | 72          | 38      | 178          | 2mm/min         |
| Flexural modulus                | MPa               | 1800 | 1900        | 2200    | 178          | 2mm/min         |
| Charpy impact strength          | kJ/m <sup>2</sup> | 75   | 100         | 5,4     | 179-1        | 1eU             |
| Charpy impact strength (-30 °C) | kJ/m <sup>2</sup> | 4,5  | -           | -       | 179-1        | 1eU             |
| Charpy notched impact strength  | kJ/m <sup>2</sup> | 72   | 70          | 24      | 179-1        | 1eA             |

Filling: 100%

Dry condition - moisture content max. 0.2%

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

#### Print processing parameters:

Nozzle temperature: 280 °C

Build chamber temperature: 70 °C

Bed temperature: 80 °C

Bed material: PI + Dimafix

Nozzle diameter  $\geq 0,6$  mm

Print speed: slowly