

TECHNICAL DATA SHEET

Tarfuse® PA ESD

3D Filament

Version No.: 4.0
Date: March 2022

General Information

CHARACTERISTICS	Tarfuse® PA ESD is made of high quality polyamide 6 filament filled with carbon fiber for printing parts with good mechanical and anti-static properties. Print speed comparable to unreinforced material due to relatively low filling ratio. The details are characterized by low susceptibility to warping and low shrinkage.
APPLICATIONS	Tarfuse® filament for Fused Filament Fabrication.
DELIVERY FORM	Tarfuse®: diameter 1.75±0.05mm; 2.85±0.1mm
PACKAGING	Available packing: 1kg (+297 g spool), 2kg (+602 g spool)
COLOUR	Natural (graphite) and black
STORAGE	Tarfuse® PA ESD 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	<p>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.</p> <p>It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.</p>

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RECOMENDED PRINT PROCESSING PARAMETERS

Nozzle temperature: 270 - 300 °C
Build chamber temperature: 20 - 70 °C
Bed temperature: 30 - 110 °C
Bed material: polycarbonate (PC) mat, polyamide (PA) mat + PVA glue type
Nozzle diameter: ≥ 0.4 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.
Crystallization temperature; DSC	°C	160-180	11357-1-3	10°C/min.
Density	g/cm ³	1,18	1183	-
Moisture absorption	%	2	62	23°C/50%RH
Water absorption	%	9	62	23°C/sat.
Melt volume-flow rate MVR	cm ³ /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	55	63	20	527-1,-2	5mm/min
Elongation at break	%	5,7	3,2	1	527-1,-2	5mm/min
Tensile E-modulus	MPa	3500	4800	2600	527-1,-2	1mm/min
Flexural strength	MPa	68	120	-	178	2mm/min
Flexural modulus	MPa	3000	4700	-	178	2mm/min
Charpy impact strength	kJ/m ²	35	-	-	179-1	1eU
Charpy notched impact strength	kJ/m ²	4.2	-	-	179-1	1eA
Vicat softening point	°C	98			306	50N
Heat deflection temperature	°C	189			75-1,-2	1.8 MPa
Surface resistivity	Ω	10xE9	-	-	IEC 60093	-
Volume resistivity	Ωxcm	10xE9	-	-	IEC 60093	-

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 50 °C
Nozzle diameter 0.4 mm
Layer 0.2 mm
Filling 100%; 45°/45°