PRELIMINARY TECHNICAL DATA SHEET

Tarfuse® POM

3D Filament

Version No.: 1.1
Date: April 2021

General Information

CHARACTERISTICS	Tarfuse® POM is made of polyacetal copolymer, characterized by high mechanical strength, excellent tribological parameters.
APPLICATIONS	**Tarfuse®** filament for Fused Filament Fabrication. Tarfuse® POM is designed for printing functional technical parts, due to the material features dedicated to printing parts up to 100mm.

DELIVERY FORM	Tarfuse®: diameter 1.75±0.05mm
PACKAGING	Available packing: 1kg (+250 g spool)
COLOUR	Natural, black
STORAGE	Tarfuse® POM 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 6 hours in 140°C.
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. 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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RECOMMENDED PRINT PROCESSING PARAMETERS

Nozzle temperature: 210 - 240°C
Build chamber temperature: 70 - 140°C
Bed temperature: 100 - 130°C
Bed material: cellulose (paper, wood, cork) mat + PVA glue type
Nozzle diameter: ≥ 0.4 mm
Print speed: 10-30 mm/s (slowly)

Physical Properties	Unit	Value	ISO standard	Test conditions
Melting temperature; DSC	°C	165-170°C	11357-1-3	10°C/min.
Glass transition temperature; DSC	°C	-50°C	11357-1-3	10°C/min.
Crystalization temperature; DSC	°C	140	11357-1-3	10°C/min.
Density	g/cm^3	1,42	1183	-
Humidity absorption	%	0,2	62	23°C/50%RH
Water absorption	%	0,8	62	23°C/sat.
Melt volume-flow rate MVR	cm^3/10min	2,5	1133	275°C/5 kg

Mechanical Properties	Unit	XY	XZ	ZX	ISO standard	Test conditions
Print direction		Flat	On its edge	Upright		
Tensile strength	MPa	50	To be tested	To be tested	527-1,-2	50mm/min
Elongation at break	%	11	-	-	527-1,-2	50mm/min
Tensile E-modulus	MPa	1870	-	-	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

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

Print processing parameters:

Nozzle temperature	*230°C*
Build chamber temperature	*70°C*
Bed temperature	*130°C*
Nozzle diameter	*0.4 mm*
Layer	*0.2 mm*
Filling	*100%; 45°/45°*

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