

Technical Data Sheet

Ultrafuse TPS 90A

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Version No.: 1.1

General information

Components

Styrene-Ethylene-Butadiene-Styrene (SEBS) based filament for Fused Filament Fabrication.

Product Description

Ultrafuse® TPS 90A is an elastomer based on the raw material SEBS. The combination of durable and flexible building blocks leads to a very versatile material.

Compared to other flexible 3D printing materials it shows more rubber-like soft touch haptics and better non-slip properties. Furthermore, the material shows a reduced moisture uptake, which allows for printing without pre-drying.

Parts printed with Ultrafuse® TPS 90A show almost no visible layers or warpage, which makes it an excellent material choice for end-use parts.

Producing multi-material parts is possible by printing it together with PP.

Delivery form and warehousing

Ultrafuse® TPS 90A filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

Product safety

Please process materials in a well ventilated room, or use professional air extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.

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.

Recommended 3D-Print processing parameters

Nozzle Temperature	260 – 280 °C / 500 – 536 °F
Build Chamber Temperature	-
Bed Temperature	70 – 90 °C / 158 – 194 °F
Bed Material	PEI, PI or glue
Nozzle Diameter	≥ 0.4 mm
Print Speed	10 - 30 mm/s

Drying Recommendations

Drying recommendations to ensure printability	Ultrafuse® TPS 90A is in a printable condition, drying is not necessary
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General Properties

Standard

Printed Part Density	1044 kg/m ³ / 65.17 lb/ft ³	ISO 1183-1
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Thermal Properties

Standard

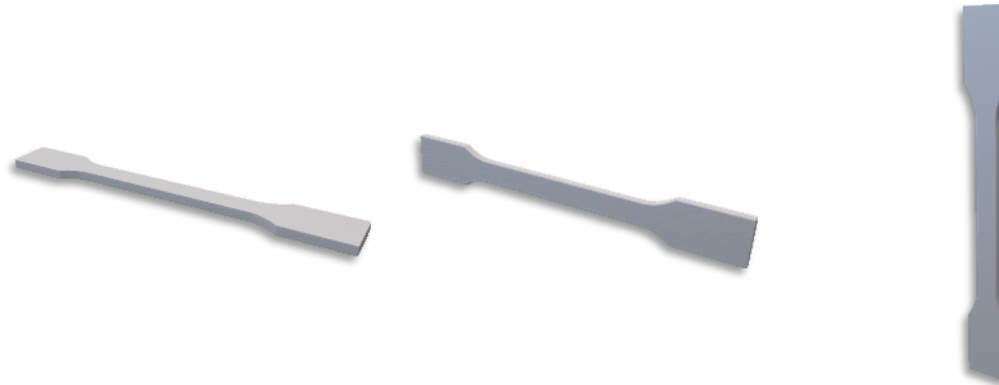
Glass Transition Temperature	-59 °C / -74.2 °F	ISO 11357-2
Melting Temperature	242 – 249 °C / 467.6 – 480.2 °F	ISO 11357-3
Melt Volume Rate	19.9 cm ³ /10 min / 1.2 in ³ /10 min (260 °C, 5 kg)	ISO 1133

General Mechanical Properties

Standard

Compression Set at 23°C, 72 h	75 %	ISO 815-1
Compression Set at 70°C, 24 h	93 %	ISO 815-1
Abrasion Resistance	111 mm ³ / 6.7 E-3 in ³	ISO 4649
Shore A Hardness (3s)	89	ISO 7619-1
Shore D Hardness (15s)	29	ISO 7619-1

Mechanical Properties



Print direction	Standard	XY Flat	XZ On its edge	ZX Upright
Young's Modulus	ISO 527	54 MPa / 7.8 ksi	-	37 MPa / 5.4 ksi
Stress at 50% Elongation	ISO 527	4.8 MPa / 0.7 ksi	-	-
Stress at 100% Elongation	ISO 527	5.4 MPa / 0.8 ksi	-	-
Stress at 200% Elongation	ISO 527	6.2 MPa / 0.9 ksi	-	-
Stress at Break, TPE	ISO 527	7 MPa / 1.0 ksi	-	2 MPa / 0.3 ksi
Strain at Break, TPE	ISO 527	280 %	-	9 %
Impact Strength Charpy (notched) @ -30°C	ISO 179-2	No break	No Break	14.1 kJ/m ²
Impact Strength Charpy (unnotched) @ -30°C	ISO 179-2	No break	No break	No break
Tensile Notched Impact Strength	ISO 8256-1	92 kJ/m ²	94.4 kJ/m ²	35.8 kJ/m ²
Tear Strength	ISO 34-1	10 kN/m	5 kN/m	4 kN/m