

Technical Data Sheet

Ultrafuse TPU 80A LF

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Version No.: 2.3

General information

Components

Very flexible thermoplastic polyurethane (TPU) based on BASF raw materials designed for Fused Filament Fabrication.

Product Description

Ultrafuse TPU 80A LF is one of the most flexible filaments on the market. This filament can be printed on many open platforms and works for both Bowden and direct drive extruders. This is a perfect filament for applications that require toughness and flexibility to the max. No other filament on the market can match the printability of this extremely flexible filament.

Delivery form and warehousing

Ultrafuse TPU 80A LF 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

Recommended: Process materials in a well ventilated room, or use professional 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	230 – 240 °C / 446 – 464 °F
Build Chamber Temperature	-
Bed Temperature	40 – 60 °C / 104 - 140 °F
Bed Material	Glass
Nozzle Diameter	≥ 0.4 mm
Print Speed	10 – 25 mm/s

Drying Recommendations

Drying recommendations to ensure printability	Please dry the filament at 70 °C in a hot air dryer for at least 8 hours.
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Please note: To ensure constant material properties the material should always be kept dry.

General Properties

Standard

Printed Part Density	1104 kg/m ³ / 68.9 lb/ft ³	ISO 1183-1
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Thermal Properties

Standard

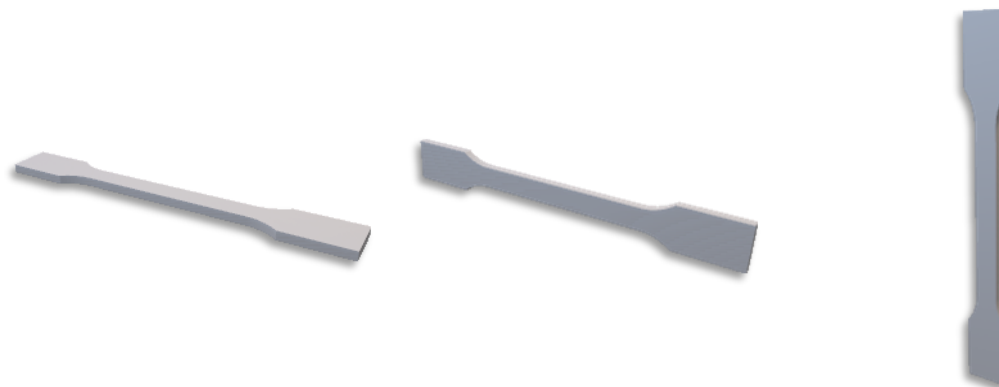
Glass Transition Temperature	-44 °C / -47 °F	ISO 11357-2
Melt Volume Rate	82.5 cm ³ /10 min / 5.0 in ³ /10 min (210 °C, 10 kg)	ISO 1133

General Mechanical Properties

Standard

Compression Set at 23 °C, 72 h	28%	ISO 815
Compression Set at 70 °C, 24 h	52%	ISO 1133
Abrasion Resistance	56 mm ³ / 3.4 E-3 in ³	ISO 4649
Shore A Hardness (3 s)	89	ISO 7619-1
Shore D Hardness (15 s)	35	ISO 7619-1

Mechanical Properties | Conditioned specimens



Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Stress at 50% Strain	ISO 527	5.8 MPa / 0.8 ksi	-	4.6 MPa / 0.7 ksi
Stress at 100% Elongation	ISO 527	6.9 MPa / 1.0 ksi	-	5.4 MPa / 0.8 ksi
Stress at 200% Elongation	ISO 527	11.5 MPa / 1.7 ksi	-	-
Stress at Break TPE	ISO 527	35.0 MPa / 5.1 ksi	-	7.0 MPa / 1.0 ksi
Strain at Break TPE	ISO 527	610%	-	230%
Impact Strength Charpy (notched)	ISO 179-2	No break	No break	No break
Impact Strength Charpy (notched) @ -30 °C	ISO 179-2	No break	No break	No break
Impact Strength Charpy (unnotched) @ -30 °C	ISO 179-2	No break	No break	No break
Impact Strength Izod (notched)	ISO 180	No break	No break	No break
Tensile Notched Impact Strength	ISO 8256/1	No break	No break	No break
Tear Strength	ISO 34-1	55 kN/m	-	42 kN/m

Electrical Properties | Conditioned specimens

Volume Resistivity	IEC 62631-3-1	2.3E+12 Ωcm	1.6E+12 Ωcm
Dielectric Strength (orthogonal)	IEC 60243-1	21 kV/mm	20 kV/mm