Technical Data Sheet

Ultrafuse TPU 95A

Date / Revised: 25.01.2021

Version No.: 1.0

General information

Components

BASF ether based thermoplastic polyurethane (TPU) based filament for Fused Filament Fabrication.

Product Description

Ultrafuse® TPU 95A comes with a well-balanced profile of flexibility and durability. On top of that, it allows for easier and faster printing then softer TPU grades. Parts printed with Ultrafuse® TPU 95A show a high elongation, good impact resistance, excellent layer adhesion and a good resistance to oils and common industrially used chemicals.
Due to its good printing behavior, Ultrafuse® TPU 95A is a good choice for starting printing flexible materials on both direct drive and bowden style printers.

Delivery form and warehousing

Ultrafuse® TPU 95A 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	210 – 230 °C / 410 – 446 °F
Build Chamber Temperature	-
Bed Temperature	40 °C / 104 °F
Bed Material	Glass
Nozzle Diameter	≥ 0.4 mm
Print Speed	15 – 40 mm/s

Drying Recommendations	
Drying recommendations to ensure printability	70 °C in a hot air dryer or vacuum oven for at least 5 hours

Please note: To ensure constant material properties the material should always be kept dry.

General Properties		Standard
Printed Part Density	1139 kg/m^3 / 71.1 lb/ft^3	ISO 1183-1

Thermal Properties		Standard
Glass Transition Temperature	-25 °C / -13 °F	ISO 11357-2
Melting Temperature	144 °C / 291.2 °F	ISO 11357-3
Melt Volume Rate	30.7 cm^3/10 min / 1.87 in^3/10 min (210 °C, 5 kg)	ISO 1133

General Mechanical Properties		Standard
Compression Set at 23°C, 72 h	38 %	ISO 815
Compression Set at 70°C, 24 h	90 %	ISO 815
Abrasion Resistance	64 mm3 / 0.004 in3	ISO 4649
Shore A Hardness (3 s)	92	ISO 7619-1
Shore D Hardness (15 s)	45	ISO 7619-1

Mechanical Properties

Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Stress at 50 % Elongation	ISO 527	8.3 MPa / 1.20 ksi	-	7.9 MPa / 1.15 ksi
Stress at 100% Elongation	ISO 527	10.5 Mpa / 1.52 ksi	-	9.9 Mpa / 1.44 ksi
Stress at 300% Elongation	ISO 527	20.3 Mpa / 2.94 ksi	-	-
Stress at Break, TPE	ISO 527	44.2 MPa / 6.41 ksi	-	12.2 MPa / 1.77 ksi
Elongation at Break, TPE	ISO 527	661 %	-	192 %
Young's Modulus	ISO 527	48.4 MPa / 7.0 ksi	-	46.7 MPa / 6.8 ksi
Impact Strength Charpy (notched)	ISO 179-2	No break	No break	16.8 kJ/m^2
Impact Strength Charpy (notched) @ -30°C	ISO 179-2	128 kJ/m^2	120 kJ/m^2	14.9 kJ/m^2
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,A	90 kN/m	8 kN/m	14 kN/m