BASF 3D Ultrafuse® TPU 95A Fused Fillament

Categories: [Polymer](#); [3D Printing/Additive Manufacturing Polymer](#); [Thermoplastic](#); [Polyurethane, TP](#)

Material Notes:

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.

Information provided by BASF

Vendors:

No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Density	1.139 g/cc	0.04115 lb/in³	Printed Part; ISO 1183-1
Melt Flow	34.9673 g/10 min @Load 5.00 kg, Temperature 210 °C	34.9673 g/10 min @Load 11.0 lb, Temperature 410 °F	ISO 1133
Storage Temperature	15.0 - 25.0 °C	59.0 - 77.0 °F	

Mechanical Properties	Metric	English	Comments
Hardness, Shore A	92 @Time 3.00 sec	92 @Time 0.000833 hour	ISO 7619-1
Hardness, Shore D	45 @Time 15.0 sec	45 @Time 0.00417 hour	ISO 7619-1
Tensile Strength at Break	12.2 MPa	1770 psi	ZX: Upright; ISO 527
	44.2 MPa	6410 psi	XY: Flat; ISO 527
Tensile Stress 📊	7.90 MPa @Strain 50 %	1150 psi @Strain 50 %	ZX: Upright; ISO 527
	8.30 MPa @Strain 50 %	1200 psi @Strain 50 %	XY: Flat; ISO 527
	9.90 MPa @Strain 100 %	1440 psi @Strain 100 %	ZX: Upright; ISO 527
	10.5 MPa @Strain 100 %	1520 psi @Strain 100 %	XY: Flat; ISO 527
	20.3 MPa @Strain 300 %	2940 psi @Strain 300 %	XY: Flat; ISO 527
Elongation at Break	192 %	192 %	ZX: Upright; ISO 527
	661 %	661 %	XY: Flat; ISO 527
Modulus of Elasticity	46.7 GPa	6770 ksi	Young's, ZX: Upright; ISO 527
	48.4 GPa	7020 ksi	Young's, XY: Flat; ISO 527
Izod Impact, Notched (ISO)	NB	NB	XY: Flat; ISO 180
	NB	NB	XZ: On its edge; ISO 180
	NB	NB	ZX: Upright; ISO 180
Charpy Impact Unnotched 📊	NB @Time -108000 sec	NB @Time -30.0 hour	XY: Flat; ISO 179-2
	NB @Time -108000 sec	NB @Time -30.0 hour	XZ: On its edge; ISO 179-2
	NB @Time -108000 sec	NB @Time -30.0 hour	ZX: Upright; ISO 179-2
Charpy Impact, Notched	1.68 J/cm²	7.99 ft-lb/in²	ZX: Upright; ISO 179-2
	NB	NB	XY: Flat; ISO 179-2
	NB	NB	XZ: On its edge; ISO 179-2
📊	1.49 J/cm² @Time -108000 sec	7.09 ft-lb/in² @Time -30.0 hour	ZX: Upright; ISO 179-2
	12.0 J/cm² @Time -108000 sec	57.1 ft-lb/in² @Time -30.0 hour	XZ: On its edge; ISO 179-2
	12.8 J/cm² @Time -108000 sec	60.9 ft-lb/in² @Time -30.0 hour	XY: Flat; ISO 179-2
Tensile Impact Strength	NB	NB	XY: Flat; ISO 8256-1
	NB	NB	XZ: On its edge; ISO 8256-1
	NB	NB	ZX: Upright; ISO 8256-1
Tear Strength	8.00 kN/m	45.6 pli	XZ: On its edge; ISO 34-1
	14.0 kN/m	79.9 pli	ZX: Upright; ISO 34-1

	90.0 kN/m	514 pli	XY: Flat; ISO 34-1
Abrasion	64	64	mm3; ISO 4649
Compression Set 📊	38 % @Temperature 23.0 °C, Time 259000 sec	38 % @Temperature 73.4 °F, Time 72.0 hour	ISO 815-1
	90 % @Temperature 70.0 °C, Time 86400 sec	90 % @Temperature 158 °F, Time 24.0 hour	ISO 815-1

Thermal Properties	Metric	English	Comments
Melting Point	144 °C	291 °F	ISO 11357-3
Glass Transition Temp, Tg	-25.0 °C	-13.0 °F	ISO 11357-2

Processing Properties	Metric	English	Comments
Processing Temperature	40.0 °C	104 °F	Bed, Bed Material: Glass
Nozzle Temperature	210 - 230 °C	410 - 446 °F	
Drying Temperature	70.0 °C	158 °F	in a hot air dryer or vacuum oven
Dry Time	5.00 hour	5.00 hour	
Shelf Life	12.0 Month	12.0 Month	

Descriptive Properties

Nozzle Diameter	=0.4 mm
Print speed	15-40 mm/s