

Forward AM Ultrasint TPU01

Multi Jet Fusion | TPU | powder

Compiled by FabDigit from manufacturer technical data. Values below belong to this named product; unreported properties are omitted.

Manufacturer: Forward AM

Source revision: Version 3.2, revised 08/2021

Recorded system family: HP Jet Fusion 5600, 5200 and 5000 series

As-printed colour: Gray

Test values are typical reported results, not guaranteed design allowables or finished-part certification. Review the complete source for specimen preparation, orientation and conditioning.

Physical

PROPERTY	VALUE	TEST / CONDITION
Density	1.1 g/cm3	per DIN EN ISO 1183-1; Printed-part density
Glass Transition (Tg)	-48 deg C	per ISO 11357; 20 K/min
Melting Temperature (Tm)	120 deg C	per ISO 11357; Melting range 120-150 deg C at 20 K/min

Mechanical

PROPERTY	VALUE	TEST / CONDITION
Tensile Strength (Ultimate)	9 MPa	per DIN 53504, S2; X 9 / Z 7
Elastic (Young's) Modulus	0.085 GPa	per ISO 527-2, 1A; X 0.085 / Z 0.085 GPa
Elongation at Break	280 %	per DIN 53504, S2; X 280 / Z 150
Flexural Modulus	0.075 GPa	per DIN EN ISO 178; X 0.075 / Z 0.075 GPa

Mechanical - continued

PROPERTY	VALUE	TEST / CONDITION
Hardness, Shore A	88 Shore A	per DIN ISO 7619-1; X and Z range 88-90
Tear Strength	21 kN/m	per DIN ISO 34-1, A; Propagation tear: X 21 / Z 18
Compression Set (22 h, 70 deg C)	23 %	per DIN ISO 815-1; 23 deg C, 72 h: X 23 / Z 24

Manufacturability

PROPERTY	VALUE	TEST / CONDITION
Powder Particle Size (D50)	70 um	per ISO 13320; D50 range 70-90 um
Powder Bulk Density	0.5 g/cm3	per DIN EN ISO 60

Selection and finishing

An HP Multi Jet Fusion TPU for detailed elastomeric parts that need shock absorption, repeat flexing and a published MJF process route.

Design: Use a prototype to tune wall thickness, lattice and compression response. Keep X/Z tensile and tear-direction differences in the design review for a stressed flexible feature.

Finishing: Confirm the printed colour for the selected MJF system; raw powder colour alone does not establish the finished appearance. Qualify dye or surface treatments for friction, rebound and repeated flexing.

Source and document scope

Forward AM manufacturer source reference - Version 3.2, revised 08/2021

https://forward-am.com/wp-content/uploads/2021/04/BASF_3DPS_TDS_Ultrasint-TPU-01.pdf

FabDigit product page: <https://www.fabdigit.com/materials/polymer-tpu/forward-am-ultrasint-tpu01/>

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