



Technical Data Sheet

Ultrasint™ TPU01 for HP Jet Fusion Printers

Components

Thermoplastic polyurethane powder for HP Jet Fusion Printers

Product Description

Ultrasint™ TPU01 is a multi-purpose material for application in Multi Jet Fusion. Parts produced with this material offer a balanced property profile with good flexibility, shock absorption and the possibility to print very fine structures with a high level of detail. In addition, the material is easy to print, and has good UV and hydrolysis resistance. Ultrasint™ TPU01 is only processable in HP Multi Jet Fusion printers.

Typical applications are:

- Sports & Leisure
- Footwear
- Transportation Industry
- Jigs & Fixtures

General Properties	Test Method	Typical Values
Bulk Density / g/cm ³	DIN EN ISO 60	0.5
Printed Part Density / g/m ³	DIN EN ISO 1183-1	1.1
Mean particle size d50 / μm	ISO 13320	70-90
Glass transition Temperature / °C	ISO 11357 (20 K/min)	- 48
Melting Temperature / °C	ISO 11357 (20 K/min)	120-150

Thermal Properties	Test Method	Typical Values ¹ X-Direction	Typical Values ¹ Z-Direction
UL Flammability	UL 94	HB (1.6-4.2 mm)	HB (1.6-4.2 mm)
Vicat/A (10 N) / °C	DIN EN ISO 306	84	96

Mechanical Properties	Test Method	Typical Values ¹ X-Direction	Typical Values ¹ Z-Direction
Hardness Shore A	DIN ISO 7619-1	88	88
Tensile Strength / MPa	DIN 53504, S2	9	7
Tensile Elongation at break / %	DIN 53504, S2	220	120
Tensile Modulus / MPa	ISO 527-2, 1A	75	85
Flexural Modulus / MPa	DIN EN ISO 178	75	75
Tear resistance (propagation, Trouser) / kN/m	DIN ISO 34-1, A	20	16
Tear resistance (initiation, Graves) / kN/m	DIN ISO 34-1, B	36	32
Compression Set B (23°C, 72h) / %	DIN ISO 815-1	20	20
Rebound resilience / %	DIN 53512	63	63
Abrasion resistance / mm ³	DIN ISO 4649	140	100
Charpy Impact Strength (notched, 23°C) / kJ/m ²	DIN EN ISO 179-1	Partial break	No break
Charpy Impact Strength (notched, -10°C) / kJ/m ²	DIN EN ISO 179-1	21	29
Fatigue behavior (Rossflex, 100k cycles, 23°C)	ASTM D1052	No cut growth	
Fatigue behavior (Rossflex, 100k cycles, -10°C)	ASTM D1052	No cut growth	