

# Technical Data Sheet

# Ultrasint TPU® 88A

Technical Data Sheet for Ultrasint TPU® 88A

Version No.: 2.2, revised 08/2021

## General information

### Components

**Thermoplastic polyurethane powder for Laser Sintering**

### Product Description

Ultrasint ® TPU 88A is a multi-purpose material for application in Laser Sintering. 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.

Typical applications are:

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

### Delivery Form & Warehousing

Ultrasint TPU® 88A should be stored at 15 – 35°C in its originally sealed package in a clean and dry environment.

### Product safety

Mandatory and recommended industrial hygiene procedures and the relevant industrial safety precautions must be followed whenever this product is being handled and processed. Product is sensitive to humid environment conditions. For additional information please consult the corresponding material safety data sheets.

### For your Information

Ultrasint TPU® 88A comes in white color. Chemical properties (e.g. resistance against particular substances) and tolerance for solvents are available upon request. Generally, these properties correspond to publicly available data on polyurethanes.



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

Thermal Properties	Test Method	Typical Values1 X-Direction	Typical Values1 Z-Direction
Vicat/A (10 N) / °C	DIN EN ISO 306	98	98

Skin Contact	Test Method	Typical Value
Cytotoxicity	ISO 10993-5 (2009)	Pass
In vitro Skin Irritation Testing	OECD Guideline No. 439	Pass
In vivo Sensitization Testing	ISO 10993-10 (2013), OECD Guideline No. 429	Pass

Mechanical Properties	Test Method	Typical Values1 X-Direction	Typical Values1 Z-Direction
Hardness Shore A	DIN ISO 7619-1	88-90	88-90
Tensile Strength / MPa	DIN 53504, S2	8	7
Tensile Elongation at break / %	DIN 53504, S2	270	130
Tensile Modulus / MPa	ISO 527-2, 1A	75	75
Flexural Modulus / MPa	DIN EN ISO 178	70	70
Tear Resistance (propagation, Trouser) / kN/m	DIN ISO 34-1, A	26	26
Tear Resistance (initiation, Graves) / kN/m	DIN ISO 34-1, B	43	37
Compression Set B (23°C, 72h) / %	DIN ISO 815-1	24	24
Rebound Resilience / %	DIN 53512	63	63
Abrasion Resistance / mm <sup>3</sup>	DIN ISO 4649	86	95
Charpy Impact Strength (notched, 23°C) / kJ/m <sup>2</sup>	DIN EN ISO 179-1	No break	No break
Charpy Impact Strength (notched, -10°C) / kJ/m <sup>2</sup>	DIN EN ISO 179-1	60	58
Fatigue Behavior (Rossflex, 100k cycles, 23°C)	ASTM D1052	No cut growth	
Fatigue Behavior (Rossflex, 100k cycles, -10°C)	ASTM D1052	No cut growth	

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