PROTOLABS

MULTI JET FUSION

ULTRASINT™ TPU01-88A BLACK

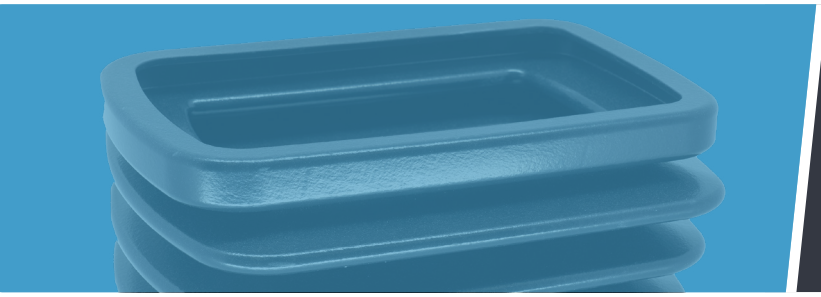
Supplier Data Sheet: BASF UltrasintTM TPU01

PRODUCT DESCRIPTION

This thermoplastic polyurethane (TPU) combines rubber-like elasticity and elongation with good abrasion and impact resistance. It has high chemical resistance to oil and grease, making it an ideal candidate for automotive applications. Furthermore, it possesses high UV resistance. This material has been specifically developed to optimise lattice structure designs and shows high accuracy and detail resolution. It can be leveraged to produce both prototypes and functional parts.

APPLICATIONS

This material can be used in a wide variety of industries, from sporting products (e.g. shoe soles) to orthopaedic models, from protective cases to vibration dampening products, as well as for seals, gaskets, grips, hoses, or any other application where excellent resistance under dynamic loading is required.



KEY PRODUCT BENEFITS

- Flexibility
- Tear and abrasion resistance
- High durability

PROPERTIES

PROPERTY	TEST METHOD	VALUE (STANDARD)	VALUE (VAPOUR SMOOTH)
Colour	-	Black	Black
Shore-A hardness*	DIN ISO 7619-1	88A	88A
Sintered density*	DIN EN ISO 1183-1	1.1g/cm³	1.1g/cm³
Surface Roughness**	DIN EN ISO 4287	Ra = 20-30 µm; Rz = 120-160 µm	Ra = 2-8 µm; Rz = 8-25 µm
Flexural modulus (x, z plane)*	DIN EN ISO 178	75 MPa	75MPa
Tensile strength (x-y plane)	DIN 53504, S2 (200 mm/min)	9 MPa ± 2 MPa	9 MPa ± 2 MPa
Tensile strength (z plane)		7 Mpa ± 2 MPa	7 Mpa ± 2 MPa
Elongation at break (x-y plane)*		>220%	>220%
Elongation at break (z plane)*		>120%	>120%
Compression set (23°C, 72h) (x, z plane)*	DIN ISO 815-1	20%	20%
Charpy Impact Strength (notched, 23°C) / kJ/m² (x, z plane)*	DIN EN ISO 179-1	Partial break / no break	Partial break / no break
Vicat softening temperature*	DIN EN ISO 306	84 - 96°C	84 - 96°C

* From supplier data sheet

** Surface roughness may vary depending on orientation

TOLERANCES

For well-designed parts, tolerances of ± 0.30mm plus 0.002mm/mm can typically be achieved.
Note that tolerances may change depending on part geometry.

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