



Infilus™ TPU

Flexible. Elastic. Abrasion-resistant.

Infilus™ TPU is a 1.75 mm thermoplastic-polyurethane filament with Shore 95A hardness, combining rubber-like flexibility with excellent tear strength and abrasion resistance. It is suited to gaskets, seals, vibration dampers, protective covers and wearable parts that must absorb impact without fracturing.

DIAMETER
1.75 ± 0.02 mm

ORIGIN
Made in Germany

NET WEIGHT
1 kg (2.2 lb)

PACKAGING
Recycled spool & box

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PHYSICAL PROPERTIES

Property	Testing Method	Typical Value
Density	ISO 1183	1.21 g/cm³ at 23 °C
Shore hardness	ISO 868	95 A
Melt flow index	ISO 1133 (220 °C, 10 kg)	15 g/10 min
Moisture absorption (24 h)	ISO 62	0.30 %
Filament diameter tolerance	Laser gauge, in-line	± 0.03 mm

THERMAL PROPERTIES

Property	Testing Method	Typical Value
Glass transition temperature	DSC, 10 °C/min	-30 °C
Melting point	DSC, 10 °C/min	205 °C
Vicat softening temperature	ISO 306	75 °C
Service temperature range	Internal method	-30 to 80 °C
Decomposition temperature	TGA, 20 °C/min	320 °C

MECHANICAL PROPERTIES

Property	Testing Method	Typical Value
Tensile strength (X-Y)	ISO 527	40 ± 4 MPa
Tensile strength (Z)	ISO 527	30 ± 3 MPa
Modulus at 100 % elongation	ISO 527	8 ± 1 MPa
Modulus at 300 % elongation	ISO 527	16 ± 2 MPa
Elongation at break (X-Y)	ISO 527	600 ± 80 %
Elongation at break (Z)	ISO 527	350 ± 50 %
Tear strength	ISO 34-1	85 ± 5 kN/m
Abrasion loss	ISO 4649 / DIN 53516	30 ± 5 mm³
Compression set (23 °C, 24 h)	ISO 815	25 ± 3 %

Typical values – not a specification. Actual values may vary with printing conditions and part geometry.

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RECOMMENDED PRINTING CONDITIONS

Parameter	Value
Nozzle temperature	220 – 235 °C
Build plate temperature	30 – 50 °C
Build surface	PEI, glass
Printing speed	20 – 40 mm/s
Cooling fan	30 – 60 %

Parameter	Value
First layer height	0.2 mm
Retraction distance	0.5 – 2 mm
Retraction speed	20 – 30 mm/s
Drying (if required)	55 °C / 6 h
Enclosure	Not required

Parameters based on a 0.4 mm nozzle. Use a direct-drive extruder where possible and keep print speeds low to avoid buckling or under-extrusion of the flexible filament.

CHEMICAL RESISTANCE

Agent	Effect	Agent	Effect
Weak acids	Good	Weak alkalis	Good
Strong acids	Poor	Strong alkalis	Poor
Oils & greases	Good	Alcohols	Fair
Aliphatic hydrocarbons	Good	Aromatic hydrocarbons	Poor
Water (ambient)	Good	Ketones	Poor

LEGEND
Good — minor effect after prolonged contact at ambient temperature.
Fair — suitable for short-term contact at ambient temperature.
Poor — material becomes unstable on contact at ambient temperature.

STORAGE & HANDLING

Store the filament sealed in its original packaging in a cool, dry environment (15 – 25 °C, < 50 % RH). TPU is strongly hygroscopic and must be kept dry: moisture absorption leads to popping, stringing and weak inter-layer bonding. Always dry at 55 °C for 6 h before printing after storage, and use a heated dry-box for continuous printing.

AVAILABLE COLORS

Swatch colors are representative approximations.



DISCLAIMER

All figures on this data sheet describe the typical behaviour of Infilus™ TPU and are provided as general guidance. They are not contractual specifications and must not be used on their own to qualify parts, set acceptance criteria, or validate regulated applications. Real-world results depend on the printer, slicer settings, nozzle wear, environmental conditions and part geometry, so customers are strongly advised to run their own trials before committing the material to a production or end-use application. Infilus may adjust formulations, suppliers or packaging whenever we believe it improves quality; when that happens, this sheet will be revised and the version number updated. Customers remain responsible for ensuring that their chosen application complies with all local laws, safety standards and recycling obligations. Infilus does not assume liability for any direct or indirect damage, loss or injury connected to the handling, printing or end use of this product, and no warranty is given beyond what is expressly agreed in a separate written contract.