



TPU

Technical Data Sheet

This material offers excellent flexibility with a hardness rating of 95A, ensuring easy printing even for large, complex, and precise elastomer prototypes. It provides superior elasticity and maintains shape stability without deformation. The printed parts demonstrate high tear strength, wear resistance, and cut resistance, ensuring long-term durability and reliability. With its balanced hardness and resilience, the material is well-suited for functional applications such as insoles and flexible mechanical components.

Material Status	Mass Production		
Characteristics	<ul style="list-style-type: none"> Flexible and soft High flexibility 	<ul style="list-style-type: none"> High toughness High impact resistance 	
Applications	<ul style="list-style-type: none"> Shoe material Machinery 	<ul style="list-style-type: none"> Electronic appliances Sporting products 	<ul style="list-style-type: none"> Automobile Medical prosthesis Conveying pipeline
Form	<ul style="list-style-type: none"> Filament 		
Processing Method	<ul style="list-style-type: none"> 3D Print, FDM Print 		

	Testing Method	Typical Value	
Physical Properties			
Density	GB/T 1033	1.21	g/cm ³
Melt Flow Index	GB/T 3682	1.2	(190°C/2.16kg)

Mechanical Properties			
Tensile Strength	GB/T 1040	35	MPa
Elongation at Break	GB/T 1040	≥800	%
Flexural Strength	GB/T 9341	N/A	
Flexural Modulus	GB/T 9341	N/A	
IZOD Impact Strength	GB/T 1843	N/A	

Thermal Properties

Heat distortion Temperature	GB/T 1634	N/A
Continuous Service Temperature	IEC 60216	N/A
Maximum (short term) Use Temperature		N/A

Electrical Properties

Insulation Resistance	DIN IEC 60167	N/A
Surface Resistance	DIN IEC 60093	N/A

Recommended printing parameters

Parameter	Recommended Range
Extruder Temperature	220–250°C
Build Platform Temperature	45 – 60°C
Fan Speed	100%
Printing Speed	20–50 mm/s

These recommendations are based on a 0.4 mm nozzle and Simplify3D v4.1.2. Printing performance may vary depending on nozzle diameter and printer setup.

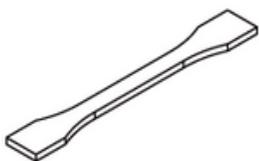
Drying Recommendations

Not applicable under standard storage and printing conditions.

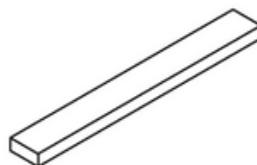
Precautions

- For best results, dry the filament at 55°C for more than 4 hours before use. Using the Mech Power Filament Storage Box or a similar cartridge during printing helps maintain stable material quality.
- Use a short-range dual-drive extruder designed for flexible materials. Printing eTPU-95A on Bowden (remote) extrusion systems can be challenging; if used, maintain a printing speed of 20 mm/s or lower.
- After prolonged use, the nozzle may accumulate impurities. Clean regularly using a dedicated cleaning filament, and replace the nozzle and throat if needed to maintain consistent print performance.

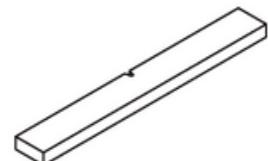
Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1043

The physical, mechanical, thermal, and electrical characteristics of this filament are evaluated through injection-molded spline testing.

Print Test Condition:

Parameter	Recommended Setting
Extruder Temperature	210–250°C
Build Platform Temperature	60°C
Outline / Perimeter Shells	4
Top / Bottom Layers	4
Infill Percentage	20%
Fan Speed	100%
Printing Speed	40 mm/s

Test performed using a 0.4 mm nozzle with Simplify3D v4.1.2. Printing parameters may vary based on nozzle size, material type, and machine configuration.

Notice

All information provided by Mech Power regarding this product, including data, recommendations, or usage guidelines, is based on thorough testing and provided in good faith.

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