Mech Power
Parts made right

TPE

Technical Data Sheet

This flexible TPE printing material with a hardness of 83A offers excellent durability and strength. Compared to TPU-95A and eFlex, it produces softer models with a smooth, refined surface finish and low surface friction, making it ideal for parts requiring both flexibility and a comfortable tactile feel.

Material Status	**Mass Production**		
Characteristics	• Matte surface finish • Skin-friendly feel • Flexible and soft	• Sturdy and durable • High elasticity • High tear strength	• High impact resistance
Applications	• Shoe material • Machinery • Automotive components	• Electronic products • Flexible piping / tubing • Sporting goods	
Form	• Filament		
Processing Method	• 3D Print, FDM Print		

	Testing Method	**Typical Value**	
Physical Properties			
Density	GB/T 1033	1.14	g/cm^3
Melt Flow Index	GB/T 3682	N/A	
Mechanical Properties			
Tensile Strength	GB/T 1040	32	MPa
Elongation at Break	GB/T 1040	420	%
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 parameters may vary depending on nozzle diameter.

Drying Recommendations

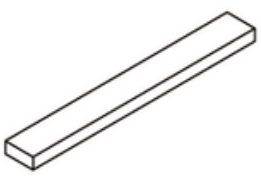
No specific drying required under standard storage and printing conditions.

Precautions

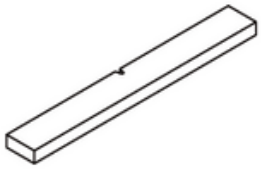
- Drying is not mandatory under standard conditions, but for best results, dry the filament at 55°C for at least 4 hours before printing. Using an eBOX filament dryer during printing is also recommended to maintain consistent performance.
- Use a short-range, dual-gear extruder specifically designed for flexible materials. Remote (Bowden) extruders are generally not compatible with elastic filaments.
- Extended print durations may cause nozzle contamination or residue buildup. To maintain consistent flow, use cleaning filament regularly, and replace the nozzle or throat when necessary.

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	45°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