# Siraya Tech Flex TPU 95A

Black

PRODUCT INTRODUCTION

- **Optimal Flexibility and Speed:** Balances flexibility with toughness, enhancing 3D printing speeds without compromising quality.
- **User-Friendly Printing:** Features low-warp, low-odor properties, and excellent bed adhesion for easy printing.
- **Durable and Reliable:** Produces durable, bendable prints capable of supporting substantial weight.
- **Superior Packaging and Compatibility:** Comes in moisture-resistant bags with a three-year shelf life, compatible with most FDM 3D printers.

APPLICATIONS

- **Footwear and Protective Gear:** Perfect for crafting durable shoe components and protective cases or pads.
- **Automotive and Medical Devices:** Ideal for flexible automotive interiors and customized medical equipment.
- **Robotics:** Suitable for producing flexible, tough parts essential in robotic mechanisms.

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Property Data
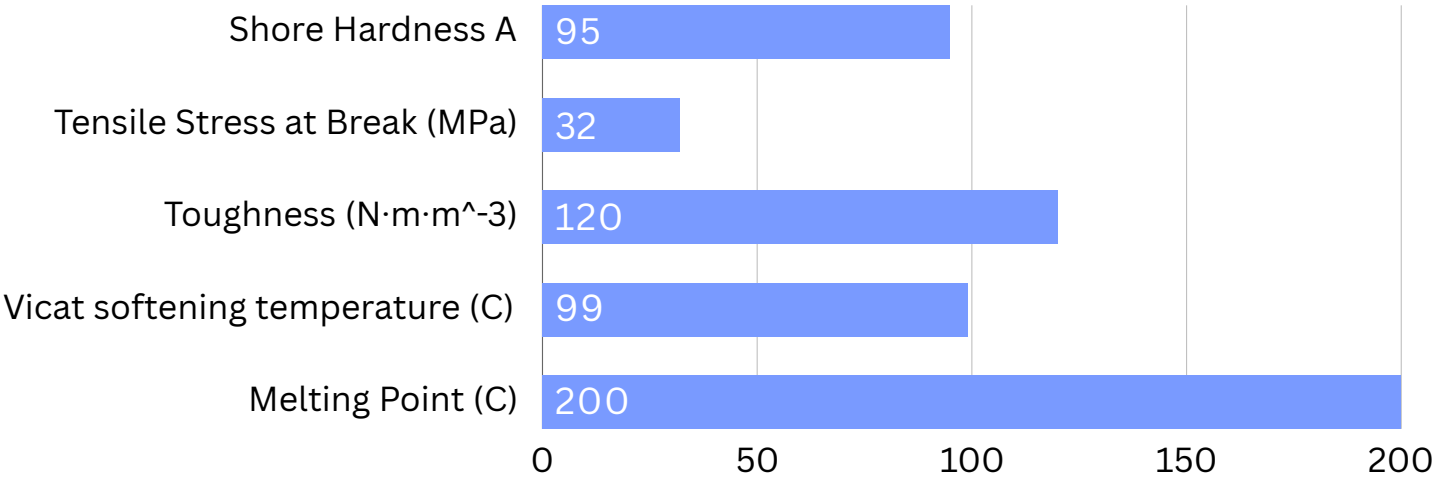
Mechanical Properties	Measure	Method	Processed
Tensile Stress at Break (MPa)	32± 3.0 MPa	ISO 527	Tested on X/Y axis
Young's Modulus (MPa)	20	ASTM D638	-
Elongation at Break(%)	500	ASTM D638	Tested on X/Y axis
Toughness (N·m·m^-3)	120	-	-
Tensile stress at 100% (MPa)	9.8	-	Tested on X/Y axis
Tensile stress at 200% (MPa)	12.5	-	Tested on X/Y axis
Tensile stress at 300% (MPa)	17		Tested on X/Y axis

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Property Data

Other Properties	Measure	Method	Processed
Vicat softening temperature ℃	99	ISO 306	-
IZOD Impact (Notched 72F) kJ/m	19.5	D256	-
Shore Hardness	95	ISO 7619	-
Abrasion Resistance	0.06	D4060	10K cycle
Melting Point (℃)	200		-
Filament Density g/cm³	1.61	ISO 1183	-

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Work Flow

Preparing for Printing

- **Printer Compatibility:** Use FDM printers with direct drive extruders for better filament control. Mount the filament spool directly above the extruder to minimize the path to the extruder, enhancing print quality.

- **Print Bed Preparation:** Ensure the print bed is clean and level. Set the heated bed temperature between 20°C and 50°C, adjusting based on your printer's specifications.

- **Dry:** To achieve better printing results, please dry the Flex TPU 95A filament at 50°C - 65°C for 4-6 hours in a filament dryer or an oven before printing.

Printing with Flex TPU 95A

Nozzle Temperature	200-230°C
Recommended Nozzle Diameter	0.2mm (The best results: 0.4mm)
Print Speed	30-120 mm/s (Start at the lower end and gradually increase)
Retraction speeds	1800-3600 mm/min
Retraction Distance	1-5 mm (Start with short and slow retraction)
Build Platform Material	PEI or glass with glue stick application
Cooling Fan	On

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Work Flow

Moisture Management

- **Storage:** Keep the filament in the moisture-resistant aluminum bags provided. For extended storage, use a dry box with desiccant to maintain humidity below 15%.
- **Drying Filament:** If you suspect moisture absorption, dry the filament at 50°C - 65°C for 4-6 hours in a filament dryer or an oven.

Troubleshooting Common Issues

- **Stringing**

Tweak retraction settings and adjust print speed. Ensure the filament is dry, as moisture can contribute to stringing.

- **Poor Bed Adhesion**

Use a glue stick or hairspray to enhance adhesion. If necessary, increase the bed temperature slightly to ensure the filament sticks properly. Sometimes, enclosing the printer can help maintain a consistent temperature, reducing warping.

- **Under-Extrusion**

Check for Blockages: Regularly check and clean the nozzle to prevent blockages that can lead to under-extrusion.

Adjust Extruder Tension: Make sure the extruder tension is correctly set for flexible materials, which often require different tension settings

- **Poor Detail Resolution**

Reduce Layer Height: For better detail, reduce the layer height. This will allow for finer details to be more apparent in the print.

Adjust Speed for Complex Parts: Slow down the print speed when printing intricate parts or details to allow more time for the filament to deposit accurately.

Implementing these troubleshooting strategies can help solve common issues encountered while printing with Siraya Tech Flex TPU 95A, leading to smoother printing experiences and higher-quality results. Additionally, if you have any questions, please feel free to email **support@siraya.tech**.

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