



TPU-95A Glossy

Flexible Thermoplastic Polyurethane · glossy finish, Shore 95A

1.75 mm ± 0.03

1 kg net

OEM / ODM

Document no.	WJ-TDS-TPU95GLOSSY-001
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Supersedes	None (first issue)

1. DESCRIPTION

WJ TPU-95A Glossy is a flexible filament balancing flexibility, toughness and abrasion resistance, with a smooth glossy surface finish. At Shore 95A it is the firmest hardness in the WJ TPU range, offering the most structural rigidity while still bending and absorbing impact.

Typical applications

phone and device cases, cable management, gaskets and seals, wearable parts, and functional prototypes needing flex with structural support.

Processing summary

print slowly and with minimal retraction to avoid jamming in bowden-style extruders; a direct-drive extruder gives the most reliable results. Keep the filament dry, as TPU is moisture-sensitive.

- Drying before printing 70 °C for 8 · 12 h
- Nozzle size 0.4 mm and above
- Nozzle temperature 220 · 240 °C
- Build plate temperature 30 · 35 °C
- Part cooling fan Medium to high
- Printing speed < 80 (outer wall ~ 50) mm/s

2. PRODUCT SPECIFICATION

typical, not a specification for acceptance

Parameter	Unit	Value
Filament diameter	mm	1.75
Diameter tolerance	mm	± 0.03
Net filament weight	kg	1
Spool material	·	PC + ABS spool, Ø 200 × 65 mm, hub Ø 55 mm, heat resistant to 90 °C
Spool size (Ø × H)	mm	Ø 200 × 65 mm
Colour range	·	Stock colours as listed on the product page; RAL / Pantone matching and custom colour development on request

Values are typical for the grade and are subject to normal manufacturing tolerance. Colour masterbatch is not included in the base polymer content.

3. RECOMMENDED PRINTING PARAMETERS

starting point, not a guarantee

Parameter	Unit	Value
Drying before printing	°C / h	70 °C for 8 · 12 h
Printing and storage humidity	·	Dry storage; sealed with desiccant
Nozzle size	mm	at least 0.4
Nozzle type	·	Brass or hardened steel
Nozzle temperature	°C	220 · 240
Build plate type	·	Cool Plate, Engineering Plate or Textured PEI
Bed surface preparation	·	Clean; light adhesive if needed

Parameter	Unit	Value
Bed temperature	°C	30 · 35
Part cooling fan	·	Medium to high
Printing speed	mm/s	< 80 (outer wall ~ 50)
Enclosed chamber	·	Not required
Chamber temperature	°C	25 · 45
Retraction length / speed	mm / mm/s	0.8 · 1.4 mm / 20 · 40 mm/s
Max overhang angle	°	~ 70
Max bridging length	mm	~ 20

4. MATERIAL PROPERTIES

specimens per section 5

Values are typical results from tests on specimens printed and conditioned as described in Section 5. They are not a guarantee of performance of any individual printed part.

4.1 Physical and thermal properties

Property	Test method	Unit	Typical value
Density	ISO 1183	g/cm ³	~ 1.20
Melt flow rate (MFR)	210 °C, 2.16 kg	g/10 min	~ 5.2 ± 0.3
Melting temperature	DSC	°C	~ 185
Glass transition temperature	DSC	°C	~ -35
Vicat softening temperature	ISO 306	°C	~ 75
Heat deflection temperature	ISO 75, 0.45 MPa	°C	N/A (elastomer)
Heat deflection temperature	ISO 75, 1.8 MPa	°C	N/A (elastomer)
Saturated water absorption	25 °C, 55 % RH	%	~ 0.7

4.2 Mechanical properties

Property	Test method	Unit	Typical value
Tensile strength	ISO 527	MPa	~ 35 ± 3
Elongation at break	ISO 527	%	~ 450 ± 50
Tear strength	ISO 34-1	kN/m	~ 70 ± 8
Shore hardness	ISO 868	·	95A
Compression set (23 °C, 72	h) ISO 815	%	~ 20
Abrasion resistance (DIN)	DIN 53516	mm ³	~ 40
Rebound resilience	ISO 4662	%	~ 45
Flexural modulus	ISO 178	MPa	N/A (elastomer)
Impact strength, notched	ISO 179	kJ/m ²	No break (highly flexible)
Impact strength, unnotched	ISO 179	kJ/m ²	No break (highly flexible)

4.3 Chemical and physical characteristics

Parameter	Value
Composition	Thermoplastic polyurethane (TPU), Shore 95A hardness
Odour	Mild odour when printing
Skin hazard	No hazard in solid filament form
Chemical stability	Stable under normal storage and handling
Solubility	Insoluble in water
UV and weathering resistance	Moderate · not UV-stabilised
Acid resistance	Limited resistance
Alkali resistance	Limited resistance
Organic solvent resistance	Resistant to many oils; limited resistance to strong solvents
Oil and grease resistance	Good resistance to oils and greases
Flammability	Flammable
Combustion products	Carbon oxides, nitrogen oxides

5. TEST CONDITIONS

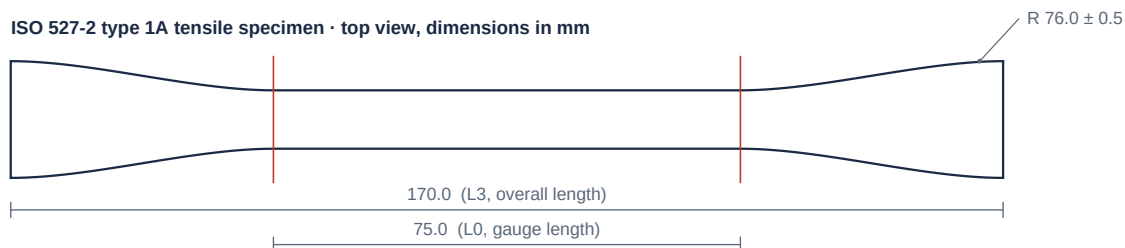
ISO 291, 23 / 50 class 2

5.1 Specimen printing and conditioning

Parameter	Unit	Value
Nozzle temperature	°C	230
Bed temperature	°C	32
Printing speed	mm/s	50
Infill density	%	100
Layer height	mm	0.2
Specimen conditioning / annealing	°C / h	23 °C / 50 % RH for 24 h (ISO 291)

5.2 Specimen geometry (dimensions in millimetres)

Fig. 1 ISO 527-2 type 1A tensile specimen · top view, dimensions in mm



Section widths: $b_1 = 10.00 \pm 0.20$ (narrow section) · $b_2 = 20.00 \pm 0.20$ (grip ends) · $h = 4.00 \pm 0.20$ (thickness) · gauge length $L_0 = 75.0$ mm

Fig. 2 ISO 178 flexural specimen $80 \times 10 \times 4$ mm · three-point bending, span 64 mm

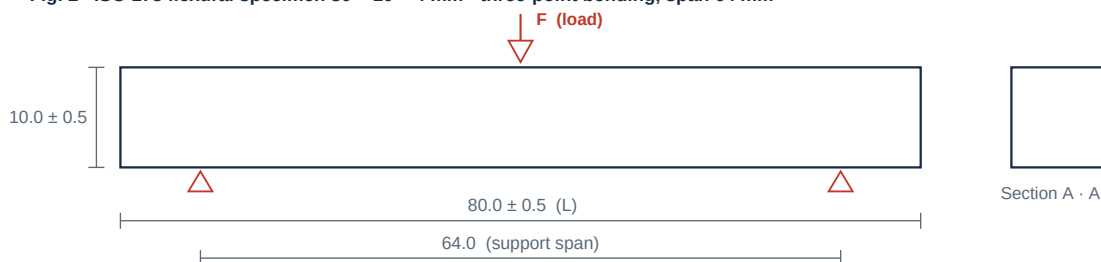


Fig. 3 ISO 179-1 Charpy notched specimen $80 \times 10 \times 4$ mm, 45° V-notch, depth 2.0 mm



6. STORAGE, HANDLING AND SAFETY

stewardship

Storage before use	Sealed bag with desiccant, 15 · 25 °C, below 50 % RH, away from direct sunlight and UV. Shelf life 24 months in the sealed bag.
Storage after opening	TPU picks up moisture faster than PLA or PETG. Reseal immediately after use and re-dry before any critical print: 50 · 60 °C for 6 · 8 h.
Symptoms of moisture	Severe bubbling, popping and hissing at the nozzle, foamy extrusion, poor surface finish, weak layer bonding. Dry before changing any settings.
Handling	Flexible filament must be guided over the shortest possible path. Avoid tight bends and small-diameter guides; a direct-drive extruder with a short bowden is strongly preferred.
Ventilation	Printing releases low levels of isocyanate-related volatiles and a noticeable odour. Print in a well-ventilated area or under extraction, especially for long jobs. Not for use in enclosed occupied spaces without extraction.
Fire and disposal	TPU is a combustible solid. Keep away from open flame and hot surfaces above 240 °C. Spool, bag and carton are recyclable; offcuts are not biodegradable and should go to plastics recycling.
Personal protection	No special protection required for normal use. Wear gloves when handling hot parts and safety glasses when cutting filament.

7. ORDERING INFORMATION AND PACKAGING

commercial

Standard spool	1.00 kg net, Ø 200 mm, 68 mm hub bore, 4 locating holes. 0.25 / 0.50 / 3.00 kg spools on request.
Standard diameter	1.75 mm (2.85 mm on request). Tolerance per Section 2.
Export carton	10 rolls per carton, 5-ply corrugated. Carton net 10.0 kg, gross approx. 13.1 kg. Neutral print as standard.
Colour range	Stock colours as listed in Section 2. Custom colours matched to RAL, Pantone or a physical sample, subject to a minimum batch quantity.
OEM services	Spool label, shrink film print, spool material and colour, carton artwork and user manual. Artwork setup and MOQ are quoted per project.
Order confirmation	Every order is confirmed by a proforma invoice stating grade, colour, diameter, quantity, unit price, Incoterms and lead time.
Shipping and quality documents	Commercial invoice, packing list, bill of lading, certificate of origin and batch certificate of analysis as standard. RoHS / REACH declaration and safety data sheet on request.

Commercial terms shown here are indicative. The signed proforma invoice or sales contract prevails in case of any conflict.

8. DISCLAIMER AND REVISION CONTROL

The data in this document are typical values obtained from tests on standard specimens produced under the conditions described in Section 5. They are provided for material comparison and selection only and do not constitute a specification, warranty or guarantee of performance. Properties of an actual printed part depend on printer hardware, slicing parameters, part geometry, build orientation, ambient conditions and post-processing. WJ reserves the right to amend this document without notice. The buyer is responsible for verifying that the material is suitable for the intended application, including any regulatory or food-contact requirement.

8.1 How to read the data in this sheet

Typical, not minimum	The property tables describe specimens printed exactly as stated in Section 5. They describe the material, not a machined or moulded part.
Orientation matters	Values marked X·Y apply to specimens printed flat on the build plate. Z values are measured on parts printed standing up and are typically lower than X·Y. Design for the direction that carries the load.
Batch variation	Values carry a ± range where extrusion, pigment and ambient humidity vary between batches; colour masterbatch can shift impact strength noticeably. Where no deviation is given, the value is a single representative test.
Not a certificate	This sheet is not an inspection certificate, a Declaration of Conformity, or a certificate of analysis. Batch-specific CoA, RoHS / REACH declarations and safety data sheets are issued separately on request.

8.2 Revision history

Rev	Date	Description	Approved
V1.0	2026-08-01	First issue of TPU-95A Glossy technical data sheet.	QC / WJ

Prepared and released by

Shenzhen Wuju Creative Trading Co., Ltd.

Quality Control Department · Shenzhen, China

Authorised signature and company stamp



Shenzhen Wuju Creative Trading Co., Ltd.

Room 1617A5, 16th Floor, Building A, Galaxy Century Building, southwest of the intersection of Shennan Avenue and Caitian Road, Futian District, Shenzhen, China
Tel +86 137 2765 4403 · newtwizardbusiness@gmail.com · www.wj3dprinterfilamentofactory.com · Reg. no. 91440300MAECMMFU4Y

TPU 95A Glossy - Data disclosure addendum

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TYPICAL REFERENCE VALUES / NO THIRD-PARTY REPORT

This technical data sheet provides typical reference values for material comparison and selection only. It is not an independent third-party test report and does not constitute a product specification, warranty or guarantee of performance. Test methods and specimen conditions are stated in the corresponding sections. The user must verify suitability for the intended application.

DOCUMENT CONTROL

This addendum supplements Section 8 of the original TDS. Numerical property values and processing ranges are unchanged. The original revision history remains unchanged. This TDS is not a certificate of analysis or conformity.