

KIMYA TPU-R 3D FILAMENT

Recycled thermoplastic polyurethane additive manufacturing filament

DESCRIPTION

Kimya TPU-R is a 3D printing filament made from recycled thermoplastic polyurethane (TPU), part of the polyurethane family. This translucent material offers excellent elasticity and flexibility, along with a Shore hardness of 90A. Despite being formulated from recycled materials, TPU-R maintains strong mechanical properties, making it ideal for printing durable, flexible parts. It is commonly used in sectors such as electronics, automotive, and consumer goods where both resilience and sustainability matter.

BENEFITS

- Excellent Flexible Properties.
- Sustainable Recycled Grade.
- Great Mechanical Properties.

TECHNICAL DATA

Properties

Diameter	1.75 ± 0.1 mm
Density	1.14 g/cm ³
Moisture rate	< 1 %
Melt flow index (MFI)	42 - 45 g/10min
Glass transition temperature (Tg)	-33°C (-27.4°F)

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Test Methods

Diameter	INS-6712
Density	ISO 1183-1
Moisture rate	INS-6711
Melt flow index (MFI)	ISO 1133-1 (@200°C-5kg)
Glass transition temperature (Tg)	ISO 11357-1 DSC (10°C/min-90-190°C)

Properties

Tensile Modulus	55.2 MPa (8.0 ksi)
Tensile Strength	27.7 MPa (4.0 ksi)
Tensile Strain at Strength	> 300 %
Tensile Stress at Break	27.4 MPa (4.0 ksi)
Tensile Strain at Break (type A)	> 300 %
Flexural Modulus	46.6 MPa (6.8 ksi)
Flexural Stress at Conventional Deflection (3.5% Strain)*	1.9 MPa (0.276 ksi)
Charpy Impact Resistance	No Break
Shore Hardness	90 A

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Tensile Modulus	ISO 37/2/500
Tensile Strength	ISO 37/2/500
Tensile Strain at Strength	ISO 37/2/500
Tensile Stress at Break	ISO 37/2/500
Tensile Strain at Break (type A)	ISO 37/2/500
Flexural Modulus	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	ISO 178
Charpy Impact Resistance	ISO 179-1/1eA
Shore Hardness	ISO 868

PROCESSING

Printing Direction

Printing Speed	XY
Nozzle Temperature	Initial layers: 10-20 mm/s, further layers 30-60 mm/s
Bed Temperature	195°C - 225°C (383°F - 437°F)

XY

Initial layers: 10-20 mm/s, further layers 30-60 mm/s
195°C - 225°C (383°F - 437°F)
60°C - 90°C (140°F - 194°F)

SUSTAINABILITY



Can be recycled



Recyclable packaging

NOTES

- *According to ISO 178, end of the test at 5% deformation even if there is no specimen break.
- The data should be considered as indicative values - Properties can be influenced by production conditions.