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Fiche Technique

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	Values	Test Methods
Diameter	1.75 ± 0.1 mm	INS-6712
Density	1.14 g/cm^3	ISO 1183-1
Moisture rate	< 1 %	INS-6711
Melt flow index (MFI)	42 - 45 g/10min	ISO 1133-1 (@200°C-5kg)
Glass transition temperature (Tg)	-33°C (-27.4°F)	ISO 11357-1 DSC (10°C/min-90-190°C)
Properties	**Values**	**Test Methods**
Tensile Modulus	55.2 MPa (8.0 ksi)	ISO 37/2/500
Tensile Strength	27.7 MPa (4.0 ksi)	ISO 37/2/500
Tensile Strain at Strength	> 300 %	ISO 37/2/500
Tensile Stress at Break	27.4 MPa (4.0 ksi)	ISO 37/2/500
Tensile Strain at Break (type A)	> 300 %	ISO 37/2/500
Flexural Modulus	46.6 MPa (6.8 ksi)	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	1.9 MPa (0.276 ksi)	ISO 178
Charpy Impact Resistance	No Break	ISO 179-1/1eA
Shore Hardness	90 A	ISO 868

PROCESSING

Printing Direction	XY
Printing Speed	Initial layers: 10-20 mm/s, further layers 30-60 mm/s
Nozzle Temperature	195°C - 225°C (383°F - 437°F)
Bed Temperature	60°C - 90°C (140°F - 194°F)

SUSTAINABILITY

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.

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