

# 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 <sup>3</sup>
Moisture rate	< 1 %
Melt flow index (MFI)	42 - 45 g/10min
Glass transition temperature (Tg)	-33°C (-27.4°F)

### 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

### Test Methods

INS-6712
ISO 1183-1
INS-6711
ISO 1133-1 (@200°C-5kg)
ISO 11357-1 DSC (10°C/min-90-190°C)

### Test Methods

ISO 37/2/500
ISO 37/2/500
ISO 37/2/500
ISO 37/2/500
ISO 37/2/500
ISO 178
ISO 178
ISO 179-1/1eA
ISO 868

## PROCESSING

### Printing Direction

Printing Speed  
Nozzle Temperature  
Bed Temperature

### 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



## 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.