

## 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**

|                                   |                        |
|-----------------------------------|------------------------|
| 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                |

**Values**

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

**PROCESSING****Printing Direction**

|                    |                                                       |
|--------------------|-------------------------------------------------------|
| 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)                           |

**XY**

|                                                       |
|-------------------------------------------------------|
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| 195°C - 225°C (383°F - 437°F)                         |
| 60°C - 90°C (140°F - 194°F)                           |

**SUSTAINABILITY**Can be  
recycledRecyclable  
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.