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Fiche Technique

KIMYA TPC-91A 3D FILAMENT

Flexible filament for FFF 3D Printers

DESCRIPTION

Kimya TPC-91A is a 3D printing filament made from thermoplastic copolyester (TPC), a type of elastomer. This material combines rigid ester segments and flexible ether segments through copolymerization, giving it both flexibility and durability. TPC-91A offers excellent chemical and impact resistance along with a Shore hardness of 91A, making it well-suited for producing flexible parts. It's used across various industrial sectors like electronics, textiles, and roofing, as well as in decorative and leisure 3D printing applications.

BENEFITS

- Flexibility.
- Durability.
- Chemical & Impact Resistance.

TECHNICAL DATA

Properties	Values	Test Methods
Diameter	1.75 ± 0.1 mm 2.85 ± 0.1 mm	INS-6712
Density	1.22 g/cm^3	ISO 1183-1
Moisture rate	< 0.5 %	INS-6711
Melt flow index (MFI)	18 - 20 g/10min	ISO 1133-1
Melting Temperature (Tm)	159°C (381.2°F)	ISO 11357-1 DSC (10°C/min-20-220°C)
Properties	**Values**	**Test Methods**
Tensile Modulus	67 MPa (9.7 ksi)	ISO 37/2/500
Tensile Strength	17.7 MPa (2.6 ksi)	ISO 37/2/500
Tensile Strain at Strength	> 500 %	ISO 37/2/500
Tensile Stress at Break	17.5 MPa (2.5 ksi)	ISO 37/2/500
Tensile Strain at Break (type A)	> 500 %	ISO 37/2/500
Flexural Modulus	66 MPa (9.6ksi)	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	2.6 MPa (0.38 ksi)	ISO 178
Charpy Impact Resistance	No Break	ISO 179-1/1eA
Shore Hardness	91 A	ISO 868

PROCESSING

Printing Direction	XY
Printing Speed	Initial layers: 10-20 mm/s, further layers 30-60 mm/s
Nozzle Temperature	245°C - 270°C (473°F - 518°F)
Bed Temperature	55°C - 65°C (131°F - 149°F)

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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