

Fiche Technique

KIMYA TPC-ESD 3D FILAMENT

Flexible filament for FFF 3D Printers

DESCRIPTION

Kimya TPC-ESD is a 3D printing filament made from thermoplastic copolyester (TPC), a type of elastomer. It combines rigid ester segments and flexible ether segments through copolymerization to deliver flexibility and strength. The "ESD" version adds protection against electrostatic discharge, making it especially useful in sensitive electronic applications. TPC-ESD offers chemical and impact resistance, with a Shore hardness of 91A, allowing for the printing of flexible, elastic parts. It's commonly used in industry for components like connectors, sensors, and measuring devices. Kimya TPC-ESD provides a blend of durability, flexibility, and electrostatic safety for industrial uses.

BENEFITS

- Flexibility & Elasticity.
- Great Electrostatic Discharge Protection.
- Impact Resistant.

TECHNICAL DATA**Properties**

Diameter	1.75 ± 0.1 mm
Density	1.2 g/cm ³
Moisture rate	< 1 %
Melt flow index (MFI)	21 - 25 g/10min
Melting Temperature (Tm)	159°C (381.2°F)

Properties

Surface Resistivity	10 ⁷ - 10 ⁹ Ω/sq
Tensile Modulus	46 MPa (6.7 ksi)
Tensile Strength	13.1 MPa (1.9 ksi)
Tensile Stress at Break	12.8 MPa (1.9 ksi)
Tensile Strain at Break (type A)	> 400 %
Flexural Modulus	54 MPa (7.8ksi)
Flexural Stress at Conventional Deflection (3.5% Strain)*	2 MPa (0.29 ksi)
Charpy Impact Resistance	No Break
Shore Hardness	91 A

Test Methods

INS-6712
ISO 1183-1
INS-6711
ISO 1133-1 (@210°C-2.16kg)
ISO 11357-1 DSC (10°C/min-20-220°C)

Test Methods

ASTM D257
ISO 527-2/5A/50
ISO 527-2/5A/50
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
245°C - 270°C (473°F - 518°F)
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.