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Fiche Technique

KIMYA PC-FR 3D FILAMENT

Flame-retardant and high-temperature durable filament for FFF 3D Printers

DESCRIPTION

Kimya PC-FR is a 3D printing filament made from polycarbonate (PC) with built-in flame-retardant properties. As an amorphous thermoplastic, it offers excellent dimensional stability, low moisture sensitivity, and strong impact resistance. With a high glass transition temperature and a wide operating range from -80°C (-112°F) to 105°C (221°F), PC-FR is ideal for applications requiring both thermal and flame resistance. These features make it particularly suitable for demanding industries such as railway, automotive, and electrical/electronic components.

BENEFITS

- Flame-Retardant.
- High Operating Temperature Range.
- Impact-Resistant.

TECHNICAL DATA

Properties	Values	Test Methods
Diameter	1.75 ± 0.1 mm	INS-6712
Density	1.31 g/cm^3 (0.047 lb/in^3)	ISO 1183-1
Moisture Rate	< 0.5 %	ISO-6711
Melt flow index (MFI)	4.2 g/10 min	ISO 1133-1(@260°C-2.16kg)
Glass transition temperature (Tg)	117°C (243°F)	ISO 11357-1 DSC (10°C/min-20-300°C)

Properties	Values	Test Methods
Tensile Modulus	2,411 MPa (349.7 ksi)	ISO 527-2/1A/50
Tensile Strength	70.5 MPa (10.2 ksi)	ISO 527-2/1A/50
Tensile Strain at Strength	5.7 %	ISO 527-2/1A/50
Tensile Stress at Break	69.9 MPa (10.1 ksi)	ISO 527-2/1A/50
Tensile Strain at Break (type A)	5.9 %	ISO 527-2/1A/50
Tensile Strain at Break (type B et C)	0 %	ISO 527-2/1A/50
Flexural Modulus	2,334 MPa (338.5 ksi)	ISO 178
Deformation at Flexural Strain	> 5 %	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	79.2 MPa (11.5 ksi)	ISO 178
Charpy Impact Resistance	7 kJ/m^2 (3.3 ft-lbs/in^2)	ISO 179-1/1eA
Shore Hardness	82.4 D	ISO 868

PROCESSING

Printing Direction	XY
Printing Speed	45-55 mm/s
Nozzle Temperature	295°C - 310°C (563°F - 590°F)
Bed Temperature	110°C - 120°C (230°F - 248°F)
Chamber Temperature	95°C - 110°C (203°F - 230°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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