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Fiche Technique

KIMYA PA CARBON 3D FILAMENT

PA/Carbon Fibre additive manufacturing filament

DESCRIPTION

Kimya PA Carbon is a high-performance 3D printing filament made from nylon (polyamide) reinforced with carbon fibres. This engineering-grade thermoplastic offers exceptional mechanical strength, high temperature resistance, and excellent chemical durability. The carbon fiber reinforcement not only improves rigidity but also enhances dimensional stability and reduces warping during printing. With a matte surface finish and ease of use on open-chamber printers, Kimya PA Carbon is ideal for producing strong, heat-resistant parts. Like other nylon-based materials, it should be properly dried before use due to its sensitivity to moisture.

BENEFITS

- High Mechanical Strength.
- Excellent Thermal and Chemical Resistance.
- Low Warpage.

TECHNICAL DATA

Properties	Values	Test Methods
Diameter	1.75 ± 0.1 mm	INS-6712
Density	1.192 g/cm^3 (0.0431 lb/in^3)	ISO 1183-1
Melt flow index (MFI)	14.5 g/10 min	ISO 1133-1(@240°C-5kg)
Glass transition temperature (Tg)	71°C (160°F)	ISO 11357-1 DSC (10°C/min-20-420°C)
Melting Temperature (Tm)	229°C (444°F)	ISO 11357-1 DSC (10°C/min-20-420°C)
Properties	**Values**	**Test Methods**
Heat Distortion Temperature (HDT) (1.8Mpa)	120°C (248°F)	ISO 75
Tensile Modulus	10,800 MPa (1566.4 ksi)	ISO 527-2/1A/50
Tensile Strength	127 MPa (18.4 ksi)	ISO 527-2/1A/50
Tensile Strain at Strength	3 %	ISO 527-2/1A/50
Tensile Stress at Break	127 MPa (18.4 ksi)	ISO 527-2/1A/50
Tensile Strain at Break (type A)	3 %	ISO 527-2/1A/50
Flexural Modulus	5,460 MPa (791.9 ksi)	ISO 178
Deformation at Flexural Strain	4 %	ISO 178
Flexural Strength*	177 MPa (25.7 ksi)	ISO 178
Flexural Stress at Break	177 MPa (25.7 ksi)	ISO 178
Deformation at Flexural Strength	4 %	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	176 MPa (25.5 ksi)	ISO 178
Charpy Impact Resistance	3.4 kJ/m^2 (1.6 ft-lbs/in^2)	ISO 179-1/1eA
Shore Hardness	81.3 D	ISO 868

PROCESSING

Printing Direction	XY
Printing Speed	40-50 mm/s
Nozzle Temperature	275°C - 285°C (527°F - 545°F)
Bed Temperature	110°C - 120°C (230°F - 248°F)

SUSTAINABILITY

Can be recycled

Recyclable 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.

Dernière mise à jour : 2025-12-22

Nom du chapitre : KIMYA Filaments for Additive Manufacture

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