

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

Diameter
Density
Melt flow index (MFI)
Glass transition temperature (Tg)
Melting Temperature (Tm)

Values

1.75 ± 0.1 mm
1.192 g/cm³ (0.0431 lb/in³)
14.5 g/10 min
71°C (160°F)
229°C (444°F)

Test Methods

INS-6712
ISO 1183-1
ISO 1133-1 (@240°C-5kg)
ISO 11357-1 DSC (10°C/min-20-420°C)
ISO 11357-1 DSC (10°C/min-20-420°C)

Properties

Heat Distortion Temperature (HDT)
(1.8Mpa)
Tensile Modulus
Tensile Strength
Tensile Strain at Strength
Tensile Stress at Break
Tensile Strain at Break (type A)
Flexural Modulus
Deformation at Flexural Strain
Flexural Strength*
Flexural Stress at Break
Deformation at Flexural Strength
Flexural Stress at Conventional
Deflection (3.5% Strain)*
Charpy Impact Resistance
Shore Hardness

Values

120°C (248°F)
10,800 MPa (1566.4 ksi)
127 MPa (18.4 ksi)
3 %
127 MPa (18.4 ksi)
3 %
5,460 MPa (791.9 ksi)
4 %
177 MPa (25.7 ksi)
177 MPa (25.7 ksi)
4 %
176 MPa (25.5 ksi)
3.4 kJ/m² (1.6 ft-lbs/in²)
81.3 D

Test Methods

ISO 75
ISO 527-2/1A/50
ISO 527-2/1A/50
ISO 527-2/1A/50
ISO 527-2/1A/50
ISO 527-2/1A/50
ISO 178
ISO 178
ISO 178
ISO 178
ISO 178
ISO 178
ISO 179-1/1eA
ISO 868

PROCESSING

Printing Direction

Printing Speed
Nozzle Temperature
Bed Temperature

XY

40-50 mm/s
275°C - 285°C (527°F - 545°F)
110°C - 120°C (230°F - 248°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.

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