

# KIMYA ABS CARBON 3D FILAMENT

## Low-cost reinforced filament for FFF 3D Printers

### DESCRIPTION

Kimya ABS Carbon is a 3D printing filament made from a blend of ABS (Acrylonitrile-Butadiene-Styrene) and carbon fibers. As a member of the styrenic polymer family, this composite material benefits from the toughness of ABS while the added carbon fibers significantly improve its rigidity and dimensional stability. Kimya ABS Carbon is commonly used by drone manufacturers, modeling enthusiasts, and for producing tools and functional parts. It offers a strong balance of strength, durability, and precision for technical 3D printing projects.

### BENEFITS

- Increased Rigidity.
- Lightweight and Strong.
- Enhanced Print Precision.

### TECHNICAL DATA

#### Properties

Properties	Values	Test Methods
Diameter	1.75 ± 0.1 mm	INS-6712
Density	2.85 ± 0.1 mm	ISO 1183-1
Moisture rate	1.048 g/cm <sup>3</sup>	INS-6711
Melt flow index (MFI)	<0.5%	ISO 1133-1 (@220°C-10kg)
Glass transition temperature (Tg)	17.4g/10min	ISO 11357-1 DSC (10°C/min-20-280°C)

#### Properties

Properties	Values	Test Methods
Tensile Modulus	108°C (226°F)	ISO 527-2/5A/50
Tensile Strength	3,395 MPa (492.55 ksi)	ISO 527-2/5A/50
Tensile Stress at Break	36.7 MPa (5.32 ksi)	ISO 527-2/5A/50
Tensile Strain at Break (type A)	31 MPa (4.50 ksi)	ISO 527
Flexural Modulus	1.9 %	ISO 178
Deformation at Flexural Strain	2,952 MPa (428.15 ksi)	ISO 178
Flexural Stress at Conventional Deflection (3.5% Strain)*	>5%	ISO 178
Charpy Impact Resistance	173 MPa (25.1 ksi)	ISO 179-1/1eA
Shore Hardness	18 kJ/m <sup>2</sup> (8.6 ft-lbs/in <sup>2</sup> )	ISO 868

### PROCESSING

#### Printing Direction

Printing Speed	<b>XY</b>
Nozzle Temperature	Initial layers: 10-20 mm/s, further layers 30-60 mm/s
Bed Temperature	235°C - 255°C (455°F - 491°F)
	85°C - 95°C (185°F - 203°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.