

MATERIAL DATA SHEET

Carbon PEEK - Glass-Fiber 30%

Color: Black

	Conditions	Test Method	Value
Physical Properties			
Density/Specific Gravity Density is the mass per unit volume of a material. Specific gravity is a measure of the ratio of mass of a given volume of material at 23°C to the same volume of deionized water.	Crystalline	ISO 1138	1.40 g cm ⁻³
Water Absorption Polymers have a tendency to soak up water and this propensity may lead to an alteration of the properties of the plastic.	24 hr Immersion	ISO 62-1	0.04%
Shore D Hardness Measures the depth of penetration of a specific indenter. Shore Hardness measures are dimensionless. It goes between 0 and 100. The higher number represents the harder material.	23°C	ISO 868	88
Mechanical Properties			
Tensile Modulus The ratio of stress to elastic strain in tension. A high tensile modulus means that the material is rigid - more stress is required to produce a given amount of strain.	23°C	ISO 527	25 GPa
Tensile Strength @ Break The force per unit area (MPa or psi) required to break a material in such a manner.	23°C 125°C 175°C 275°C	ISO 527 ISO 527 ISO 527 ISO 527	260 MPa 160 MPa 85 MPa 50 MPa
Tensile Strain @ Break (Elongation) The elongation of plastic is the percentage increase in length that occurs before it breaks under tension. Rigid plastics, especially fiber reinforced ones, often exhibit values under 5%. The combination of high tensile strength and high elongation leads to materials of high toughness.	23°C	ISO 527	1.70%
Flexural Modulus An intensive property that is computed as the ratio of stress to strain in flexural deformation, or the tendency for a material to resist bending.	23°C	ISO 178	23 GPa
Flexural Strength The flexural strength of a material is defined as its ability to resist deformation under load.	23°C 125°C 175°C 275°C	ISO 178 ISO 178 ISO 178 ISO 178	380 MPa 250 MPa 120 MPa 60 MPa
Charpy Notched Impact Strength Used to determine the toughness. A standardized high strain-rate impact test which determines the amount of energy absorbed by a material during fracture. The notch is machined forcing a break at a specific location.	23°C	ISO 179/1eA	7.0 kJ m ⁻²

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Charpy Unnotched Impact Strength Used to determine the toughness. A standardized high strain-rate impact test which determines the amount of energy absorbed by a material during fracture.	23°C	ISO 179/1U	45 kJ m ⁻²
Izod Notched Impact Strength The toughness of a plastic is measured by its resistance to impacts. It is the ability of a material to resist both fracture and deformation. The notch is machined forcing a break at a specific location.	23°C	ISO 180/A	9.5 kJ m ⁻²
Izod Unnotched Impact Strength The toughness of a plastic is measured by its resistance to impacts. It is the ability of a material to resist both fracture and deformation.	23°C	ISO 180/U	45 kJ m ⁻²
Thermal Data			
Melting Point The temperature at which the plastic melts from solid to liquid form.	-	ISO 11357	343°C
Coefficient of Thermal Expansion The ability of a plastic to expand under the effect of temperature elevation. It tells you how much the developed part will remain dimensionally stable under temperature variations.	Along flow below 143°C Average flow below 143°C Along flow above 143°C Average flow above 143°C	ISO 11359 ISO 11359 ISO 11359 ISO 11359	5 ppm K ⁻¹ 40 ppm K ⁻¹ 6 ppm K ⁻¹ 100 ppm K ⁻¹