

MATERIAL DATA SHEET

PEEK - Victrex 450GL30
Glass-Fiber 30%

Color: Tan 

	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	1.51 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	87.5
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	11.8 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	180 MPa 115 MPa 60 MPa 35 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	2.70%
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	11.3 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	270 MPa 190 MPa 80 MPa 50 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	8.0 kJ m ⁻²



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<p>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.</p>	23°C	ISO 179/1U	55 kJ m ⁻²
<p>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.</p>	23°C	ISO 180/A	10 kJ m ⁻²
<p>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.</p>	23°C	ISO 180/U	60 kJ m ⁻²
Thermal Data			
<p>Melting Point The temperature at which the plastic melts from solid to liquid form.</p>	-	ISO 11357	343°C
<p>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.</p>	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	18 ppm K ⁻¹ 45 ppm K ⁻¹ 18 ppm K ⁻¹ 110 ppm K ⁻¹