KB DELTA
COMPRESSOR VALVE PARTS

MATERIAL DATA SHEET

MTX - Stanyl TW200F3
Glass-Fiber 15%

Color: Dark Green

	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.	-	ISO 1138	1290 kg/m^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	3.15%
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.	-	-	-
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 120°C 160°C 180°C 200°C	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2	6100 MPa 3000 MPa 2650 MPa 2500 MPa 2350 MPa
Tensile Strength @ Break The force per unit area (MPa or psi) required to break a material in such a manner.	23°C 120°C 160°C 180°C 200°C	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2	140 MPa 82 MPa 74 MPa 70 MPa 66 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 120°C 160°C 180°C 200°C	ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2 ISO 527-1/-2	3.50% 13.00% 12.00% 12.00% 12.00%
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 120°C 160°C	ISO 178 ISO 178 ISO 178	5800 MPa 2700 MPa 2600 MPa
Flexural Strength The flexural strength of a material is defined as its ability to resist deformation under load.	23°C 120°C 160°C	ISO 178 ISO 178 ISO 178	235 MPa 80 MPa 75 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 (-30°C)	ISO 179/1eA ISO 179/1eA	6 kJ m^2 6 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 (-30°C)	ISO 179/1eU ISO 179/1eU	50 kJ m^2 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 (-40°C)	ISO 180/A ISO 180/A	6 kJ m^2 6 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.	-	-	-
Thermal Data			
Melting Point The temperature at which the plastic melts from solid to liquid form.	-	ISO 11357-1/-3	295°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.	Parallel Normal	ISO 11359-1/-2 ISO 11359-1/-2	0.5 E-4/°C 0.8 E-4/°C