KB DELTA
COMPRESSOR VALVE PARTS

# MATERIAL DATA SHEET

**Nylon 4/6 (MT) – TW200F6**
**Glass-Fiber 30%**

**Color:** Green

| | Conditions | Test Method | Value |
|---|---|---|---|
| **Physical Properties** | | | |
| **Density/Specific Gravity**<br>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. | - | ASTM D792 | 1.41 |
| **Water Absorption**<br>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 | ASTM D570 | 1.50% |
| **Shore D Hardness**<br>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. | 73°F | ASTM D2240 | 89 |
| **Mechanical Properties** | | | |
| **Tensile Modulus**<br>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. | 73°F | ASTM D638 | 1.3E6 psi |
| **Tensile Strength @ Break**<br>The force per unit area (MPa or psi) required to break a material in such a manner. | 73°F | ASTM D638 | 30000 psi |
| **Tensile Strain @ Break (Elongation)**<br>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. | 73°F | ASTM D638 | 4.00% |
| **Flexural Modulus**<br>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. | 73°F | ASTM D790 | 1.2E6 psi |
| **Flexural Strength**<br>The flexural strength of a material is defined as its ability to resist deformation under load. | 73°F | ASTM D790 | 43000 psi |
| **Charpy Notched Impact Strength**<br>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. | - | - | - |

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| **Charpy Unnotched Impact Strength**<br>Used to determine the toughness. A standardized high strain-rate impact test which determines the amount of energy absorbed by a material during fracture. | - | - | - |
| **Izod Notched Impact Strength**<br>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. | 73°F<br>(-40°F) | ATSM D256<br>ATSM D256 | 2 ft-lb/in<br>1.87 ft-lb/in |
| **Izod Unnotched Impact Strength**<br>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**<br>The temperature at which the plastic melts from solid to liquid form. | - | - | 563°F |
| **Coefficient of Thermal Expansion**<br>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. | CLTE, Flow | ATSM D696 | 4.1E-005 in/in/ °F |