

Properties of Thermoplastic Valve Materials

Operating Temperature Range

Name of Material		Nylon	MT	PEEK	Carbon-PEEK
Material Description		Nylon 6/6 Glass Filled	Nylon 4/6 Glass Filled	PEEK Glass Filled	PEEK Carbon Filled
Operating Temperature	Minimum	-50°C (-50°F)	-50°C (-50°F)	-50°C (-50°F)	-50°C (-50°F)
	Maximum	120°C (250°F)	170°C (340°F)	250°C (480°F)	250°C (480°F)

Other Thermal & Mechanical Properties

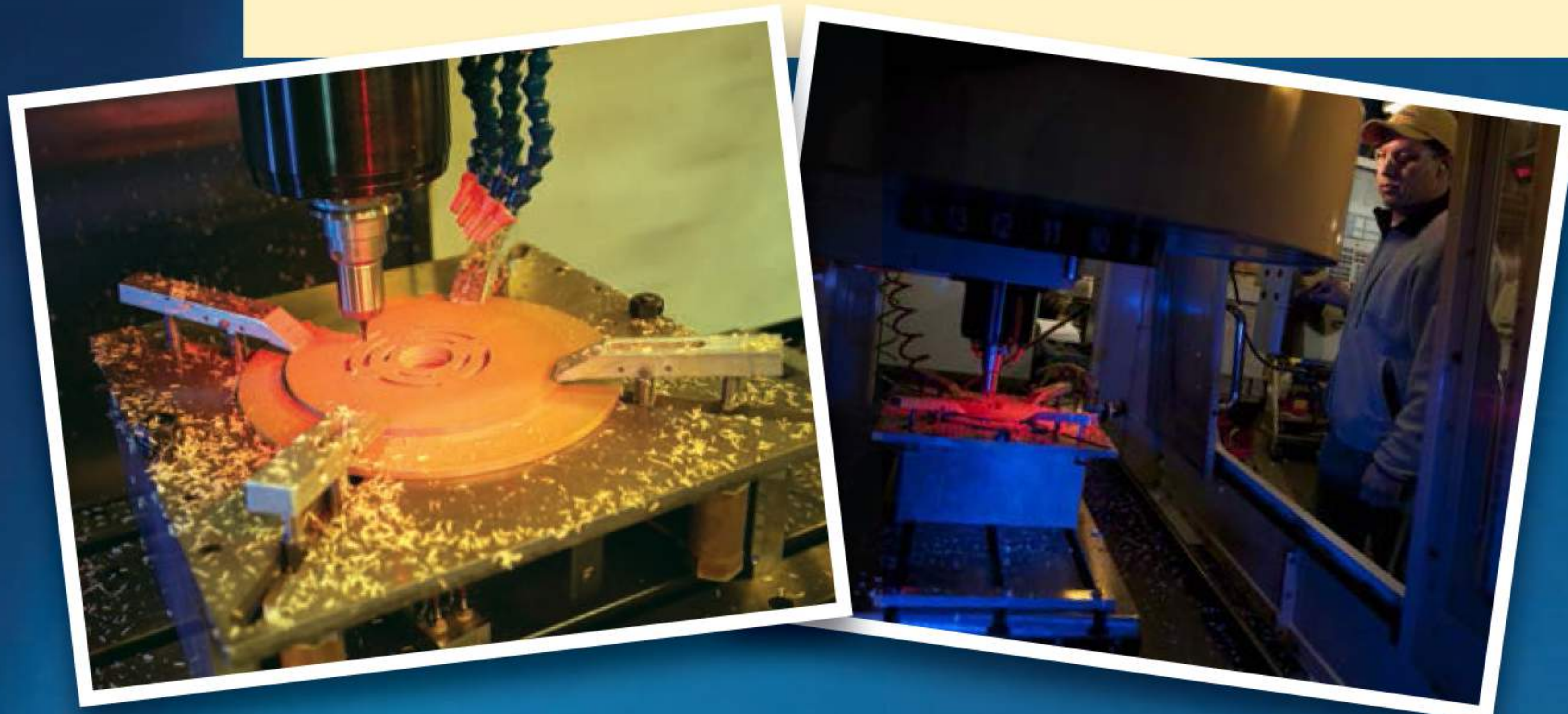
*Property	Test Method	Nylon	MT	PEEK	Carbon-PEEK
Melt Temperature	n/a	265°C (509°F)	295°C (563°F)	343°C (649°F)	343°C (649°F)
Heat Deflection Temperature	ISO 75	253°C @ 1.8 MPa	290°C @ 1.8 MPa	328°C @ 1.8 MPa	336°C @ 1.8 MPa
Stress at Break dry @ 20°C	ISO 527	196 MPa	210 MPa	180 MPa	240 MPa
Strain at Break dry @ 20°C	ISO 527	3.0%	4.0%	2.7%	1.7%
Water Absorption @ 24 Hours	ASTM D570	0.90%	1.50%	0.12%	0.04%

*Properties listed are for comparison purposes only. Material selection depends on many factors including environment and operating temperatures.

Chemical Resistance

Medium	State	Nylon	MT	PEEK	PEEK-CA
Natural Gas	Gaseous	●	●	●	●
Hydrogen Sulphide (H2S)	Gaseous	●	●	●	●
	Humid	○	○	●	●
Carbon Dioxide	Gaseous	●	●	●	●
Nitrogen	Gaseous	●	●	●	●
Air (Temperature Limitation)	Gaseous	○	○	○	●
Hydrogen	Gaseous	●	●	●	●
Ammonia	Gaseous	●	●	●	●
Hydrocarbons	Gaseous	●	●	●	●
	Liquid	●	●	●	●
Carbonic Acid	Gaseous	●	●	●	●
	Aqueous Sol.	●	●	●	●
Hydrosulphuric Acid	Gaseous	●	●	●	●
	Aqueous Sol.	○	○	●	●
Condensate	Acidic	●	●	●	●
	Base	●	●	●	●
Refrigerant (R22, R134A)	Gaseous	●	●	●	●
*Chlorine	Gaseous	●	●	●	○

*Carbon filled PEEK recommended when chlorine is present ● resistant ● not resistant ○ limited resistance
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