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Polypropylene

Polypropylene is a semi-crystalline, thermoplastic engineering material with high toughness and good chemical resistance.

Polypropylene's main characteristics are:

- Tough
- Very low water absorption
- Resistant to dilute acids, cleaning agents, numerous solvents
- Very good electrical insulation
- Difficult to bond
- Easily welded
- Low density
- Becomes brittle at low temperatures

The preferred fields for the use of TECAFINE PP are; mechanical engineering, transport and conveyor technology, electrical engineering, general engineering, household appliances, plant construction, food industry, and chemical industry.

Popular applications for this product are:

- Chemical apparatus
- Water treatment plants
- Seals
- Food processing industry
- Insulators
- Ventilation ducts
- Pallets
- Drip pans

Polypropylene also offers good thermal and electrical insulation and is also resistant to many acid, alkalis and organic solvents making it an ideal choice for fabrication jobs in chemical and effluent treatment plants.

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Technical Information

Information to be used as a guide only. It corresponds with our current knowledge and indicates possible applications. We cannot guarantee suitability for a specific application. Unless otherwise stated these values represent averages taken from injection moulded samples.

Properties	Unit	Test Method DIN ASTM	Result
Mechanical	-	-	-
Density	g/cm³	53479	0.95 - 0.96
Tensile strength at yield	MPa	53455	24-31
Tensile strength at break	MPa	53455	36
Elongation at Break	%	53455	400-800
Modulus of elasticity in tension	MPa	53457	1000-1400
Modulus of elasticity in flexure	MPa	53457	1000-1400
Ball indentation hardness	MPa	53456	45-60
Impact strength (Charpy)	KJ/m²	53453	no break
Creep rupture strength after 1000 hours with static load	MPa	-	12.5
Time yield limit for 1% elongation after 1000 hours	MPa	-	3
Coefficient of friction against hardened and ground steel p+0,05 N/mm2, v=0,6 m/s	-	-	0.29
Wear conditions as above	µm/km	-	-
Thermal	-	-	-
Crystalline melting point	°C	53736	-128-133
Glass transition temperature	°C	53736	-95
Heat distortion temperature method A	°C	ISO 75	42-49
Heat distortion temperature method B	°C	ISO 75	70-85
Max. service temperature short term	°C	-	120
Max. service temperature long term	°C	-	90
Coefficient of thermal conductivity	W/(m K)	-	0.35-0.43
Specific heat	J/(g K)	-	1.7 - 2
Coefficient of thermal expansion	10-5/K	-	13 - 15
Electrical	-	-	-
Dielectric constant at 10 (5) Hz	-	53483	2.4
Dielectric loss factor at 10(5) Hz	-	53483	0.0002
Specific Volume Resistance	Ωcm	53482	>10 (16)
Surface Resistance	O	53482	>10 (14)
Dielectric strength 1mm	kV/mm	53481	>50
Tracking resistance	-	53480	KA3c
Miscellaneous	-	-	-
Moisture Absorption: Equilibrium in standard atmosphere (23°C / 50% relative humidity)	%	53714	
Water absorption at saturation at 23°C	%	53495	0.02
Resistance to hot water, washing soda	-	-	resistant
Flammability	-	UL 94	HB
Resistance to weathering	-	-	Natural: not resistant Black: resistance