

Polypropylene: Product Information



About

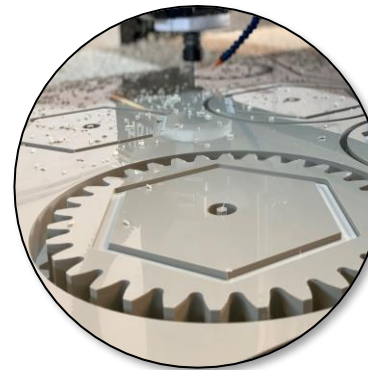
Polypropylene (PP) is a widely used thermoplastic polymer known for its versatility, affordability, and excellent chemical and physical properties. It belongs to the polyolefin group and is produced through the polymerization of propylene monomers.

Properties

- 1.High Impact Resistance:** Polypropylene is known for its toughness and durability. It has good impact resistance, which makes it suitable for applications where strength and resilience are required.
- 2.Chemical Resistance:** PP exhibits excellent resistance to many chemicals, acids, and bases. It is largely inert to water and has good resistance to solvents, making it suitable for use in environments where chemical exposure is a concern.
- 3.Lightweight:** Polypropylene is a lightweight material, which contributes to its ease of handling and versatility in various applications.
- 4.Low Moisture Absorption:** PP has low moisture absorption compared to other polymers, which helps maintain its dimensional stability in humid conditions.
- 5.Low density -** compared with other engineering plastics. Minimal absorption of moisture.
- 6.Product may be used in contact with foodstuffs**
- 7.Good tensile strength and high surface hardness**
- 8.PP-H may be hot air welded**

Applications

Food or corrosive storage vessels, cooling or scrubbing towers, pipe flanges, tanks and tank linings for chemical storage, electroplating barrels, fume cupboards, pump bodies, water treatment, plating tanks and hoods. Nipples, reducers, plugs and bolts and nuts.



Polypropylene: Data Sheet



General

PROPERTIES	TEST METHOD	UNIT Of MEASURE	Value
DENISTY	DIN EN ISO 1183-1	g/cm ³	0,96
WATER ABSORPTION	DIN EN ISO 62	%	< 0,01
FLAMABILITY 3mm	UL 94	3mm	B2
FLAMABILITY 6mm	UL 94	6mm	HB

Mechanical

TENSILE STRENGTH	DIN EN ISO 527	MPA	27
ELONGATION AT BREAK	DIN EN ISO 527	%	>50
E MODULUS	DIN EN ISO 527	MPA	1200
NOTCHED IMPACT STRENGTH	DIN EN ISO 179	kJ/m ²	N/A
BALL INDENTATION HARDNESS	DIN EN ISO 2039-1	MPA	N/A
SHORE HARDNESS	DIN EN ISO 868	SCALE D	65

Thermal

MELTING TEMPERATURE	ISO 11357-3	°C	135
THERMAL CONDUCTIVITY	DIN 52612-2	W/(m.K)	0,40
SPECIFIC THERMAL CAPACITY	DIN 52612	kJ/(kg.K)	1,9
COEFFICIENT OF LINEAR THERMAL EXPANSION	DIN 53752	10 ⁻⁶ K ⁻¹	150...230
LONG TERM SERVICE TEMPERATURE	GUIDELINE ONLY	°C	-100...80
SHORT TERM SERVICE TEMPERATURE	GUIDELINE ONLY	°C	100
HEAT DEFLECTION TEMPERATURE	DIN EN ISO 75.VERF.A	°C	79

Electrical

DIELECTRIC CONSTANT	IEC 60250	N/A	2,3
DIELECTRIC DISSIPATION FACTOR	IEC 60250	N/A	2,10 ⁻⁴
SPECIFIC VOLUME RESISTIVITY	IEC 60093	Ω.cm	>10 ¹⁴
SURFACE RESISTIVITY	IEC 60093	Ω	>10 ¹⁴
DIELECTRIC STRENGTH	IEC 60243	kV/mm	45

STOCK SHAPES | MACHINED PARTS AND COMPONENTS | APPLICATIONS DEVELOPMENT

Machining

When machining thermoplastic stock shapes, remember...

- Positive tool geometries with ground peripheries are recommended.
- HSS/Tip tooling with polished top surfaces is suggested for optimum tool life and surface finish.
- Use adequate chip clearance to prevent clogging.
- Adequately support the material to restrict deflection away from the cutting tool.

General

Coolants are generally not required for most machining operations, but are strongly suggested during drilling operations, especially with notch sensitive materials such as Nylon, PET-P, PAI, PBI and glass or carbon reinforced products.

In addition to minimizing localized part heat-up, coolants prolong tool life. For optimum surface finishes and close tolerances, nonaromatic, water-soluble coolants are suggested. General purpose petroleum-based cutting fluids, although suitable for many metals and plastics, may contribute to stress cracking of amorphous plastics such as Polycarbonate.

Due to these differences, you may wish to experiment with fixtures, tool materials, angles, speeds and feed rates to obtain optimum results.

General Note

The data shown fall within the normal parameters of product properties. They should only be used as a guide to initial material selection for the relevant application and for material specification limits. Further technical information is available for specific application requirements. When no value is listed, insufficient details were available to present a usable value.



THE RIGHT APPLICATION IS KEY

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and application design.**



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