

**Technical Data: PP (Polypropylene)**

**Product Description**

**Define and Grades**

Injection-molded PP grades differ in properties: Homopolymer offers stiffness, Copolymer adds impact resistance, Random Copolymer offers transparency, Glass-Filled enhances strength, and UV-stabilized PP resists UV degradation, catering to various applications across industries.

Neway utilizes various grades of injection-molded PP (Polypropylene), including:

- PP Homopolymer (General-Purpose PP)
- PP Copolymer (Impact-Modified PP)
- PP Random Copolymer (Transparent PP)
- PP Glass-Filled (Enhanced Strength PP)
- PP Homopolymer with UV Stabilization (Outdoor Use PP)



**Features and Applications**

Grade	Features	Applications
PP Homopolymer	- Stiffness - High chemical resistance - Cost-effective	Automotive parts, containers, packaging, toys
PP Copolymer	- Impact resistance - Good flexibility - Versatility	Automotive bumpers, appliance components, sports equipment
PP Random Copolymer	- Transparency - Good impact resistance - Versatility	Food packaging, clear containers, medical components
PP Glass-Filled	- Enhanced strength - Stiffness - Dimensional stability	Automotive interiors, industrial parts, structural uses
PP Homopolymer with UV Stabilization	- UV resistance - Stiffness - Weather resistance	Outdoor furniture, garden equipment, automotive exterior

**Physical and Mechanical**

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm <sup>3</sup> )	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(°C)	(%)	(HRB)
PP Homopolymer	0.91	35	300	2.2	45	60	100	2	95
PP Copolymer	0.91	35	600	2.2	45	100	100	2	95
PP Random Copolymer	0.91	40	300	2.5	60	70	100	2	95
PP Glass-Filled	1.35	100	3.5	11	170	100	150	0.8	110
PP Homopolymer with UV	0.91	35	300	2.2	45	60	100	2	95

**Note**

The above data are reference material science data. This data reference is not binding and is not considered as authoritative test data. If your material requirements are extremely precise, please contact our material engineers. Tel | +86 18926788217 | Web | [www.newayprecision.com](http://www.newayprecision.com) | Contact Neway



# PP Injection Molding

Polypropylene

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### Benefits of Material Grades

#### PP Homopolymer (General-Purpose PP)

PP homopolymer is a versatile and cost-effective thermoplastic. Its fundamental properties include a density of  $0.91 \text{ g/cm}^3$ , a tensile strength of 35 MPa, and a heat deflection temperature of  $100^\circ\text{C}$ . It exhibits good chemical resistance and is relatively stiff.

PP homopolymer is commonly used for various general-purpose applications, such as automotive parts, containers, packaging, and toys.



#### PP Copolymer (Impact-Modified PP)



PP copolymer is known for its impact resistance and versatility. It offers flexibility and durability with a density of  $0.91 \text{ g/cm}^3$  and a tensile strength of 35 MPa.

This material is often used in automotive bumpers, appliance components, and sports equipment. PP copolymer's ability to withstand mechanical stress while maintaining its shape.

#### PP Random Copolymer (Transparent PP)

PP random copolymer is valued for its transparency and versatility. It typically has a density of  $0.91 \text{ g/cm}^3$ , a tensile strength of 40 MPa, and a heat deflection temperature of  $100^\circ\text{C}$ .

Its unique properties, including transparency and good impact resistance, make it ideal for applications requiring transparent materials. Typical uses include food packaging, clear containers, and medical components where visibility or aesthetics are important.



#### PP Glass-Filled (Enhanced Strength PP)



PP glass-filled is reinforced with glass fibers to enhance its strength and stiffness. It has a higher density ranging from  $1.02$  to  $1.35 \text{ g/cm}^3$  and a tensile strength of 100 MPa or more.

This grade excels in applications that demand enhanced mechanical properties, such as automotive interiors, industrial parts, and structural components. Its dimensional stability and resistance to wear make it suitable for parts subjected to high stress and load-bearing requirements.

#### PP Homopolymer with UV Stabilization (Outdoor Use PP)

PP homopolymer with UV stabilization is engineered to withstand outdoor conditions. It shares properties with general-purpose PP, such as a density of  $0.91 \text{ g/cm}^3$  and a tensile strength of 35 MPa, but it includes UV stabilizers to resist UV degradation.

This makes it suitable for outdoor applications like garden equipment, outdoor furniture, and automotive exterior components. Its ability to endure prolonged exposure to sunlight and environmental factors ensures long-lasting performance in outdoor settings.



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