PS Injection Molding

Polystyrene

NEWAY PRECISION WORKS

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Technical Data: PS (Polystyrene)

Product Description

Define and Grades

Injection-molded PS (Polystyrene) is a thermoplastic material commonly used in plastic injection molding. It offers clarity, rigidity, and affordability, making it suitable for various consumer products, packaging, and industrial components.

Common PS Grade Neway Used In Injection Molding
- General-Purpose PS
- High-impact PS (HIPS)
- Crystal PS (CPS)
- High Heat PS (HHPS)
- Flame-Retardant PS (FRPS)

Features and Applications

Grade	Features	Applications
General-Purpose PS	- Good clarity - Rigidity - Affordability	Packaging, disposable utensils, consumer goods
High-impact PS (HIPS)	- Enhanced impact resistance - Good rigidity - Moderate cost	Toys, automotive parts, refrigerator interiors
Crystal PS (CPS)	- Exceptional clarity - Optical quality - Brittle	Optical lenses, CD jewel cases, clear packaging
High Heat PS (HHPS)	- Enhanced heat resistance - Retains clarity - Higher cost	Microwave-safe containers, food service trays
Flame-Retardant PS (FRPS)	- Flame resistance - Low smoke emissions - Electrical insulating properties	Electrical enclosures, automotive interiors, safety equipment

Physical and Mechanical

Property	Density	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact Strength	Heat Deflection Temp.	Shrinkage	Hardness
Units	(g/cm³)	(Mpa)	(%)	(MPa)	(MPa)	(J/m)	(℃)	(%)	(HRB)
General-Purpose PS	1.04	30	1.5	2.1	50	30	70	0.6	65
High-Impact PS (HIPS)	1.04	40	10	2.3	65	200	75	0.5	70
Crystal PS (CPS)	1.05	40	2	2	55	15	75	0.7	60
High Heat PS (HHPS)	1.05	30	2	1.9	45	20	95	0.5	65
Flame-Retardant PS	1.06	35	1.8	2.2	60	35	80	0.4	70

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 | Contact Neway

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Benefits of Material Grades

General-Purpose PS

Key Properties: General-purpose PS is known for its affordability and good clarity. It has a density of approximately 1.04 g/cm³ and offers modest tensile strength and impact resistance. It is relatively rigid and exhibits low heat resistance.

Applications: This grade of PS is commonly used for packaging materials, disposable utensils, consumer goods like toys, and applications where transparency is not a primary concern.

High-Impact PS (HIPS)

Key Properties: High-impact PS, or HIPS, is engineered for enhanced impact resistance. It has a similar density to general-purpose PS but offers significantly better impact strength and moderate rigidity. It is cost-effective.

Applications: HIPS is widely used in applications where impact resistance is crucial, such as toys, automotive parts, and refrigerator interiors. Its affordability and balance of properties make it a popular choice.

Crystal PS (CPS)

Key Properties: Crystal PS, or CPS, is characterized by exceptional clarity and optical quality. It has a density of approximately 1.05 g/cm³ but is brittle and lacks impact resistance.

Applications: CPS is employed in applications where optical clarity is paramount, such as optical lenses, CD jewel cases, transparent packaging materials, and applications where aesthetics and transparency are essential.

High Heat PS (HHPS)

Key Properties: High heat PS, or HHPS, offers improved heat resistance compared to general-purpose PS. It has a density of approximately 1.05 g/cm³ and retains clarity at elevated temperatures. It is relatively rigid.

Applications: HHPS is suitable for applications requiring heat resistance, such as microwave-safe containers, food service trays, and products exposed to moderate heat.

Flame-Retardant PS (FRPS)

Key Properties: Flame-retardant PS, or FRPS, is designed to resist combustion and emit low levels of smoke. It exhibits good electrical insulating properties. Its density is around 1.06 g/cm³.

Applications: FRPS is used in applications where fire safety is critical, such as electrical enclosures, automotive interiors, safety equipment, and any application where compliance with fire safety standards is required.

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