Injection Molding Thermoplastic

Plastic Injection Molding Materials

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Technical Data:

Product Description

Injection molding thermoplastic is divided into commodity thermoplastics: Polyethylene (PE), polyvinyl chloride (PVC), polypropylene (PP), polystyrene (PS), acrylonitrile-butadiene-styrene (ABS). Engineering thermoplastic: Nylon (Nylon), Polycarbonate (PC), Polyurethane (PU), Polyethylene Terephthalate (PET), Polyoxymethylene (POM). And high-temperature thermoplastic: Polyether Ether Ketone (PEEK), Polyimide (PI), Polyetherimide (PEI). They have different properties, and their injection-molded parts are used in many industries.

Features and Applications

Grade	Features	Applications
Commodity Thermoplastics		
Polyethylene (PE)	Lightweight, chemical resistance, ease of processing	Packaging, containers, pipes, toys
Polyvinyl Chloride (PVC)	Chemical resistance, electrical insulation	Pipes, cables, window frames, medical tubing
Polypropylene (PP)	Lightweight, chemical resistance, low moisture absorption	Automotive components, packaging, medical devices
Polystyrene (PS)	Transparency, electrical insulation	Disposable cutlery, packaging, consumer electronics
Acrylonitrile-Butadiene-Styrene (ABS)	Impact resistance, surface finish, easy bonding	Automotive parts, consumer goods, electronics casings
Engineering Thermoplastics		
Nylon	High strength, wear resistance, impact resistance	Gears, bearings, automotive parts
Polycarbonate (PC)	Impact resistance, optical clarity, dimensional stability	Safety goggles, automotive headlamps, electronics housings
Polyurethane (PU)	Flexibility, abrasion resistance, wide hardness range	Seals, gaskets, footwear, flexible parts
Polyethylene Terephthalate (PET)	Mechanical strength, dimensional stability	Beverage bottles, packaging, electrical components
Polyoxymethylene (POM)	Low friction, high stiffness, dimensional stability	Gears, bearings, mechanical components
High-Temperature Plastics		
Polyether Ether Ketone (PEEK)	High temperature resistance, chemical resistance	Aerospace components, medical implants, automotive parts
Polyimide (PI)	Thermal stability, low thermal expansion	Aerospace components, electronics, high-temperature gaskets
Polyetherimide (PEI)	High strength, high-temperature resistance	Aerospace components, electrical connectors, medical instruments
Specialty Plastics		
Polyphenylene Sulfide (PPS)	Chemical resistance, high temperature stability	Automotive components, electrical connectors, industrial parts
Liquid Crystal Polymers (LCP)	Chemical resistance, low moisture absorption	Connectors, electrical components, microelectronics
Polytetrafluoroethylene (PTFE)	Chemical resistance, low friction	Seals, gaskets, bearings, non-stick cookware

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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Physical and Mechanical

Material	Tensile Strength	Tensile Elongation	Flexural Modulus	Flexural Strength	Izod Impact	Heat Deflection Temp	Melt Flow Rate	Shrinkage	Density
	(MPa)	(%)	(GPa)	(MPa)	(J/m)	(°C)	(g/10 min)	(in/in)	(g/cm3)
Commodity Thermoplastics									
PE	26	500	0.7	18	50	65	2	0.02	0.96
PVC	56	50	3	68	15	70	15	0.04	1.4
PP	36	400	1.3	32	60	115	12	0.015	0.9
PS	50	2	2.5	60	40	90	15	0.5	1.05
ABS	40	35	2.5	60	400	90	20	0.5	1.05
Engineering Thermoplastics									
Nylon	85	150	1.7	95	75	80	40	0.8	1.14
PC	65	50	2.3	100	800	145	25	0.6	1.2
PU	50	300	1.3	50	-	60	40	1	1.2
PET	60	150	2	95	50	90	15	0.35	1.35
POM	70	150	2.4	85	-	100	15	2	1.41
High-Temperature Plastics									
PEEK	90	40	4.5	130	-	325	20	0.4	1.32
PI	80	100	3	140	-	275	30	0.25	1.44
PEI	85	75	2.5	165	-	210	20	0.2	1.27
Specialty Plastics									
PPS	75	5	3.5	100	-	105	500	0.01	1.35
LCP	100	3	25	100	-	300	30	0.5	1.4
PTFE	25	300	0.5	20	-	95	200	2	2.2

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