

MATERIAL	HIGHLIGHTS	COMMON APPLICATIONS	MASS DENSITY (g/cm ³)	SHRINKAGE (in/in)	CLARITY	TONNAGE PER SQUARE INCH (Estimated)	COST
ABS Acrylonitrile Butadiene Styrene	Flame retardant; impact resistant	Automotive; medical; electrical; appliances; toys	1.02-1.05	0.005	Translucent	2.5-3.5	\$
ASA Acrylonitrile Styrene Acrylate	Toughness; chemical, heat and weather/UV resistant	Automotive; outdoor applications; electrical	1.07	0.004-0.007	Opaque	2.5-3.5	\$\$
EVA Ethylene-Vinyl Acetate	Softness; flexibility; clarity; gloss	Sporting goods; medical; foam; rubber replacement	0.92-0.97	0.007-0.020	Transparent	2.0-3.0	\$
HDPE High Density Polyethylene	Rigidity; moisture resistant; food contact	Packaging; food; industrial	0.935-0.96	0.025-0.035	Opaque	2.5-3.5	\$
HIPS High Impact Polystyrene	Impact resistant; flame retardant; food contact	Toys; product casings	1.04	0.003-0.007	Translucent	2.0-2.5	\$
LDPE Low Density Polyethylene	Chemical resistant; flexibility; toughness; gloss	Food; packaging	0.91-0.925	0.015-0.026	Translucent or Opaque	2.0-3.0	\$
LLDPE Linear Low Density Polyethylene	High tensile strength; high impact resistance; flexibility	Bags; packaging; toys; covers; lids; containers	0.918-0.94	0.015-0.035	Translucent	2.0-3.0	\$
PA6 Polyamide 6 (Nylon 6)	Heat and chemical resistant; impact modified	Automotive; electrical; industrial; consumer; engineering	1.13	0.009-0.012	Opaque	3.0-4.0	\$\$
PA66 Polyamide 66 (Nylon 66)	Heat and chemical resistant; impact modified	Automotive; electrical; industrial; consumer; engineering	1.14	0.015-0.020	Opaque	3.0-4.0	\$\$
PA66 30%GF 30% Glass Filled Polyamide (Nylon 66)	High rigidity, hardness and strength; high stability	Automotive; engineering; gears; cams; bearings; electrical; metal substitute	1.22-1.49	0.003-0.008	Opaque	4.0-5.0	\$\$
PBT Polybutylene Terephthalate (Polyester) [Valox]	Chemical and heat resistant; mechanical strength	Electrical; automotive; showerheads; irons	1.31	0.012-0.023	Opaque	3.0-4.0	\$\$
PC Polycarbonate [Lexan]	High impact strength; clarity; flame retardant	Electrical; lighting; automotive; appliances; medical	1.20	0.005-0.007	Transparent	4.0-5.0	\$\$
PC+ABS Polycarbonate + ABS [Cycoloy]	Toughness; dimensional stability; low moisture absorption	Appliances; automotive; electrical; consumer; medical	1.08-1.22	0.005-0.007	Opaque	3.0-4.0	\$\$
PEEK Polyether Ether Ketone	Mechanical and chemical resistance	Bearings; piston parts; aerospace; automotive; medical; chemical processing	1.30-1.50	0.010-0.020	Opaque	5.0	\$\$\$
PEI Polyetherimide [Utem]	High tensile strength; flame retardant; chemical resistant	Electrical; aerospace; medical; lighting; appliances	1.27	0.006	Translucent	4.0-6.0	\$\$\$
PET Polyethylene Terephthalate [Dacron]	Lightweight; moisture barrier; strength; impact resistant	Bottles; food packaging	1.44-1.73	0.002	Transparent	4.0-5.0	\$\$
PMMA Polymethyl Methacrylate (Acrylic)	High clarity; weather, heat and chemical resistant	Glass substitute; automotive; lighting; medical; lenses; optics	1.19	0.002-0.006	Transparent	3.0-4.0	\$
POM Polyoxymethylene (Acetal) [Celcon; Delrin]	Lubricated; wear and chemical resistant; stiffness	Automotive; industrial; mechanical; electrical	1.41-1.42	0.018-0.035	Opaque	3.0-4.0	\$\$
PP (Copolymer) Polypropylene Copolymer	Impact resistant; lightness; food contact	Automotive; household; electrical; packaging	0.90	0.010-0.025	Opaque	2.5-3.5	\$
PP (Homopolymer) Polypropylene Homopolymer	Impact resistant; lightness; food contact	Automotive; household; electrical; packaging	0.902	0.010-0.025	Translucent	2.5-3.5	\$
PPE Polyphenylene Ether	Electrical properties; flame retardant; chemical resistant; low moisture absorption	Electrical; appliances; construction; automotive	1.13	0.006	Translucent	3.0-4.0	\$\$
PPS Polyphenylene Sulfide [Ryton]	Chemical and fire resistance; thermal and dimensional stability	Automotive; electrical; industrial; appliances	1.40-2.00	0.003-0.010	Opaque	3.5-4.5	\$\$
PS Polystyrene (GPPS)	Impact resistant; flame retardant; food contact	Packaging; electrical; toys; appliances	1.05	0.003-0.007	Transparent	2.0-2.5	\$
PVC Polyvinyl Chloride	Flame retardant; high impact resistance	Industrial; electronic	1.22	0.002	Opaque	2.0-3.0	\$
SAN Styrene Acrylonitrile	Chemical and heat resistance; clarity	Electrical; appliances; automotive	1.06	0.002-0.005	Transparent	2.5-3.5	\$\$
TPE Thermoplastic Elastomer	Elasticity; chemical and weather resistant	Rubber substitute; automotive; seals; overmolding	0.87-1.20	0.017-0.047	Translucent	2.5-3.5	\$\$
TPU Thermoplastic Polyurethane	Range of hardness grades; abrasion and chemical resistant	Footwear; sporting goods; wheels; seals	1.01-1.23	0.012-0.017	Transparent	3.0-4.0	\$\$
TPV Thermoplastic Vulcanizate [Santoprene]	Strength; flexibility; lightweight	Automotive; appliances; electrical; construction; healthcare; industrial	0.92-0.97	0.010-0.050	Transparent	2.5-3.5	\$\$

Clarity: Opaque = No light passes through; Transparent = Some light passes through; Translucent = Light passes through

DISCLAIMERS: The information provided herein is general in nature and is based upon averages, nominal ranges, estimates, non-specified grades of materials in their natural form, and readily available public information. Accordingly, this guide should be used only as a handy comparison of materials and as a starting point for conducting research, and users must perform their own studies and testing of materials. ALL WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE OR USE, ARE EXCLUDED AND DISCLAIMED. Without limiting the generality of the foregoing, Precision Molded Plastics, Inc. assumes no responsibility or liability of any kind for this guide or for the information contained herein.