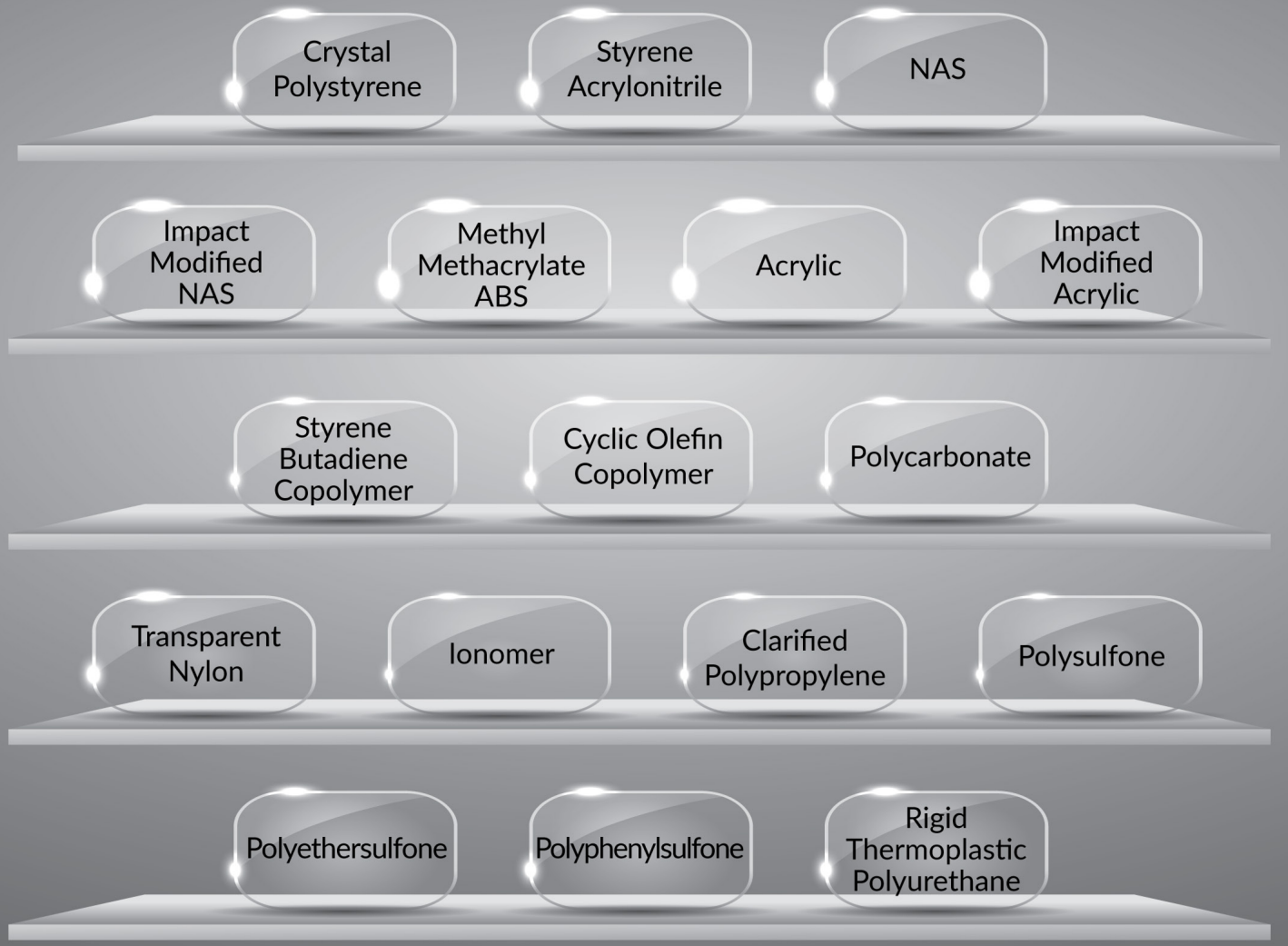
TRANSPARENT POLYMERS COMPARISON



TRANSPARENT POLYMERS COMPARISON

Transparent polymers can be found in many different markets including lighting, automotive, sporting goods, consumer products, healthcare, E/E, building & construction and packaging. Which transparent polymer to select for your specific application can be challenging because of the wide variety of choices. The table below summarizes several properties for a variety of common transparent polymers. This table can serve as a aid in comparing and selecting the most appropriate transparent polymer family for your application. Once the specific polymer family, or families, are selected then a review of the various grades can be conducted in order to select the most appropriate grade that will meet the requirements for optical properties, mechanical properties, and other characteristics. For assistance in selecting the best transparent polymer for your application please contact your Entec Polymers Account Representative.

POLYMER TYPE	ACRONYM	LIGHT TRANSMISSION (%)	HAZE (%)	DENSITY (g/cm3)	TENSILE STRENGTH (psi)	FLEX MODULUS (psi)	NOTCHED IZOD (ft-lb/in	HDT @ 66 PSI (°F)	HDT @264 PSI (°F)	UV RESISTANCE	SCRATCH RESISTANCE	ESCR
Crystal Polystyrene	GPPS	87 - 92	0.1 - 3	1.04	5,100 - 7,800	460,000 - 490,000	0.4	192 - 208	171 - 193	Poor	Poor	Poor
Styrene Acrylonitrile	SAN	88 - 90	0.7 - 2	1.07	9,000 - 11,000	500,000 - 520,000	0.4 - 0.45	221 - 239	200 - 205	Poor	Excellent	Good
NAS	SMMA	91 - 93	0.3	1.07 - 1.11	8,100 - 9,300	450,000 - 490,000	0.4	189 - 194	176 - 207	Poor	Good	Fair
Impact Modified NAS	SMMA	90 - 91	1.5 - 1.8	1.04 - 1.05	3,000 - 5,200	225,000 - 330,000	1 - 11	169 - 185	172 - 198	Poor	Fair	Good
Methyl Methacrylate ABS	MABS	90	<3	1.08	4,200 - 4,600	268,000 - 277,000	1.2 - 1.4	199 - 201	188 - 205	Poor	Fair	Good
Acrylic	PMMA	92	<1	1.19	7,800 - 10,500	408,000 - 530,000	0.3	176 - 230	163 - 220	Excellent	Excellent	Poor
Impact Modified Acrylic	iPMMA	90.7 - 91.6	<3	1.15 - 1.17	6,100 - 8,500	255,000 - 472,000	0.6 - 1.2	167 - 212	164 - 190	Fair	Good	Poor
Styrene Butadiene Copolymer	SBC	90 - 93	<1.5	1.01 - 1.02	2,300 - 4,900	110,000 - 260,000	0.4 - No Break	152 - 177	114 - 158	Poor	Poor	Good
Cyclic Olefin Copolymer	COC	91	<2	1.02	6,700 - 9,100	377,000 - 464,000	0.3 - 0.5	167 - 338	---	Poor	Fair	Poor
Polycarbonate	PC	89	<1	1.20	9,200 - 10,200	285,000 - 335,000	12 - 19	---	260 - 275	Good	Fair	Poor
Transparent Nylon	TR Nylon	90	<1	1 - 1.06	8,700 - 10,900	232,000 - 319,00	1.5 - 2.5	275 - 356	239 - 266	Fair	Good	Good
Ionomer	Ionomer	<90	1.3 - 12	0.94 - 0.97	2,700 - 5,400	4,500 - 75,000	7 - No Break	---	---	Poor	Fair	Good
Clarified Polypropylene	cPP	85 - 90	9 - 11	0.9	3,500 - 4,200	140,000 - 165,000	0.9 - 3	160 - 200	--	Poor	Poor	Good
Polysulfone	PSU	85	1.5 - 2.5	1.23	11,000	370,000	1 - 1.2	---	350	Fair	Good	Fair
Polyethersulfone	PES	72 - 80	4 - 6	1.37	12,300	384,000	1.2 - 1.5	---	397 - 405	Fair	Good	Fair
Polyphenylsulfone	PPSU	74 - 80	3.1 - 5.1	1.29	10,700	325,000 - 330,000	9.5 - 10.5	---	380 - 390	Fair	Good	Fair
Rigid Thermoplastic Polyurethane	RTPU	88 - 92	<2	1.19 - 1.21	7,000 - 12,000	261,000 - 304,500	1 - 2	160 - 270	140 - 240	Poor	Good	Good