



“Large enough to handle your requirements,
Small enough to handle your needs...”

PLASTIC MATERIALS PROPERTY AND PERFORMANCE SUMMARY

PHYSICAL PROPERTIES	TEST METHOD	UNIT	ABS	PETG	HIPS	HDPE	PP HOMO POLYMER	PP CO POLYMER	TUFF-X
Specific Gravity	ASTM D-792		1.02-1.10	1.27	1.03-1.08	0.94-0.97	0.90	0.90	1.07
Tensile Modulus 73° F	ASTM D-638	psi	1.4-1.6x10 ⁵	2.1x10 ⁵	1.6-3.7x10 ⁵	0.8-2.1x10 ⁵	2.6x10 ⁵	1.5x10 ⁵	2.4x10 ⁵
Tensile Strength @ Yield 73° F	ASTM D-638	psi	2,000-7,800	6,900	2,100-6,000	3,100-4,500	4,300-6,000	2,900-4,500	3100
Tensile Strength Ultimate 73° F	ASTM D-638	psi	1,800-7,000	3,800	1,900-6,200	3,100-5,500	—	—	3100
Elongation Ultimate 73° F	ASTM D-638	%	20-90	210	20-65	200-1000	>100	>300	>275
Flexural Modulus 73° F	ASTM D-790	psi	1.4-3.6x10 ⁵	2.9-3.5x10 ⁵	2.35-3.0x10 ⁵	1.4-2.4x10 ⁵	2.1-2.7x10 ⁵	1.45-2.1x10 ⁵	2.2-5.0x10 ⁵
Flexural Strength @ Yield 73° F	ASTM D-790	Psi	4,000-11,000	10,000-12,000	4,200-7,000	—	6,000-8,000	5,000-7,000	10,000
Izod Impact 73° F	ASTM D-256	ft-lb/in.	1.5-12.0	1.7-2.0	1.0-7.0	4-NB	1.0	6.0-NB	18.5
			1.0-7.5	1.2-1.5	0.5-2.0	1.0-15.0	—	0.5-2.5	3.1
Heat Deflection Temp. 66psi (unannealed)	ASTM D-648	°F	192-202	158	165-200	140-190	200-240	150-200	230
		°F	176-188	145	170-205	100-120	160-180	130-160	140
Coefficient of Thermal Expansion x 10 ⁻⁵	ASTM D-696	in/in/°F	6.0-12.0	4.0-5.1	3.0-5.0	5.0-10.0	6.0-10.0	8.0-9.5	2.7-4.5
Hardness (Rockwell “R”) (Shore “D”)	ASTM D-785		75-105	104	50-82	40-80 60-70	90-100	75-80	80
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Flammability: 0.058”-0.062” 0.125”	UL Subject 94		HB HB	HB V-2	HB HB	HB HB	HB HB	HB HB	HB HB
Gardner Gloss 60°	ASTM-D-253	%	3-100	>80	20-95	10-60	50-95	50-95	15-85
Chemical Resistance To: Oil Gas Solvents			Limited Limited Not Resistant	Resistant Resistant Limited	Not Resistant Not Resistant Not Resistant	Resistant Resistant Resistant	Resistant Resistant Resistant	Resistant Resistant Resistant	Resistant Resistant Resistant
Appearance of Natural Resin: clear or opaque			Opaque	Clear	Opaque	Opaque	Opaque	Opaque	Opaque
Weatherability: Inherently weatherable			N/A	N/A	N/A	N/A	N/A	N/A	Yes
Weatherability when modified			✓	✓	✓	✓	✓	✓	✓

These typical results are based on test procedures, which are believed to be reliable. Due to variable conditions or methods of processing, *NO GUARANTEES ARE EXPRESSED OR IMPLIED INCLUDING THE IMPLIED WARRANTY OF MERCHANTABILITY AND FITNESS FOR PARTICULAR PURPOSES*, nor are any recommendations made to infringe on patents.