

### TYPICAL PROPERTIES OF ACRYLICS

ASTM Test	Property	— MOLDING GRADE —		
		Cast Sheet	Standard	High Impact
PHYSICAL				
D792	<b>Specific gravity</b>	1.19	1.19	1.15-1.17
D792	<b>Specific volume</b> (in <sup>3</sup> /lb)	23.3	23.3	24.1
D570	<b>Water absorption</b> , 24 h, 1/8-in thk (%)	0.2	0.3	0.3
MECHANICAL				
D638	<b>Tensile strength</b> (psi)	10,500	10,500	5,400-7,000
D638	<b>Elongation</b> (%)	5	5	50
D638	<b>Tensile modulus</b> (10 <sup>5</sup> psi)	4.5	4.3	2.2-3.2
D790	<b>Flexural strength</b> (psi)	16,500	16,000	7,000-10,500
D790	<b>Flexural modulus</b> (10 <sup>5</sup> psi)	4.5	4.5	2.3-3.2
D256	<b>Impact strength</b> , Izod (ft-lb/in of notch)	0.4	0.4	0.6-1.2
D785	<b>Hardness</b> , Rockwell	M100-102	M95	R99-M68
THERMAL				
D696	<b>Coefficient of thermal expansion</b> (10 <sup>-5</sup> in/in-°C)	3.9	3.6	3.8
D648	<b>Deflection temperature</b> (°F)			
	At 264 psi	200-215	198	170-190
	At 66 psi	225	214	187
ELECTRICAL				
D149	<b>Dielectric strength</b> (V/mil) Short time, 1/8-in thk	500	500	383-450
D150	<b>Dielectric constant</b>			
	At 1 kHz	3.3	3.3	3.9
	At 1 MHz	2.5	2.3	2.5-3.0
D150	<b>Dissipation factor</b>			
	At 1 kHz	0.04	0.04	—
	At 1 MHz	0.02-0.03	0.02-0.03	0.01-0.02
D257	<b>Volume resistivity</b> (ohm-cm) At 73°F, 50% RH	>10 <sup>17</sup>	>10 <sup>17</sup>	>10 <sup>15</sup>
D495	<b>Arc resistance</b> (s)	No track	No track	No track
OPTICAL				
D542	<b>Refractive index</b>	1.49	1.49	1.49
D1003	<b>Transmittance</b> (%)	92	92	90

Ref: Machine Design – 1985