



LEHIGH VALLEY PLASTICS

We Shape The Industry

Physical Properties of Acrylic

Property ^(a)	ASTM Method	Typical Value (.236" Thickness) ^(b)	
Mechanical	Specific Gravity	D 792 1.19	
	Tensile Strength	D 638 10,000 psi (69 M Pa)	
	Elongation, Rupture	4.2%	
	Modulus of Elasticity	400,000 psi (2800 M Pa)	
	Flexural Strength (Rupture)	D 790 16,500 psi (114 M Pa)	
	Modulus of Elasticity	475,000 psi (3300 M Pa)	
	Compressive Strength (Yield)	D 695 18,000 psi (124 M Pa)	
	Modulus of Elasticity	430,000 psi (2960 M Pa)	
	Shear Strength	D 732 9,000 psi (62 M Pa)	
	Impact Strength	0.4 ft./lbs/in. of notch	
	Izod Milled Notch	D 256 (21.6 J/m of notch)	
	Rockwell Hardness	D 785 M-94	
	Barcol Hardness	D 2583 49	
	Residual Shrinkage ^(c) (Internal Strain)	D 702 2%	
	Optical (Clear Material)	Refractive Index	D 542 1.49
Light Transmission, Total		D1003 92%	
UV Transmission		0 at 320 nanometers	
	Haze	Less than 1%	
Thermal	Forming Temperature	— 340-380°F (170-190°C)	
	Deflection Temperature under load, 264 psi	D 648 210°F (99°C)	
	Vicat Softening Point	D 1525 239°F (115°C)	
	Maximum Recommended Continuous Service Temperature	— 180°F ^(d) (82°C)	
	Coefficient of Linear Thermal Expansion	D 696 0.000040 in/in-°F (0.000072 m/m-°C)	
	Coefficient of Thermal Conductivity (k-Factor)	Cenco-Fitch 1.3 BTU/(Hr) (Sq. Ft.) (°F/in.) (0.19 w/m-K)	
	Flammability (Burning Rate 3mm thickness)	D 635 1.2 in/min. (30.5 mm/min.)	
	Self-Ignition Temperature	D 1929 910°F (490°C)	
	Specific Heat @ 77°F	— 0.35 BTU/(lb.) (°F) (1470 J/Kg-k)	
	Smoke Density Rating (3mm thickness)	D 2843 11.4%	
	Electrical	Dielectric Strength Short Time (0.1 25"-thickness)	D 149 430 volts/mil (17KV/mm)
		Dielectric Constant	
		60 Hertz	D 150 3.5
1,000 Hertz		3.2	
1,000,000 Hertz		2.7	
Dissipation Factor			
60 Hertz		D 150 0.06	
1,000 Hertz		0.04	
1,000,000 Hertz		0.02	
Volume Resistivity		D 257 1.6 x 10 ¹⁶ ohm-cm	
Surface Resistivity	D 257 1.9 x 10 ¹⁵ ohms		
Water Absorption	D 570 24 hrs @ 73°F 0.2%		
	Weight Gain during Immersion 0.2%		
	Soluble Matter Lost 0.0%		
	Water Absorbed 0.2%		
	Dimensional Change during Immersion 0.2%		
Long Term Water Absorption	D 570 Weight Gain during Immersion		
	7 days 0.5%		
	14 days 0.6%		
	21 days 0.8%		
	35 days 1.0%		
	48 days 1.1%		
Odor	— None		
Taste	— None		

NOTES: (a) Typical values: should not be used for specification purposes.

(b) Values shown are for 6mm thickness unless noted otherwise. Some values will change with thickness.

(c) Difference in length and width, as measured at room temperature, before and after heating above 300°F.

(d) It is recommended that temperatures not exceed 180°F for continuous service, or 200°F for short, intermittent use.

IMPORTANT: The information contained herein is believed to be reliable, but no representations, guarantees or warranties of any kind are made as to its accuracy, suitability for particular applications or the results to be obtained therefrom. Lehigh Valley Plastics, Inc. will not be held responsible for the use of this information relative to actual application.