

Acrylic

KEY FEATURES

- Excellent Weather Resistance
- Good Chemical Resistance
- Desirable Electrical Properties
- Able to Reduce Glare and Solar Heat Build-Up
- Safer Than Glass
- Excellent Post-Forming Dimensional Stability
- Resistant to Breakage

DESCRIPTION

Acrylic is a lightweight, rigid and weather-resistant thermoplastic. It can be easily sawed, machined, heat-formed and cemented. Sheets of acrylic are dimensionally stable and resistant to breakage. It is safer than glass because of its greater breakage resistance. If subjected to great impact, it will not shatter, but break into larger pieces. It will withstand exposure to blazing sun, extreme cold, sudden temperature changes, and salt water spray. Transparent colored acrylic can be used to reduce glare and solar energy transmittance.

TYPICAL PROPERTY VALUES

	Properties	Condition	Units	Value	ASTM Test
Physical	Density		g/cm ³	1.19	D792
	Chemical Designation			PMMA	
	Filler				

	Properties	Condition	Units	Value	ASTM Test
Mechanical	Tensile Modulus	@ 73 °F	PSI	400,000	D638
	Tensile Strength	@ 73 °F	PSI	10,000	D638
	Shear Strength	@ 73 °F	PSI		
	Elongation @ Brk	@ 73 °F	%	4.5	D638
	Flexural Modulus	@ 73 °F	PSI	480,000	D790
	Flexural Strength	@ 73 °F	PSI	17,000	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F, 10% strain	PSI	17,000	D965
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	0.4	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale	93	D785
	Coefficient of Friction	Static			
	Wear (K) Factor			in ³ -min/ft-lbs-hr	
Limiting PV			psi-fpm		

	Properties	Condition	Units	Value	ASTM Test
Thermal	Heat Deflection Temperature	@ 66 PSI	°F		
	Service Temperature	Long Term	°F	160	
	Heat Deflection Temperature	@ 264 PSI	°F	195	D648
	Service Temperature	Intermittent	°F		
	Thermal Expansion (CLTE)		in/in/°F	0.00004	D696
	Specific Heat		BTU/lb-°F	0.35	
	Thermal Conductivity		BTU-in/hr-ft ² -°F	1.3	Cenco-Fitch

	Properties	Condition	Units	Value	ASTM Test
Electrical	Surface Resistivity		ohms/square	1.0*10 ¹⁵	D257
	Volume Resistivity		ohm-cm	1.0*10 ¹⁶	D257
	Dielectric Constant	@ 60 Hz, 73 °F		3.6	D150
	Dielectric Strength		V/mil	430	D149
	Dissipation Factor	@ 60 Hz, 73 °F		0.06	D150

	Properties	Condition	Units	Value	ASTM Test
Other	Moisture Absorption	@ 24 hrs, 73 °F	%	0.2	D570
	Moisture Absorption	@ Saturation, 73 °F	%		
	Flammability	UL 94			

• The data stated above are typical values intended for reference and comparison purposes only.
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.
• Testing under individual application circumstances is recommended