

OPTIX Acrylic Properties

Physical	Test method	Units	OPTIX
Specific Gravity/Relative Density	ASTM D-792		1.19
Optical Refractive Index	ASTM D-542	nD	1.49
Light Transmission -Total	ASTM D-1003	%	92
Light Transmission - Haze	ASTM D-1003	%	2
Sound Transmission	ASTM E90 / E413	db	27
Water Absorption	ASTM D-570	% By wt	0.4
Shrinkage	ASTM D-702	%	<5

Chemical	Test method	Units	OPTIX
Resistance to Stress - Critical Crazing Stress to: Isopropyl Alcohol	ARTC Modification of MIL-P6997	psi	900
Resistance to Stress - Critical Crazing Stress to: Lacquer Thinner	ARTC Modification of MIL-P6997	psi	500
Resistance to Stress - Critical Crazing Stress to: Toluene	ARTC Modification of MIL-P6997	psi	1,300
Resistance to Stress - Critical Crazing Stress to: Solvesso 100	ARTC Modification of MIL-P6997	psi	1,600

Mechanical	Test method	Units	OPTIX
Tensile Strength	ASTM D-638	psi	11,030
Tensile Elongation – Max.	ASTM D-638	%	5.8
Tensile Modulus of Elasticity	ASTM D-638	psi	490,000
Flexural Strength	ASTM D-790	psi	17,000
Flexural Modulus of Elasticity	ASTM D-790	psi	490,000
Izod Impact Strength – Molded Notch	ASTM D-256	ft-lb/in Notch	0.4
Izod Impact Strength – Milled Notch	ASTM D-256	ft-lb/in Notch	0.28
Tensile Impact Strength	ASTM D-1822	ft-lb/in ²	20
Abrasion Resistance - Change in Haze - 0 cycles	ASTM D-1044	Haze, %	0
Abrasion Resistance - Change in Haze - 10 cycles	ASTM D-1044	Haze, %	11.2
Abrasion Resistance - Change in Haze - 50 cycles	ASTM D-1044	Haze, %	24
Abrasion Resistance - Change in Haze - 200 cycles	ASTM D-1044	Haze, %	24.9
Rockwell Hardness	ASTM D-785		M-95

Thermal	Test method	Units	OPTIX
Maximum Recommended Continuous Service Temperature		°F	170-190
Softening Temperature		°F	210-220
Melting Temperature		°F	300-315
Melt Flow Rate	ASTM D-1238	g/10 min.	1.5
Deflection Temperature 264 psi (1.8 MPa)	ASTM D-648	°F	203
Deflection Temperature 66 psi (0.45 MPa)	ASTM D-648	°F	207
Coefficient of Thermal Expansion - 30 to 30°C	ASTM D-696	in/(in-°F) x 10 ⁻⁵	3.0
Thermal Conductivity	ASTM C-177	BTU-ft/(hr-ft ²)	0.075
Flammability (Burning Rate)	ASTM D-635	In/minute	1.019
Flammability			B2
Smoke Density Rating	ASTM D-2843	%	3.4
Self-Ignition Temperature	ASTM D-1929	°F	833
Flame Spread Index	ASTM E84		115
Smoke Developed Index	ASTM E84		550

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale.