

Spartech Polycast Cell Cast Acrylic

Category : Polymer , Thermoplastic , Acrylic (PMMA)

Material Notes:

Description: Cell Cast Acrylic Information provided by Spartech.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Spartech-Polycast-Cell-Cast-Acrylic.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.19 g/cc	1.19 g/cc	ASTM D792
Water Absorption	0.20 %	0.20 %	24 hr immersion
Water Absorption at Saturation	0.65 %	0.65 %	26 day immersion

Mechanical Properties	Metric	English	Comments
Hardness, Barcol	50	50	ASTM D2583
Hardness, Rockwell M	98	98	ASTM D785
Tensile Strength, Yield	77.57 MPa	11250 psi	ASTM D638
Elongation at Break	6.4 %	6.4 %	ASTM D638
Tensile Modulus	3.10 GPa	450 ksi	ASTM D638
Flexural Strength	105.1 MPa	15250 psi	ASTM D790
Flexural Modulus	3.28 GPa	475 ksi	ASTM D790
Compressive Yield Strength	124 MPa	18000 psi	ASTM D695
Compressive Modulus	3.03 GPa	440 ksi	ASTM D695
Shear Strength	62.1 MPa	9000 psi	ASTM D732
Izod Impact, Notched	0.200 J/cm	0.375 ft-lb/in	ASTM D882
Impact	18	18	inches, Falling 0.5 lb Steel Ball Breakage Height; ASTM D256
Taber Abrasion, mg/1000 Cycles	14	14	500 g each wheel, 100 rev ANSI Z26.1; ASTM D1044
Compression Set	0.75 % @Temperature 50.0 Â°C	0.75 % @Temperature 122 Â°F	4000 psi, 24 hr (Compression Deformation); ASTM D621

Thermal Properties	Metric	English	Comments
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Thermal Properties	Metric	English	Comments
CTE, linear	75.6 $\mu\text{m/m}\cdot\text{Å}^\circ\text{C}$ @Temperature 20.0 $\text{Å}^\circ\text{C}$	1.35 $\text{in/in}\cdot\text{Å}^\circ\text{F}$ @Temperature 68.0 $\text{Å}^\circ\text{F}$	ASTM D636
Specific Heat Capacity	1.46 $\text{J/g}\cdot\text{Å}^\circ\text{C}$ @Temperature 25.0 $\text{Å}^\circ\text{C}$	0.350 $\text{BTU/lb}\cdot\text{Å}^\circ\text{F}$ @Temperature 77.0 $\text{Å}^\circ\text{F}$	Dupont 900 (Therm. An. Cal.)
Thermal Conductivity	0.187 $\text{W/m}\cdot\text{K}$	1.30 $\text{BTU}\cdot\text{in/hr}\cdot\text{ft}\cdot\text{Å}^\circ\text{F}$	Cento-Fitch
Maximum Service Temperature, Air	82.2 $\text{Å}^\circ\text{C}$	180 $\text{Å}^\circ\text{F}$	
Deflection Temperature at 0.46 MPa (66 psi)	110 $\text{Å}^\circ\text{C}$	230 $\text{Å}^\circ\text{F}$	ASTM D648
Deflection Temperature at 1.8 MPa (264 psi)	95.0 $\text{Å}^\circ\text{C}$	203 $\text{Å}^\circ\text{F}$	ASTM D648
Flame Spread	30 mm/min	1.2 in/min	Burning Rate UL 94 HB; ASTM D635
Flash Point	443 $\text{Å}^\circ\text{C}$	830 $\text{Å}^\circ\text{F}$	Self Ignition Temperature; ASTM D1929
Shrinkage	2.2 %	2.2 %	Residual Shrinkage (Internal Strain) Polycast; ASTM D4802

Optical Properties	Metric	English	Comments
Refractive Index	1.49	1.49	ASTM D542
Haze	≤ 0.50 %	≤ 0.50 %	As Cast; ASTM D1003
	≤ 0.50 %	≤ 0.50 %	After 1000 hrs. Accelerated Weathering (No effect on Crazeing, Discoloration, or Warping); ASTM D1449
Yellow Index	0.50 %	0.50 %	As Cast; ASTM D1925
Transmission, Visible	92 %	92 %	As Cast; ASTM D1003
	92 %	92 %	After 1000 hrs. Accelerated Weathering; ASTM D1449
UV Transmittance	0.00 % @Wavelength 320 nm	0.00 % @Wavelength 320 nm	

Processing Properties	Metric	English	Comments
Processing Temperature	160 $\text{Å}^\circ\text{C}$	320 $\text{Å}^\circ\text{F}$	Hot Forming Temperature

Descriptive Properties	Value	Comments
Craze Resistance to IPA (Dry)	2000 psi	Mil-P-8184

Descriptive Properties	Value	Comments
Craze Resistance to IPA (Wet)	000 psi	Mil-P-8184
Craze Resistance to Lacquer Thinner (Dry)	1000 psi	Mil-P-8184
Craze Resistance to Lacquer Thinner (Wet)	0 psi	Mil-P-8184
Craze Resistance to Sulfuric Acid (Dry)	0 psi	Mil-P-8184
Craze Resistance to Sulfuric Acid (Wet)	0 psi	Mil-P-8184
Mar Resistance	29	ASTM D637
Smoke Density	27%	ASTM D2843

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