

TruCast Properties

Physical Properties of TruCast

The following physical properties were determined by using 3mm thickness of TruCast and 4mm thickness of HHC High Impact.

Properties	ASTM	Unit	TruCast	High Impact
Specific Gravity	D 792-60 T		1.19	1.19
Optical				
Refractive Index	D 542-50		1.49	1.49
Light Transmittance	D 1003-61			
Parallel		%	92	92
Total		%	93	93
Haze		%	1	1
Mechanical				
Tensile Strength	D 638-61 T			
Rupture		kg/cm ²	758	520
Modulus of Elasticity		kg/cm ²	3×10^4	2.56×10^4
Elongation at Rupture		%	4.5	4.5
Flexural Strength	D 790-63			
Rupture		kg/cm ²	1,265	949
Modulus of Elasticity		kg/cm ²	3×10^4	2.67×10^4
Compressive Strength	D 695-63 T			
Yield		kg/cm ²	1,260	
Modulus of Elasticity		kg/cm ²	3×10^4	
Shear Strength	D 732-46	kg/cm ²	625	612
Impact Strength	D 256-56			
Falling Ball Impact		kg/cm ²	0.8	
Falling Dart Impact		N•M		21.693
Rockwell Hardness	D 785-62		M 100	
Thermal				
Hot Forming Temperature		°C	140-180	160-198
Heat Distortion Temperature				
2° C/Min – 264 p.s.i.	D 648-56	°C	100	82.2
Coefficient of Thermal Expansion	D 696-44	cm/cm/°C	7×10^{-5}	7.56×10^{-5}
Specific Heat		Cal/gr °C	0.35	
Electrical				
Surface Resistivity 28° C, 75% RH		ohm	$>10^{16}$	
Volume Resistivity	D 257-61	ohm cm	$>15^{15}$	
Dielectric Strength				
Short Time Test	D 149-64	kv/mm	20	
Arc Resistance	D 495-61		No Track	
Miscellaneous				
Flammability (Burning Rate)	D 635-63	mm/min	33	54
Water Absorption (Wt. Gain on Immersion for 24 hrs.)	D 570-63	%	0.3	0.3
Soluble Matter Lost after Immersion		%	0.0	0.0
Odor			None	None
Taste			None	None
Smoke Density Rating	D-2843	%	3.4	
Self-Ignition Temperature	D-1929	°C	445	
Flame Spread Index Smoke Developed Index	E-84		115 550	