Steinwall

Steinwall Inc.
Re-Defining the Supply Chain®
Working in Harmony with Our Customers

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POLYCARBONATE (PC)

1. Common trade names:	**Calibre, Lexan, Makrolon**		
	UNITS		
2. Density	g/cm³	1.20	Mass per unit volume
3. Mold Shrinkage	in./in.	.005-.007	Size of part versus mold cavity
4. Continuous Service Temp	°F	250	Highest temp material can perform reliably for the long term
5. Melting Point	°F	302-590	Tempurature material begins to melt
6. Processing Temp	°F	520-600	Recommended tempurature for molding
7. Tensile Strength	lb / in.²	9000	Maximum stress without yielding to a stretching mold
8. Izod Impact Strength	ft-lb / in.	15	Energy required to break at a v-notch
9. Compressive Strength	10^3 lb. / in.²	12	Resist a crushing force
10. Flexural Strength, yeild	10^3 lb. / in.²	14	Resistance to fracture during bending
11. Elongation, tensile break	%	130	Stretching ability before breaking
12. Dielectric Strength	V / 10^{-3} in.	584	Voltage material can withstand before dielectric breakdown * = aluminum oxide
13. Water Absorption, 24 hours	%	0.15	% Water absorbed when immersed in water for 24 hours
14. Coefficent of Lin. Thermal Expansion	10^{-5} in. / in. °F	3.8	Change in length per change in temperature
15. Crystalline or Amorphous	C = Crystalline A = Amorphous	A	Crystalline: arranged polymer, sharp melting point Amorphous: random polymer, broad melt)
16. Clarity	O = Opaque TP = Transparent TL = Translucent	TP	Opaque = no light passes through it Transparent = some light passes through it Translucent = light passes dirrectly through it
17. Flammability	**Flame Resistance** **High ← Low** **5VA 5VB V-0 V-1 V-2 HB**	HB / V-0	Reference standard UL 94
18. Process: Drying Required		Yes	Is it recommended to dry the material prior to molding?
19. Hot Stamp		Yes	Does the material hot stamp?
20. Machining Qualities	**Qualitative Scale: Excellent, Good, Fair, Poor**	Excellent	How does the material machine?
21. Creep Resistance		Fair	Can this material keep it's shape under load? * = with additive or co-polymer
22. Ultrasonic Welding		Excellent	Does the material weld via ultrasonics?
23. Low Friction		Fair	Surface lubricity
24. Abrasion Resistance		Fair	How well does the material withstand wear? * = with additive or co-polymer
25. Solvent Resistance		Poor	How well does the material withstand chemicals?
26. UV Resistance		Good	How well does the material withstand UV rays? * = with UV additive
27. Environmental Stress Crack Resistance		Poor	Can this material resist environmental stress cracking? * = with additive or co-polymer
28. FDA		Yes	Are there FDA grades available?
29. Living Hinge		No	Can this material be used in a living hinge application?
30. Year Developed		1957	
31.Cost: year 2006	$/lb. @ 5,000 lbs.	$3.46	Natural/Black Year 2006

32. Applications: **Windows, Helmets, Electrical, Medical, Compact Discs, Connectors, Bus. Mach. Housing, Computer Parts, Mugs, Optical Lenses**

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