



Steinwall Inc.

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

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INJECTION MOLDING ENGINEERING MOLD MAKING ASSEMBLY DECORATING DISTRIBUTION

POLYCARBONATE / POLYESTER

1. Common trade names: Xenoy, PRL

	UNITS		
2. Density	g/cm ³	1.22	Mass per unit volume
3. Mold Shrinkage	in./in.	0.009	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	400	Temperature material begins to melt
6. Processing Temp	°F	500-530	Recommended temperature for molding
7. Tensile Strength	$\frac{lb}{in.^2}$	7700	Maximum stress without yielding to a stretching mold
8. Izod Impact Strength	$\frac{ft-lb}{in.}$	13.9	Energy required to break at a v-notch
9. Compressive Strength	$\frac{10^3 lb.}{in.^2}$	12	Resist a crushing force
10. Flexural Strength, yeild	$\frac{10^3 lb.}{in.^2}$	12	Resistance to fracture during bending
11. Elongation, tensile break	%	120	Stretching ability before breaking
12. Dielectric Strength	$\frac{V}{10^{-3} in.}$	500	Voltage material can withstand before dielectric breakdown * = aluminum oxide
13. Water Absorption, 24 hours	%	0.12	% Water absorbed when immersed in water for 24 hours
14. Coefficient of Lin. Thermal Expansion	$10^{-5} \frac{in.}{in. \text{ } ^\circ F}$	4.3	Change in length per change in temperature
15. Crystalline or Amorphous	C = Crystalline A = Amorphous	C and A	Crystalline: arranged polymer, sharp melting point Amorphous: random polymer, broad melt)
16. Clarity	O = Opaque TP = Transparent TL = Translucent	O	Opaque = no light passes through it Transparent = some light passes through it Translucent = light passes directly through it
17. Flammability	Flame Resistance High ← Low 5VA 5VB V-0 V-1 V-2 HB	HB	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	Good	How does the material machine?
21. Creep Resistance		Good	Can this material keep it's shape under load? * = with additive or co-polymer
22. Ultrasonic Welding		Fair	Does the material weld via ultrasonics?
23. Low Friction		Fair	Surface lubricity
24. Abrasion Resistance		Good	How well does the material withstand wear? * = with additive or co-polymer
25. Solvent Resistance		Excellent	How well does the material withstand chemicals?
26. UV Resistance		Excellent	How well does the material withstand UV rays? * = with UV additive
27. Environmental Stress Crack Resistance			Can this material resist environmental stress cracking? * = with additive or co-polymer
28. FDA		No	Are there FDA grades available?
29. Living Hinge		No	Can this material be used in a living hinge application?
30. Year Developed		1982	
31. Cost: year 2006	$\frac{\$}{lb.}$ @ 5,000 lbs.	\$2.47	Natural/Black Year 2006

32. Applications:

Gas Tank, Power Drill, Gear Case, Automotive, Bumpers