

Shore D Polyurethane Casting Materials

Last updated: 28 July, 2008

Please call Kim, Bob, or Arlen for samples

Material	PG189	PG606	PG788	PG273	PG851	PG8902	PG8952
Shrink Factor ** (in./in.) for mold master)	1.003	1.002	0.995	0.995	1.001	1.001	1.001
Shore Hardness	80D +/- 5	65D +/- 3	84D +/- 5	85D +/- 5	78D +/- 2	85D +/- 5	85D +/- 5
Elongation at Break % ASTM D-638	5.8 *	100 *	20	4	8	21.6	24.5
Tensile Strength at Break (psi) ASTM D-638	-	3,300 *	-	-	-	-	-
Tensile Strength at Yield (psi) ASTM D-638	7,300 *	-	8,300	9,000	7,200	10,010	10,650
Tensile Modulus, (psi) ASTM D-638	145,000	-	270,000	-	210,000	371,155	381,675
Flexural Strength, (psi) ASTM D-790	11,600 *	2,700	11,200	-	10,300	15,574	15,445
Flexural Modulus, (psi) ASTM D-790	314,000 *	41,000	300,000	350,000	260,000	386,612	424,275
Izod Impact, (notched, ft-lb./in.) ASTM D-256	0.81	2.2 No Break	1.1	0.7	0.65	2.1	1.6
Heat Deflection Temperature ASTM D-648-82	133° F @ 66 psi	230° F @ 66 psi	175° F @ 66 psi	212° F @ 66 psi***	210° F @ 66 psi	190° F @ 66 psi	179° F @ 66 psi
Natural Resin Color	White	Clear Amber	Water Clear	Water Clear	White	White	Translucent Off-White
Comments	A, B	G	F	F	A, H, I	I, J	D, I, J

* Cured 30 days at 70° F

** Shrink factor is a combination of silicone mold shrinkage and casting material shrinkage. Extremely tight tolerance or large parts may need to wait until the mold shrink is complete. If you have questions, please discuss with your Project Manager.

*** The HDT of the PG273 material can be increased to this level by adding an elevated post cure @ 175°F for 4 hours, which can be done at Protogenic by request and for a small lot charge. Without the post cure, the material is rated at 149° F, @ 66psi.

Comments A Best for custom coloring - talk with your Project Manager regarding the many colors we have already matched.

B Like HIPS (High Impact PolyStyrene)

C Meets UL 94 V-0 Flame Retardant (at .236" wall (6mm)). This material can be colored, if the UL yellow card is not a requirement.

D Meets UL 94 V-0 Flame Retardant (at .100" wall (2.6mm)) Custom coloring is not available for this material.

E Custom coloring can be difficult, may not be possible

F Used for light pipes, lenses, windows, etc.

G Excellent impact resistance, can be used in living hinge applications for limited number of a flexes.

H Very durable material, closest to ABS, best for snap fits.

I The shrinkage of some of the resins are less predictable than our other resins. Please consult your Estimator or Project Manager if you are interested in using these materials.

J The 8900 materials are some of the best ABS-like resins available. However, they can be more aggressive with the silicone, which means the expected mold life is around 2/3 of the other materials. Also, there is an additional post cure to the parts which can add an additional day to your lead time. Ask your Estimator or Project Manager for a specific estimate about mold life and delivery for your part, and for more information.

The above information is based on laboratory tests conducted by the material manufacturer. The material is tested per ASTM standard tests, meaning the test samples are not typical production wall thickness, so your part's values may differ from the manufacturer's values listed above.

Protogenic Guarantees Customer Satisfaction: We will do whatever it takes to assure your satisfaction with our product. That means that, in the unlikely event that you're dissatisfied, we will fix it, replace it, or refund your money. Because of the time-sensitive nature of your project, and our commitment to your success, we're happy to extend this guarantee a full 30 days from your order's last ship date.

Protogenic creates prototype parts as aids in visualization, and for the testing of form, fit, and function. The materials used in the construction of these parts are durable enough for the testing of form, fit, and function. They are not generally suitable for use as components in products which will be distributed to the general public. They are sold to our Customers with the specific understanding of the material properties and limitations. Please note that in most cases, these materials are not UV stable, not UL rated, and not FDA approved- please discuss your application with your project manager if you have any questions about the material used for your prototypes.