

Technical Information



PLEXIGLAS® HFI10G

Overview

Plexiglas® HFI10G is an impact modified thermoplastic acrylic resin formulated for injection molding. This grade is formulated for approved medical applications and has improved gamma resistance compared to HFI10. It has high melt flow, enhanced mold release properties and provides 10 times the impact resistance of standard acrylics while maintaining excellent optical properties.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.15 g/cm ³	1.15 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	3.3 g/10 min	3.3 g/10 min	ASTM D1238
Molding Shrinkage - Flow	3.0E-3 to 8.0E-3 in/in	0.30 to 0.80 %	ASTM D955
Water Absorption (24 hr)	0.40 %	0.40 %	ASTM D570
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	270000 psi	1860 MPa	ASTM D638
Tensile Strength (Break)	5500 psi	37.9 MPa	ASTM D638
Tensile Elongation (Break)	50 %	50 %	ASTM D638
Flexural Modulus	270000 psi	1860 MPa	ASTM D790
Flexural Strength (Break)	10300 psi	71.0 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	0.90 ft-lb/in	48 J/m	ASTM D256
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	38	38	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load ¹			ASTM D648
66 psi (0.45 MPa), Annealed	192 °F	88.9 °C	
264 psi (1.8 MPa), Annealed	175 °F	79.4 °C	
Vicat Softening Temperature			
--	201 °F	93.9 °C	ASTM D1525 ²
--	181 °F	82.8 °C	ASTM D1525 ³
Thermal Conductivity	1.5 Btu·in/hr/ft ² /°F	0.22 W/m/K	ASTM C177
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating	HB	HB	UL 94
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Refractive Index ⁴	1.490	1.490	ASTM D542
Light Transmittance (125.0 mil (3175 µm))	90.0 %	90.0 %	ASTM D1003
Haze (125.0 mil (3175 µm))	< 1.00 %	< 1.00 %	ASTM D1003
Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
ASTM Classification	PMMA 0231V3	PMMA 0231V3	ASTM D788

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	175 °F	79 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Rear Temperature	440 to 480 °F	227 to 249 °C
Middle Temperature	460 to 500 °F	238 to 260 °C
Front Temperature	450 to 490 °F	232 to 254 °C
Nozzle Temperature	450 to 490 °F	232 to 254 °C
Processing (Melt) Temp	470 to 510 °F	243 to 266 °C
Mold Temperature	90 to 170 °F	32 to 77 °C
Screw Speed	50 to 100 rpm	50 to 100 rpm

Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

¹ Annealing cycle: 4hrs @ 176°F

² Rate A (50°C/h), Loading 1 (10 N)

³ Rate A (50°C/h), Loading 2 (50 N)

⁴ ND @ 72°F

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