

Technical Information



PLEXIGLAS® MI7G

Overview

Plexiglas® MI7G is an impact modified thermoplastic acrylic resin formulated for injection molding and extrusion applications. This grade is formulated for approved medical applications and has improved gamma resistance compared to MI7. It is heat resistant, has high melt flow and provides 7 times the impact resistance of standard acrylics while maintaining excellent optical properties. It offers an excellent balance between melt flow and increased resistance to breakage, while providing weatherability superior to that provided by other high-impact plastics. Supplemental moldflow simulation data is available.

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.17 g/cm ³	1.17 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	3.2 g/10 min	3.2 g/10 min	ASTM D1238
Molding Shrinkage - Flow	3.0E-3 to 6.0E-3 in/in	0.30 to 0.60 %	ASTM D955
Water Absorption (24 hr)	0.30 %	0.30 %	ASTM D570
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus	365000 psi	2520 MPa	ASTM D638
Tensile Strength (Break)	7000 psi	48.3 MPa	ASTM D638
Tensile Elongation (Break)	35 %	35 %	ASTM D638
Flexural Modulus	345000 psi	2380 MPa	ASTM D790
Flexural Strength (Break)	11200 psi	77.2 MPa	ASTM D790
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	0.60 ft-lb/in	32 J/m	ASTM D256
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	68	68	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load ¹			ASTM D648
66 psi (0.45 MPa), Annealed	196 °F	91.1 °C	
264 psi (1.8 MPa), Annealed	185 °F	85.0 °C	
Vicat Softening Temperature			
--	210 °F	98.9 °C	ASTM D1525 ²
--	194 °F	90.0 °C	ASTM D1525 ³
Thermal Conductivity	1.4 Btu-in/hr/ft ² /°F	0.20 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))	91.0 %	91.0 %	ASTM D1003
Haze (125.0 mil (3175 µm))	< 2.00 %	< 2.00 %	ASTM D1003
Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
ASTM Classification	PMMA 0221V3	PMMA 0221V3	ASTM D788
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	185 °F	85 °C	
Drying Time	4.0 hr	4.0 hr	
Suggested Max Moisture	< 0.10 %	< 0.10 %	
Suggested Max Regrind	25 %	25 %	
Rear Temperature	420 to 460 °F	216 to 238 °C	
Middle Temperature	420 to 460 °F	216 to 238 °C	

Injection	Nominal Value (English)	Nominal Value (SI)
Front Temperature	420 to 460 °F	216 to 238 °C
Nozzle Temperature	420 to 460 °F	216 to 238 °C
Processing (Melt) Temp	460 °F	238 °C
Mold Temperature	100 to 190 °F	38 to 88 °C
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	50 to 100 rpm	50 to 100 rpm
Screw L/D Ratio	16.0:1.0	16.0:1.0
Screw Compression Ratio	2.0:1.0 to 3.0:1.0	2.0:1.0 to 3.0:1.0

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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