

Technical Information



PLEXIGLAS® MI7

Overview

Plexiglas® MI7 is an impact modified thermoplastic acrylic resin formulated for injection molding and extrusion applications. 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.

Automotive Specifications

- CHRYSLER MS-DB-16 CPN3084
- CHRYSLER MS-DB-16 CPN3268
- CHRYSLER MS-DB-16 CPN3322
- FORD WSB-M4D687-A Color: 100 Clear
- FORD WSB-M4D687-A Color: 16500 Medium Red
- FORD WSB-M4D687-A Color: 26505 Medium Amber
- FORD WSB-M4D687-A Color: 56503 Black
- GM GMP.PMMA.015
- SAE J576 Color: Various Colors
- CHRYSLER MS-DB-16 CPN3267
- CHRYSLER MS-DB-16 CPN3269
- CHRYSLER MS-DB-75 CPN4236
- FORD WSB-M4D687-A Color: 101 Clear
- FORD WSB-M4D687-A Color: 26500 Light Amber
- FORD WSB-M4D687-A Color: 56058 Gray
- FORD WSB-M4D687-A Color: 56523 Gray
- GM GMW16335P-PMMA-T4

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.17 g/cm ³	1.17 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	3.2 g/10 min	3.2 g/10 min	ASTM D1238
230°C/3.8 kg	4.3 g/10 min	4.3 g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/3.8 kg)	3.8 cm ³ /10min	3.8 cm ³ /10min	ISO 1133
Molding Shrinkage			
Flow	3.0E-3 to 6.0E-3 in/in	0.30 to 0.60 %	ASTM D955
--	3.0E-3 to 6.0E-3 in/in	0.30 to 0.60 %	ISO 294-4
Water Absorption			
24 hr	0.30 %	0.30 %	ASTM D570
Equilibrium, 73°F (23°C), 50% RH	0.30 %	0.30 %	ISO 62
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
--	365000 psi	2520 MPa	ASTM D638
--	363000 psi	2500 MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	7980 psi	55.0 MPa	ISO 527-2/1A/5
Break	7000 psi	48.3 MPa	ASTM D638
Break	6530 psi	45.0 MPa	ISO 527-2/1A/5
Tensile Strain			
Yield	5.0 %	5.0 %	ISO 527-2/1A/5
Break	35 %	35 %	ASTM D638 ISO 527-2/1A/5
Flexural Modulus			
--	345000 psi	2380 MPa	ASTM D790
--	348000 psi	2400 MPa	ISO 178
Flexural Stress			
-- 1	10200 psi	70.0 MPa	ISO 178
Yield	11200 psi	77.2 MPa	ASTM D790

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength	1.4 ft-lb/in ²	3.0 kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength	19 ft-lb/in ²	40 kJ/m ²	ISO 179/1eU
Notched Izod Impact			
73°F (23°C)	0.60 ft-lb/in	32 J/m	ASTM D256
--	2.4 ft-lb/in ²	5.0 kJ/m ²	ISO 180/A
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	68	68	ASTM D785 ISO 2039-2
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Annealed ²	196 °F	91.1 °C	ASTM D648
66 psi (0.45 MPa), Annealed	190 °F	88.0 °C	ISO 75-2/B
264 psi (1.8 MPa), Annealed ²	185 °F	85.0 °C	ASTM D648
264 psi (1.8 MPa), Annealed	181 °F	83.0 °C	ISO 75-2/A
Vicat Softening Temperature			
--	210 °F	98.9 °C	ASTM D1525 ³ ISO 306/A50 ³
--	194 °F	90.0 °C	ASTM D1525 ⁴
--	198 °F	92.0 °C	ISO 306/B50
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 ⁵	1.490	1.490	ASTM D542 ISO 489
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	180 to 190 °F	82 to 88 °C	
Drying Time	4.0 hr	4.0 hr	
Suggested Max Moisture	< 0.10 %	< 0.10 %	
Suggested Shot Size	50 %	50 %	
Suggested Max Regrind	20 %	20 %	
Rear Temperature	430 °F	221 °C	
Middle Temperature	440 °F	227 °C	
Front Temperature	450 °F	232 °C	
Nozzle Temperature	440 °F	227 °C	
Processing (Melt) Temp	< 520 °F	< 271 °C	
Mold Temperature	100 to 190 °F	38 to 88 °C	
Injection Rate	Moderate	Moderate	
Back Pressure	100 psi	0.689 MPa	
Screw Speed	50 to 100 rpm	50 to 100 rpm	
Screw L/D Ratio	15.0:1.0 to 20.0:1.0	15.0:1.0 to 20.0:1.0	
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	2.0:1.0 to 2.5:1.0	
Vent Depth	2.0E-3 in	0.051 mm	

Notes

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

¹ Conventional Deflection

² Annealing cycle: 4hrs @ 176°F

³ Rate A (50°C/h), Loading 1 (10 N)

⁴ Rate A (50°C/h), Loading 2 (50 N)

⁵ ND @ 72°F

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