

# Plexiglas® HFI10

Polymethyl Methacrylate Acrylic  
Altuglas International of Arkema Inc.

Message:

Plexiglas® HFI10 is an impact modified thermoplastic acrylic resin formulated for injection molding. It has high melt flow, enhanced mold release properties and provides 10 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.

General Information			
UL YellowCard	E39437-231405	E39437-231406	
Additive	Impact Modifier		
Features	BPA Free		
	Good Color Stability		
	Good Dimensional Stability		
	Good Thermal Stability		
	Good Toughness		
	Good UV Resistance		
	Good Weather Resistance		
	High Clarity		
	High Flow		
	High Impact Resistance		
	Impact Modified		
	Low Shrinkage		
	Scratch Resistant		
Uses	Appliances		
	Lighting Diffusers		
Agency Ratings	FDA 21 CFR 177.1010		
RoHS Compliance	RoHS Compliant		
Appearance	Clear/Transparent		
	Colors Available		
	Opaque		
	Translucent		
Forms	Pellets		
Processing Method	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.15	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	3.3	g/10 min	ASTM D1238

Molding Shrinkage - Flow	0.30 to 0.80	%	ASTM D955
Water Absorption (24 hr)	0.40	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	38		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1860	MPa	ASTM D638
Tensile Strength (Break)	37.9	MPa	ASTM D638
Tensile Elongation (Break)	50	%	ASTM D638
Flexural Modulus	1860	MPa	ASTM D790
Flexural Strength (Yield)	71.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	48	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load <sup>1</sup>			ASTM D648
0.45 MPa, Annealed	88.9	°C	
1.8 MPa, Annealed	79.4	°C	
Vicat Softening Temperature			
--	93.9	°C	ASTM D1525 <sup>2</sup>
--	82.8	°C	ASTM D1525 <sup>3</sup>
Thermal Conductivity	0.22	W/m/K	ASTM C177
Flammability	Nominal Value		Test Method
Flame Rating	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Refractive Index <sup>4</sup>	1.490		ASTM D542
Transmittance (3180 µm)	90.0	%	ASTM D1003
Haze (3180 µm)	< 1.0	%	ASTM D1003
Additional Information	Nominal Value		Test Method
ASTM Classification	PMMA 0231V2		ASTM D788
Injection	Nominal Value	Unit	
Drying Temperature	82.2 to 87.8	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.10	%	
Suggested Shot Size	50	%	
Suggested Max Regrind	20	%	
Rear Temperature	221	°C	
Middle Temperature	227	°C	
Front Temperature	232	°C	
Nozzle Temperature	227	°C	
Processing (Melt) Temp	< 271	°C	
Mold Temperature	37.8 to 87.8	°C	
Injection Rate	Moderate		
Back Pressure	0.689	MPa	

Screw Speed	50 to 100	rpm
Screw L/D Ratio	15.0:1.0 to 20.0:1.0	
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	
Vent Depth	0.051	mm

#### NOTE

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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#### Recommended distributors for this material

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