

Plexiglas® VM

Polymethyl Methacrylate Acrylic
Altuglas International of Arkema Inc.

Message:

Plexiglas® VM is a thermoplastic acrylic resin formulated for injection molding applications. It is characterized by its very high melt flow and chemical resistance. Plexiglas® VM has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics. Plexiglas® VM is easy to process due to its exceptional thermal stability, extrusion melt strength, and excellent tool surface reproduction and release properties. Moldflow simulation data is available. It has excellent resistance to many chemicals including solutions of inorganic acids, alkalis and aliphatic hydrocarbons such as VM&P naphtha and heptane. Additionally, it is virtually unaffected by a wide range of commercial products including many beverages, foodstuffs, detergent solutions and cleaners.

General Information			
UL YellowCard	E39437-231443	E39437-231444	
Features	BPA Free		
	Good Chemical Resistance		
	Good Color Stability		
	Good Dimensional Stability		
	Good Thermal Stability		
	Good UV Resistance		
	Good Weather Resistance		
	High Clarity		
	High Flow		
	High Scratch Resistance		
	Low Shrinkage		
Uses	Automotive Applications		
	Lighting Louvers		
	Profiles		
Agency Ratings	FDA 21 CFR 177.1010		
RoHS Compliance	RoHS Compliant		
Appearance	Clear/Transparent		
	Colors Available		
	Translucent		
Forms	Pellets		
Processing Method	Extrusion		
	Injection Molding		
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.18	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	15	g/10 min	ASTM D1238

Molding Shrinkage - Flow	0.20 to 0.60	%	ASTM D955
Water Absorption (24 hr)	0.30	%	ASTM D570
Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	89		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3030	MPa	ASTM D638
Tensile Strength (Yield)	66.2	MPa	ASTM D638
Tensile Elongation (Break)	4.0	%	ASTM D638
Flexural Modulus	3000	MPa	ASTM D790
Flexural Strength (Yield)	96.5	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact (23°C)	16	J/m	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load ¹			ASTM D648
0.45 MPa, Annealed	83.3	°C	
1.8 MPa, Annealed	77.2	°C	
Vicat Softening Temperature			
--	88.3	°C	ASTM D1525 ²
--	82.2	°C	ASTM D1525 ³
Thermal Conductivity	0.19	W/m/K	ASTM C177
Flammability	Nominal Value		Test Method
Flame Rating	HB		UL 94
Optical	Nominal Value	Unit	Test Method
Refractive Index ⁴	1.490		ASTM D542
Transmittance (3180 µm)	92.0	%	ASTM D1003
Haze (3180 µm)	< 2.0	%	ASTM D1003
Additional Information	Nominal Value		Test Method
ASTM Classification	PMMA 0111V5		ASTM D788
Injection	Nominal Value	Unit	
Drying Temperature	73.9 to 85.0	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.10	%	
Suggested Shot Size	50	%	
Suggested Max Regrind	20	%	
Rear Temperature	193	°C	
Middle Temperature	199	°C	
Front Temperature	204	°C	
Nozzle Temperature	199	°C	
Processing (Melt) Temp	< 271	°C	
Mold Temperature	54.4 to 71.1	°C	
Injection Rate	Fast		
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 @ 158°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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