Plexiglas® V045

Polymethyl Methacrylate Acrylic

Altuglas International of Arkema Inc.

Message:

Plexiglas® V045 is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its chemical and heat resistance as well a high melt flow. Plexiglas® V045 has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics. Plexiglas® V045 is easy to process due to its exceptional thermal stability, extrusion melt strength, and excellent tool surface reproduction and release properties. Supplemental 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	E39437-231434	E39437-231435
Features	BPA Free	
	Good Color Stability	
	Good Dimensional Stability	
	Good Thermal Stability	
	Good UV Resistance	
	Good Weather Resistance	
	High Clarity	
	High Scratch Resistance	
	Low Shrinkage	
	Medium Heat Resistance	
Uses	Lighting Diffusers	
Agency Ratings	FDA 21 CFR 177.1010	
RoHS Compliance	RoHS Compliant	
Appearance	Clear/Transparent	
	Colors Available	
	Opaque	
	Translucent	
Forms	Pellets	
Processing Method	Extrusion	
	Injection Molding	

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.19	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	2.3	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)	91		ASTM D785
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	3100	MPa	ASTM D638
Tensile Strength (Yield)	70.3	MPa	ASTM D638
Tensile Elongation (Break)	6.0	%	ASTM D638
Flexural Modulus	3100	MPa	ASTM D790
Flexural Strength (Yield)	103	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	94.4	°C	
1.8 MPa, Annealed	92.8	°C	
Vicat Softening Temperature			
--	103	°C	ASTM D1525 [2]
--	97.2	°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)	< 1.0	%	ASTM D1003
Additional Information	Nominal Value		Test Method
ASTM Classification	PMMA 0131V2		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	216	°C	
Middle Temperature	221	°C	
Front Temperature	227	°C	
Nozzle Temperature	221	°C	
Processing (Melt) Temp	< 271	°C	
Mold Temperature	65.6 to 87.8	°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 @ 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

Recommended distributors for this material

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