

Plexiglas® V825

Polymethyl Methacrylate Acrylic

Altuglas International of Arkema Inc.

PROSPECTOR®

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Technical Data

Product Description

Plexiglas® V825 is a thermoplastic acrylic resin formulated for injection molding and extrusion applications. It is characterized by its high heat resistance and high melt flow. Plexiglas® V825 has excellent weatherability and optical properties allowing it to excel in applications requiring outdoor stability, high quality surface appearance and/or precision optics. Plexiglas® V825 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

Material Status	• Commercial: Active
Literature ¹	• Brochure - Plexiglas® Acrylic Molding and Extrusion Resins (English) • Chemical Resistance of Plexiglas® V-Series and Impact Acrylic Resins (English) • Technical Datasheet (English)
UL Yellow Card ²	• E39437-231434 • E39437-231435
Search for UL Yellow Card	• Altuglas International of Arkema Inc. • Plexiglas®
Availability	• North America
Features	• BPA Free • Good Color Stability • Good Dimensional Stability • Good Thermal Stability • High Clarity • High Heat Resistance • High Scratch Resistance • Low Shrinkage • UV Resistant • Weather Resistant
Uses	• Automotive Applications • Consumer Applications • Optical Applications
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 (English)	Nominal Value (SI)	Test Method
Specific Gravity	1.19	1.19 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	3.7 g/10 min	3.7 g/10 min	ASTM D1238
Molding Shrinkage - Flow	2.0E-3 to 6.0E-3 in/in	0.20 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	450000 psi	3100 MPa	ASTM D638
Tensile Strength (Yield)	10200 psi	70.3 MPa	ASTM D638
Tensile Elongation (Break)	6.0 %	6.0 %	ASTM D638
Flexural Modulus	450000 psi	3100 MPa	ASTM D790
Flexural Strength (Yield)	15000 psi	103 MPa	ASTM D790

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact (73°F (23°C))	0.30 ft-lb/in	16 J/m	ASTM D256

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	93	93	ASTM D785

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load ⁴			ASTM D648
66 psi (0.45 MPa), Annealed	221 °F	105 °C	
264 psi (1.8 MPa), Annealed	216 °F	102 °C	
Vicat Softening Temperature			
--	232 °F	111 °C	ASTM D1525 ⁵
--	219 °F	104 °C	ASTM D1525 ⁶



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Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Thermal Conductivity	1.3 Btu·in/hr/ft ² /°F	0.19 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 ⁷	1.490	1.490	ASTM D542
Transmittance (125 mil (3180 µm))	92.0 %	92.0 %	ASTM D1003
Haze (125 mil (3180 µm))	< 1.0 %	< 1.0 %	ASTM D1003
Additional Information	Nominal Value (English)	Nominal Value (SI)	Test Method
ASTM Classification	PMMA 0141V3	PMMA 0141V3	ASTM D788
Injection	Nominal Value (English)	Nominal Value (SI)	
Drying Temperature	190 to 200 °F	88 to 93 °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	420 °F	216 °C	
Middle Temperature	430 °F	221 °C	
Front Temperature	440 °F	227 °C	
Nozzle Temperature	430 °F	221 °C	
Processing (Melt) Temp	< 520 °F	< 271 °C	
Mold Temperature	150 to 200 °F	66 to 93 °C	
Injection Rate	Fast	Fast	
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

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ Annealing cycle: 4hrs @ 203°F

⁵ Rate A (50°C/h), Loading 1 (10 N)

⁶ Rate A (50°C/h), Loading 2 (50 N)

⁷ ND @ 72°F



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Where to Buy

Supplier

Altuglas International of Arkema Inc.

Bristol, PA USA

Telephone: 215-826-2600

Web: <http://www.altuglasint.com/en/>

Distributor

PolyOne Distribution

PolyOne Distribution is a global distribution company. Contact PolyOne Distribution for availability of individual products by country.

Telephone: 800-894-4266

Web: <http://polyonedistribution.com/>

Availability: Global

