PLEXIGLAS® V825

Polymethyl Methacrylate Acrylic

Trinseo

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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 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]	• Technical Datasheet		
UL Yellow Card [2]	• E39437-231434 • E39437-231435		
Search for UL Yellow Card	• Trinseo • PLEXIGLAS®		
Availability	• North America		
Features	• BPA Free • Good Color Stability • Good Dimensional Stability • Good Thermal Stability	• Good Weather Resistance • High Clarity • High Heat Resistance • High Scratch Resistance	• Low Shrinkage • UV 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	Unit	Test Method
Density / Specific Gravity	1.19	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)			
230°C/3.8 kg	3.7	g/10 min	ASTM D1238
230°C/3.8 kg	4.3	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/3.8 kg)	3.8	cm³/10min	ISO 1133
Molding Shrinkage			
Flow	0.20 to 0.60	%	ASTM D955
--	0.20 to 0.60	%	ISO 294-4
Water Absorption			
24 hr	0.30	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.30	%	ISO 62

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
--	3100	MPa	ASTM D638
--	3300	MPa	ISO 527-1/1A/1
Tensile Stress			
Yield	65.0	MPa	ISO 527-2/1A/5
Break	70.3	MPa	ASTM D638
Break	65.0	MPa	ISO 527-2/1A/5
Tensile Strain			
Yield	4.0	%	ISO 527-2/1A/5
Break	6.0	%	ASTM D638
Break	4.0	%	ISO 527-2/1A/5

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Mechanical	Nominal Value	Unit	Test Method
Flexural Modulus			
--	3100	MPa	ASTM D790
--	3000	MPa	ISO 178
Flexural Stress			
-- [4]	95.0	MPa	ISO 178
Break	103	MPa	ASTM D790

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength	2.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength	20	kJ/m²	ISO 179/1eU
Notched Izod Impact			
23°C	16	J/m	ASTM D256
--	2.0	kJ/m²	ISO 180/A

Hardness	Nominal Value	Unit	Test Method
Rockwell Hardness (M-Scale)	93		ASTM D785 ISO 2039-2

Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, Annealed [5]	105	°C	ASTM D648
0.45 MPa, Annealed	100	°C	ISO 75-2/B
1.8 MPa, Annealed [5]	98.0	°C	ASTM D648
1.8 MPa, Annealed	95.0	°C	ISO 75-2/A
Vicat Softening Temperature			
--	111	°C	ASTM D1525 [6] ISO 306/A50 [6]
--	104	°C	ASTM D1525 [7] ISO 306/B50 [7]
Thermal Conductivity	0.19	W/m/K	ASTM C177

Flammability	Nominal Value	Unit	Test Method
Flame Rating	HB		UL 94

Optical	Nominal Value	Unit	Test Method
Refractive Index [8]	1.490		ASTM D542 ISO 489
Light Transmittance (3175 µm)	92.0	%	ASTM D1003
Haze (3175 µm)	< 1.00	%	ASTM D1003

Additional Information	Nominal Value	Unit	Test Method
ASTM Classification	PMMA 0141V3		ASTM D788

Injection	Nominal Value	Unit
Drying Temperature	88 to 93	°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	66 to 93	°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	

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Injection	Nominal Value	Unit
Screw Compression Ratio	2.0:1.0 to 2.5:1.0	
Vent Depth	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] Conventional Deflection

[5] Annealing cycle: 4hrs @ 203°F

[6] Rate A (50°C/h), Loading 1 (10 N)

[7] Rate A (50°C/h), Loading 2 (50 N)

[8] ND @ 72°F

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Where to Buy

Supplier

Trinseo
, USA
Telephone: 888-789-7661
Web: http://www.trinseo.com/

Distributor

Avient Distribution
Avient Distribution is a global distribution company. Contact Avient Distribution for availability of individual products by country.
Telephone: +1-440-930-3004 (USA); +86-21-6028-4805 (China)
Web: https://now.avient.com/
Availability: Global

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