TRINSEO™

PLEXIGLAS® V825

Overview

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.

Automotive Specifications

- CHRYSLER MS-DB-14
- CHRYSLER MS-DB-14 CPN2969
- CHRYSLER MS-DB-75 CPN4231
- CHRYSLER MS-DB-75 CPN4232
- FORD ESF-M4D9-A
- FORD WSK-M4D776-A1
- FORD WSS-M4D776-B1
- FORD WSS-M4D776-B2
- GM GMP.PMMA.007
- GM GMP.PMMA.012
- GM GMW16335P-PMMA-T2HF
- SAE J576 Color: Various Colors

Physical	Nominal Value (English)		Nominal Value (SI)		Test Method
Density	1.19	g/cm³	1.19	g/cm³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)					
230°C/3.8 kg	3.7	g/10 min	3.7	g/10 min	ASTM D1238
230°C/3.8 kg	4.3	g/10 min	4.3	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (230°C/3.8 kg)	3.8	cm³/10min	3.8	cm³/10min	ISO 1133
Molding Shrinkage					
Flow	2.0E-3 to 6.0E-3	in/in	0.20 to 0.60	%	ASTM D955
--	2.0E-3 to 6.0E-3	in/in	0.20 to 0.60	%	ISO 294-4
Water Absorption					
24 hr	0.30	%	0.30	%	ASTM D570
Equilibrium, 73°F (23°C), 50% RH	0.30	%	0.30	%	ISO 62
Mechanical	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Tensile Modulus					
--	450000	psi	3100	MPa	ASTM D638
--	479000	psi	3300	MPa	ISO 527-1/1A/1
Tensile Stress					
Yield	9430	psi	65.0	MPa	ISO 527-2/1A/5
Break	10200	psi	70.3	MPa	ASTM D638
Break	9430	psi	65.0	MPa	ISO 527-2/1A/5
Tensile Strain					
Yield	4.0	%	4.0	%	ISO 527-2/1A/5
Break	6.0	%	6.0	%	ASTM D638
Break	4.0	%	4.0	%	ISO 527-2/1A/5
Flexural Modulus					
--	450000	psi	3100	MPa	ASTM D790
--	435000	psi	3000	MPa	ISO 178
Flexural Stress					
-- [1]	13800	psi	95.0	MPa	ISO 178
Break	15000	psi	103	MPa	ASTM D790

Impact	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Charpy Notched Impact Strength	0.95	ft·lb/in²	2.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength	9.5	ft·lb/in²	20	kJ/m²	ISO 179/1eU
Notched Izod Impact					
73°F (23°C)	0.30	ft·lb/in	16	J/m	ASTM D256
--	0.95	ft·lb/in²	2.0	kJ/m²	ISO 180/A
Hardness	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Rockwell Hardness (M-Scale)	93		93		ASTM D785 ISO 2039-2
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Deflection Temperature Under Load					
66 psi (0.45 MPa), Annealed [2]	221	°F	105	°C	ASTM D648
66 psi (0.45 MPa), Annealed	212	°F	100	°C	ISO 75-2/B
264 psi (1.8 MPa), Annealed [2]	208	°F	98.0	°C	ASTM D648
264 psi (1.8 MPa), Annealed	203	°F	95.0	°C	ISO 75-2/A
Vicat Softening Temperature					
--	232	°F	111	°C	ASTM D1525 [3] ISO 306/A50 [3]
--	219	°F	104	°C	ASTM D1525 [4] ISO 306/B50 [4]
Thermal Conductivity	1.3	Btu·in/hr/ft²/°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 [5]	1.490		1.490		ASTM D542 ISO 489
Light Transmittance (125.0 mil (3175 µm))	92.0	%	92.0	%	ASTM D1003
Haze (125.0 mil (3175 µm))	< 1.00	%	< 1.00	%	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	Moderate		Moderate	
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

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

[1] Conventional Deflection

[2] Annealing cycle: 4hrs @ 203°F

[3] Rate A (50°C/h), Loading 1 (10 N)

[4] Rate A (50°C/h), Loading 2 (50 N)

[5] ND @ 72°F

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