Technical Information

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PLEXIGLAS® Diffuse™ V045-68209

Overview

Plexiglas® Diffuse™ V045-68209 is a thermoplastic acrylic resin sufficiently concentrated to be used in blend formulations via extrusion to tailor lens properties in the LED lighting market. It is characterized by its exceptional hiding performance and high light transmission.

Physical	Nominal Value (English)		Nominal Value (SI)		Test Method
Density	1.19	g/cm³	1.19	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	1.7	g/10 min	1.7	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	421000	psi	2900	MPa	ASTM D638
Tensile Strength (Break)	8850	psi	61.0	MPa	ASTM D638
Tensile Elongation (Break)	15	%	15	%	ASTM D638
Flexural Modulus	392000	psi	2700	MPa	ASTM D790
Flexural Strength (Break)	14500	psi	100	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)	86		86		ASTM D785
Thermal	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Deflection Temperature Under Load [1]					ASTM D648
66 psi (0.45 MPa), Annealed	221	°F	105	°C	
264 psi (1.8 MPa), Annealed	212	°F	100	°C	
Vicat Softening Temperature					
--	228	°F	109	°C	ASTM D1525 [2]
--	219	°F	104	°C	ASTM D1525 [3]
Flammability	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Flame Rating	HB		HB		UL 94
Optical	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
Light Transmittance (78.74 mil (2000 µm))	79.0	%	79.0	%	ASTM D1003
Haze (78.74 mil (2000 µm))	> 100	%	> 100	%	ASTM D1003
Additional Information	**Nominal Value (English)**		**Nominal Value (SI)**		**Test Method**
ASTM Classification	PMMA 0111T0V1		PMMA 0111T0V1		ASTM D788

Notes

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

[1] Annealing Cycle: 16 hours @ 90°C (194°F)

[2] Rate A (50°C/h), Loading 1 (10 N)

[3] Rate A (50°C/h), Loading 2 (50 N)

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