

Technical Information


TRINSEO™

ALTUGLAS™ Diffuse™ 501

Overview

OVERVIEW : The boom of LEDs as light sources has made light fitting designers consider new concepts. TRINSEO works with customers to market effective PMMA LED lighting solutions including ones that are diffusive or reflective, feature smart optical effects, and can provide an opalescent appearance or high heat resistance. These materials are designed for injection and extrusion processing. These acrylic resins can be tailored to meet new lighting challenges in terms of light fittings, transportation and consumer markets.

ALTUGLAS™ Diffuse : This range provides an ideal combination of properties, including masking hot spots through spatial light diffusion, without sacrificing the PMMA diffuser's light output.

MARKETS / APPLICATIONS :

Automotive & Transportation
Building & Construction

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.15 g/cm ³	1.15 g/cm ³	ISO 1183
Melt Mass-Flow Rate (MFR) (230°C/3.8 kg)	1.2 g/10 min	1.2 g/10 min	ISO 1133
Molding Shrinkage - Flow	2.0E-3 to 8.0E-3 in/in	0.20 to 0.80 %	ASTM D955
Water Absorption			ISO 62
Equilibrium, 73°F (23°C), 50% RH	0.36 %	0.36 %	
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Stress			ISO 527-2/50
Yield, 73°F (23°C)	5370 psi	37.0 MPa	
Break, 73°F (23°C)	5370 psi	37.0 MPa	
Tensile Strain			ISO 527-2/50
Yield, 73°F (23°C)	5.0 %	5.0 %	
Break, 73°F (23°C)	24 %	24 %	
Flexural Modulus	261000 psi	1800 MPa	ISO 178
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength (73°F (23°C))	1.2 ft-lb/in ²	2.6 kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
73°F (23°C)	15 ft-lb/in ²	31 kJ/m ²	
Notched Izod Impact Strength (73°F (23°C))	1.5 ft-lb/in ²	3.2 kJ/m ²	ISO 180/1A
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (M-Scale)	26	26	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			ISO 75-2/A
264 psi (1.8 MPa), Annealed	187 °F	86.0 °C	
Vicat Softening Temperature	> 201 °F	> 94.0 °C	ISO 306/B50
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating	HB	HB	UL 94
Glow Wire Flammability Index			IEC 60695-2-12
0.08 in (2.1 mm)	> 1200 °F	> 650 °C	
0.12 in (3.1 mm)	> 1200 °F	> 650 °C	
Optical	Nominal Value (English)	Nominal Value (SI)	Test Method
Light Transmittance (78.74 mil (2000 µm))	76.0 %	76.0 %	ASTM D1003
Haze	100 %	100 %	ASTM D1003

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 °F	80 °C
Drying Time	4.0 to 6.0 hr	4.0 to 6.0 hr
Rear Temperature	428 to 464 °F	220 to 240 °C
Middle Temperature	446 to 482 °F	230 to 250 °C
Front Temperature	464 to 500 °F	240 to 260 °C
Nozzle Temperature	464 to 500 °F	240 to 260 °C
Processing (Melt) Temp	464 to 500 °F	240 to 260 °C
Mold Temperature	158 to 176 °F	70 to 80 °C

Notes

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

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