



Celanex® 3309HRLM

Celanese Corporation - Polybutylene Terephthalate

Monday, November 4, 2019

General Information

Product Description

Celanex 3309HRLM is a non-lubricated, 30% fiberglass reinforced Polybutylene Terephthalate which has excellent hydrolysis resistance, mechanical properties and processability. It is a lasermarkable grade available in a black color to mark white. The grade is specially formulated to yield crisp marks when subjected to a Nd:YAG laser or equivalent operated at 1064nm or 532nm. Lasers operating in the UV region (355nm) may yield different results.

General

Material Status	• Commercial: Active
Availability	• North America
Filler / Reinforcement	• Glass Fiber, 30% Filler by Weight
Features	• Good Processability • Hydrolysis Resistant • Laser Markable
RoHS Compliance	• Contact Manufacturer
Automotive Specifications	• FORD WSS-M4D1017-A1
Appearance	• Black

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.55	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.70 to 0.90	%	
Flow	0.30 to 0.50	%	
Water Absorption (Equilibrium, 73°F, 50% RH)	0.15	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1.33E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	19600	psi	ISO 527-2/1A/5
Tensile Strain (Break)	2.7	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.29E+6	psi	ISO 178
Flexural Stress (73°F)	30500	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	3.1	ft-lb/in ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-22°F	21	ft-lb/in ²	
73°F	22	ft-lb/in ²	
Notched Izod Impact Strength (73°F)	3.3	ft-lb/in ²	ISO 180/1A
Unnotched Izod Impact Strength (73°F)	17	ft-lb/in ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	437	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	406	°F	ISO 75-2/A
Glass Transition Temperature ²	140	°F	ISO 11357-2
Vicat Softening Temperature	428	°F	ISO 306/B50
Melting Temperature ²	437	°F	ISO 11357-3
CLTE - Flow	1.4E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	5.6E-5	in/in/°F	ISO 11359-2

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Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Electric Strength	790	V/mil	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	4.50		
1 MHz	4.10		
Dissipation Factor			IEC 60250
100 Hz	2.2E-3		
1 MHz	0.016		
Comparative Tracking Index	425	V	IEC 60112

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	248 to 266	°F
Drying Time	4.0	hr
Suggested Max Moisture	0.020	%
Suggested Max Regrind	25	%
Hopper Temperature	68 to 122	°F
Rear Temperature	446 to 464	°F
Middle Temperature	455 to 482	°F
Front Temperature	455 to 482	°F
Nozzle Temperature	482 to 500	°F
Processing (Melt) Temp	455 to 500	°F
Mold Temperature	149 to 199	°F
Injection Rate	Moderate-Fast	
Back Pressure	0.00 to 50.0	psi

Injection Notes

Die Temperature: 250 to 260°C
Feed Temperature: 230 to 240°C
Zone 4 Temperature: 240 to 260°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min