

Celanex® 3309HRLM

Polybutylene Terephthalate

Celanese Corporation

Message:

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 Information			
Filler / Reinforcement	Glass fiber reinforced material, 30% filler by weight		
Features	Laser marking		
	Workability, good		
	Hydrolysis resistance		
RoHS Compliance	Contact manufacturer		
Appearance	Black		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
--	1.53	g/cm ³	ASTM D792
--	1.55	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Vertical flow direction	0.70 - 0.90	%	ISO 294-4
Flow direction	0.30 - 0.50	%	ISO 294-4
Water Absorption (Equilibrium, 23°C, 50% RH)	0.070	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	9200	MPa	ISO 527-2/1A/1
Tensile Strength			
Fracture, 23°C	137	MPa	ASTM D638
Fracture	135	MPa	ISO 527-2/1A/5
Tensile Elongation			
Fracture, 23°C	2.8	%	ASTM D638
Fracture	2.7	%	ISO 527-2/1A/5
Flexural Modulus (23°C)	8900	MPa	ISO 178
Flexural Stress (23°C)	210	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (23°C)	6.5	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C	45	kJ/m ²	ISO 179/1eU
23°C	46	kJ/m ²	ISO 179/1eU
Notched Izod Impact (23°C)	7.0	kJ/m ²	ISO 180/1A

Unnotched Izod Impact Strength (23°C)	35	kJ/m ²	ISO 180/1U
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature			
0.45 MPa, not annealed	225	°C	ISO 75-2/B
1.8 MPa, not annealed	208	°C	ISO 75-2/A
Glass Transition Temperature ¹	60.0	°C	ISO 11357-2
Vicat Softening Temperature	220	°C	ISO 306/B50
Melting Temperature ²	225	°C	ISO 11357-3
Linear thermal expansion coefficient			ISO 11359-2
Flow	2.5E-5	cm/cm/°C	ISO 11359-2
Lateral	1.0E-4	cm/cm/°C	ISO 11359-2
Electrical	Nominal Value	Unit	Test Method
Surface Resistivity	> 1.0E+15	ohms	IEC 60093
Volume Resistivity	> 1.0E+15	ohms·cm	IEC 60093
Dielectric Strength	31	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
100 Hz	4.50		IEC 60250
1 MHz	4.10		IEC 60250
Dissipation Factor			IEC 60250
100 Hz	2.2E-3		IEC 60250
1 MHz	0.016		IEC 60250
Comparative Tracking Index	425	V	IEC 60112
Flammability	Nominal Value	Unit	Test Method
Flame Rating	HB		UL 94
Injection	Nominal Value	Unit	
Drying Temperature	120 - 130	°C	
Drying Time	4.0	hr	
Suggested Max Moisture	0.020	%	
Suggested Max Regrind	25	%	
Hopper Temperature	20.0 - 50.0	°C	
Rear Temperature	230 - 240	°C	
Middle Temperature	235 - 250	°C	
Front Temperature	235 - 250	°C	
Nozzle Temperature	250 - 260	°C	
Processing (Melt) Temp	235 - 260	°C	
Mold Temperature	65.0 - 93.0	°C	
Injection Rate	Moderate-Fast		
Back Pressure	0.00 - 0.345	MPa	
Injection instructions			
Manifold Temperature: 250 to 260°CZone 4 Temperature: 240 to 260°CFeed Temperature: 230 to 240°C			
NOTE			
1.	10°C/min		

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