NORYL™ RESIN SE1GFN1

REGION ASIA

DESCRIPTION

NORYL™ SE1GFN1 resin is a 10% glass reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V1 at 1.5mm along with UL746C Outdoor Suitability rating of F1 and RTI 110C. NORYL SE1GFN1 exhibits high heat resistance, good dielectric strength, dimensional stability, hydrolytic stability, and very low moisture absorption. This material is an excellent candidate for solar / photovoltaic (PV) junction boxes, appliance internals, indoor and outdoor electrical enclosures / housings / connectors.

TYPICAL PROPERTY VALUES

Revision 20190717

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	74	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	119	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	3990	MPa	ASTM D 790
Hardness, Rockwell L	104	-	ASTM D 785
IMPACT			
Izod Impact, notched, 23°C	96	J/m	ASTM D 256
Izod Impact, notched, -40°C	69	J/m	ASTM D 256
THERMAL			
Vicat Softening Temp, Rate B/50	147	°C	ASTM D 1525
HDT, 1.82 MPa, 6.4 mm, unannealed	131	°C	ASTM D 648
Relative Temp Index, Elec [1]	110	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	105	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	110	°C	UL 746B
PHYSICAL			
Specific Gravity	1.16	-	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Water Absorption, equilibrium, 23C	0.22	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.3 – 0.5	%	SABIC method
ELECTRICAL			
Volume Resistivity	1.E+15	Ohm-cm	ASTM D 257
Relative Permittivity, 50/60 Hz	3	-	ASTM D 150
Relative Permittivity, 1 MHz	3	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0017	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0016	-	ASTM D 150
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥0.71	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 1	≥0.71	mm	UL 746A
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-228589	-	-

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link 2	E45587-101825569	-	-
UL Recognized, 94-5VA Flame Class Rating	≥2.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥0.44	mm	UL 94
Oxygen Index (LOI)	33.9	%	ASTM D 2863
INJECTION MOLDING			
Drying Temperature	105 – 110	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	280 – 310	°C	
Nozzle Temperature	280 – 310	°C	
Front - Zone 3 Temperature	270 – 310	°C	
Middle - Zone 2 Temperature	260 – 305	°C	
Rear - Zone 1 Temperature	250 – 300	°C	
Mold Temperature	75 – 105	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	

(1) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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