NORYL™ RESIN SE1GFN3

REGION ASIA

DESCRIPTION

NORYL™ SE1GFN3 resin is a 30% 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 of 110C. NORYL SE1GFN3 exhibits high heat resistance, good dielectric strength, dimensional stability, hydrolytic stability, and very low moisture absorption. This material is an excellent candidate for a variety of applications such as solar frames, unattended power supply (UPS) inverter/charger, indoor and outdoor electrical enclosures / housings / connectors, and wall plates / sockets / switches.

TYPICAL PROPERTY VALUES

Revision 20190717

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 5 mm/min	120	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	172	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	7790	MPa	ASTM D 790
Hardness, Rockwell L	108	-	ASTM D 785
IMPACT			
Izod Impact, notched, 23°C	117	J/m	ASTM D 256
Izod Impact, notched, -40°C	96	J/m	ASTM D 256
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	140	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	135	°C	ASTM D 648
CTE, -40°C to 95°C, flow	2.52E-05	1/°C	ASTM E 831
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	1.31	-	ASTM D 792
Water Absorption, 24 hours	0.06	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.1 – 0.4	%	SABIC method
ELECTRICAL			
Dielectric Strength, in oil, 3.2 mm	20.8	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	3.15	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.002	-	ASTM D 150
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 2	≥1.5	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥1.5	mm	UL 746A
FLAME CHARACTERISTICS [1]			
UL Yellow Card Link	E207780-228591	-	-
UL Yellow Card Link 2	E45587-237105	-	-
UL Recognized, 94V-1 Flame Class Rating	≥0.71	mm	UL 94

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Oxygen Index (LOI)	35.5	%	ASTM D 2863
INJECTION MOLDING			
Drying Temperature	110 – 120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	300 – 325	°C	
Nozzle Temperature	300 – 325	°C	
Front - Zone 3 Temperature	290 – 325	°C	
Middle - Zone 2 Temperature	275 – 320	°C	
Rear - Zone 1 Temperature	265 – 315	°C	
Mold Temperature	80 – 110	°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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