NORYL™ Resin SE1GFN1

REGION AMERICAS

DESCRIPTION

NORYL SE1GFN1 resin is a 10% glass fiber reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). 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 appliance internals, indoor and outdoor electrical enclosures / housings / connectors.

GENERAL INFORMATION	
Features	Flame Retardant, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, High stiffness/Strength, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive EV Batteries
Building and Construction	Water Management
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Energy Management, Mobile Phone - Computer - Tablets
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260907

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	74	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	5	%	ASTM D638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	119	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	3990	MPa	ASTM D790
Hardness, Rockwell L	104	-	ASTM D785
IMPACT [1]			
Izod impact, notched			
23°C	96	J/m	ASTM D256
-40°C	69	J/m	ASTM D256
THERMAL [1]			
Vicat Softening Temp, Rate B/50	147	°C	ASTM D1525
HDT, 1.82 MPa, 6.4 mm, unannealed	131	°C	ASTM D648
Relative Temp Index, Elec [2]	110	°C	UL 746B
Relative Temp Index, Mech w/impact [2]	105	°C	UL 746B
Relative Temp Index, Mech w/o impact [2]	110	°C	UL 746B
PHYSICAL [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Specific Gravity	1.16	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.07	%	ASTM D570
Water Absorption, (23°C/Saturated)	0.22	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm [3]	0.3 – 0.5	%	SABIC method
PFAS [4]	Not Intentionally added	-	
ELECTRICAL [1]			
Volume Resistivity	1.E+15	Ω.cm	ASTM D257
Relative Permittivity, 50/60 Hz	3	-	ASTM D150
Relative Permittivity, 1 MHz	3	-	ASTM D150
Dissipation Factor, 50/60 Hz	0.0017	-	ASTM D150
Dissipation Factor, 1 MHz	0.0016	-	ASTM D150
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 1	≥1.5	mm	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
Hot-Wire Ignition (HWI), PLC 1	≥1.5	mm	UL 746A
FLAME CHARACTERISTICS [2]			
UL Yellow Card Link	E121562-221214	-	-
UL Yellow Card Link 2	E121562-100072184	-	-
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
Oxygen Index (LOI)	33.9	%	ASTM D2863
INJECTION MOLDING [5]			
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) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

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

(3) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(4) No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

(5) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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