NORYL™ SE1GFN1 resin

Polyphenylene Ether + PS

SABIC Innovative Plastics

Message:

NORYL SE1GFN1 is a 10% glass reinforced, injection moldable modified polyphenylene ether resin. Designed for improved dimensional stability and good flow , this resin also uses non-chlorinated, non-brominated FR additives to achieve a V1 UL94 rating at 1.0 mm and UL94 5VA rating @ 2.5 mm. NORYL SE1GFN1 has a GWIT of 775C@ 1.00 mm according to IEC 60695-2-13, and a CTI > 250 V according to IEC 60112 (Color dependant). NORYL SE1GFN1 may be an excellent material candidate for electrical or electronic applications requiring good rheological properties, heat resistance, hydrolysis resistance, low density and thin wall flame resistance. SE1GFN1 is halogen free according to VDE/DIN 472 part 815.

General Information			
UL YellowCard	E45329-306538		
Filler / Reinforcement	Glass fiber reinforced material, 10% filler by weight		
Additive	Flame retardancy		
Features	Chlorine Free Good dimensional stability Low density Good liquidity Heat resistance, medium Hydrolysis resistance Bromine-free Flame retardancy		
Uses	Electrical/Electronic Applications		
Agency Ratings	DIN VDE 0472 part 815		
RoHS Compliance	RoHS compliance		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	1.16	g/cm³	ASTM D792
--	1.17	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (280°C/10.0 kg)	15.0	cm³/10min	ISO 1133
Molding Shrinkage - Flow [1]	0.30 - 0.50	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	0.22	%	ISO 62
Equilibrium, 23°C, 50% RH	0.070	%	ISO 62
Hardness	**Nominal Value**	**Unit**	**Test Method**
Ball Indentation Hardness (H 358/30)	100	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	4000	MPa	ISO 527-2/1
Tensile Stress			ISO 527-2/5

Yield	75.0	MPa	ISO 527-2/5
Fracture	70.0	MPa	ISO 527-2/5
Tensile Strain			ISO 527-2/5
Yield	2.5	%	ISO 527-2/5
Fracture	3.0	%	ISO 527-2/5
Flexural Modulus [2]	3000	MPa	ISO 178
Flexural Stress	110	MPa	ISO 178
Taber Abrasion Resistance (1000 Cycles, 1000 g, CS-17 Wheel)	50.0	mg	Internal method
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength [3]			ISO 179/1eA
-40°C	5.1	kJ/m²	ISO 179/1eA
-30°C	5.2	kJ/m²	ISO 179/1eA
23°C	6.1	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength			ISO 179/1eU
-30°C [4]	30	kJ/m²	ISO 179/1eU
23°C [5]	30	kJ/m²	ISO 179/1eU
Notched Izod Impact			ISO 180/1A
-40°C [6]	6.2	kJ/m²	ISO 180/1A
-30°C [7]	6.2	kJ/m²	ISO 180/1A
23°C [8]	7.1	kJ/m²	ISO 180/1A
Unnotched Izod Impact Strength [9]			ISO 180/1U
-30°C	25	kJ/m²	ISO 180/1U
23°C	25	kJ/m²	ISO 180/1U
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature [10]			
0.45 MPa, unannealed, 100 mm span	140	°C	ISO 75-2/Be
1.8 MPa, unannealed, 100 mm span	135	°C	ISO 75-2/Ae
Vicat Softening Temperature			
--	145	°C	ISO 306/A50, ISO 306/B120
--	140	°C	ISO 306/B50
Ball Pressure Test			IEC 60695-10-2
125°C	Pass		IEC 60695-10-2
135°C [11]	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	5.5E-4	cm/cm/°C	ASTM E831, ISO 11359-2
Flow: 23 to 80°C	5.0E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	6.8E-5	cm/cm/°C	ASTM E831, ISO 11359-2
Lateral: 23 to 80°C	7.0E-5	cm/cm/°C	ISO 11359-2
Thermal Conductivity	0.27	W/m/K	ISO 8302
RTI Elec	110	°C	UL 746
RTI Imp	105	°C	UL 746

RTI	110	°C	UL 746
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			IEC 60243-1
0.800mm, in oil	33	kV/mm	IEC 60243-1
1.60mm, in oil	26	kV/mm	IEC 60243-1
3.20mm, in oil	16	kV/mm	IEC 60243-1
Relative Permittivity			IEC 60250
50 Hz	2.80		IEC 60250
60 Hz	2.80		IEC 60250
1 MHz	2.70		IEC 60250
Dissipation Factor			IEC 60250
50 Hz	5.0E-3		IEC 60250
60 Hz	5.0E-3		IEC 60250
1 MHz	3.0E-3		IEC 60250
Comparative Tracking Index	250	V	IEC 60112
Needle Flame Test [12] (1.50 mm)	Pass		IEC 60695-11-5
High Voltage Arc Tracking Rate (HVTR)	PLC 4		UL 746
Flammability	**Nominal Value**	**Unit**	**Test Method**
Flame Rating			UL 94
1.00 mm, Testing by SABIC	V-1		UL 94
1.50 mm	V-1		UL 94
2.50 mm, Testing by SABIC	5VA		UL 94
Glow Wire Flammability Index (1.00 mm)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature			IEC 60695-2-13
1.00 mm	775	°C	IEC 60695-2-13
2.00 mm	800	°C	IEC 60695-2-13
3.00 mm	800	°C	IEC 60695-2-13
Oxygen Index	30	%	ISO 4589-2
Injection	**Nominal Value**	**Unit**	
Drying Temperature	100 - 120	°C	
Drying Time	2.0 - 3.0	hr	
Hopper Temperature	60.0 - 80.0	°C	
Rear Temperature	240 - 260	°C	
Middle Temperature	260 - 280	°C	
Front Temperature	280 - 300	°C	
Nozzle Temperature	260 - 280	°C	
Processing (Melt) Temp	280 - 300	°C	
Mold Temperature	80.0 - 120	°C	
NOTE			
1.	Tensile Bar		

2.	2.0 mm/min
3.	80*10*3 sp=62mm
4.	80*10*3 sp=62mm
5.	80*10*4 sp=62mm
6.	80*10*3
7.	80*10*4
8.	80*10*4
9.	80*10*4
10.	120*10*4 mm
11.	Approximate maximum
12.	10 sec

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China