

NORYL™ RESIN SE1GFN2

REGION ASIA

DESCRIPTION

PPE+PS blend. 20% Glass reinforced. Non-brominated, non-chlorinated FR system. UL94 V1 and 5VA listing. RTI 110/105/110. Dielectric strength. Dimensional stability. Suitable for E/E applications.

TYPICAL PROPERTY VALUES

Revision 20180906

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, brk, Type I, 50 mm/min	120	MPa	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	7100	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	140	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	5500	MPa	ASTM D 790
Tensile Stress, break, 50 mm/min	100	MPa	ISO 527
Tensile Strain, break, 50 mm/min	2.5	%	ISO 527
Tensile Modulus, 1 mm/min	6400	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	150	MPa	ISO 178
Flexural Modulus, 2 mm/min	5600	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	520	J/m	ASTM D 4812
Izod Impact, notched, 23°C	100	J/m	ASTM D 256
Izod Impact, notched, -30°C	90	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	18	J	ASTM D 3763
Izod Impact, unnotched 80°10'4 +23°C	28	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80°10'4 -30°C	27	kJ/m ²	ISO 180/1U
Izod Impact, notched 80°10'4 +23°C	9	kJ/m ²	ISO 180/1A
Izod Impact, notched 80°10'4 -30°C	8	kJ/m ²	ISO 180/1A
Charpy Impact, notched, 23°C	7	kJ/m ²	ISO 179/2C
THERMAL			
Vicat Softening Temp, Rate B/50	142	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	142	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	134	°C	ASTM D 648
CTE, -40°C to 40°C, flow	2.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.5E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	3.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.5E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	142	°C	ISO 306
Vicat Softening Temp, Rate B/120	144	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80°10'4 sp=64mm	133	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.23	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.2 – 0.5	%	SABIC method

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Melt Flow Rate, 280°C/5.0 kgf	3.5	g/10 min	ASTM D 1238
Water Absorption, 23°C/24hrs	0.11	%	ISO 62-1
Moisture Absorption, 50% RH, 24hrs, Equilibrium	0.04	%	ISO 62-4
Melt Volume Rate, MVR at 280°C/5.0 kg	3	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	2.04E+16	Ohm-cm	ASTM D 257
Surface Resistivity	1.34E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 1.6 mm	26.2	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	2.93	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0034	-	ASTM D 150
Volume Resistivity	2.04E+16	Ohm-cm	IEC 60093
Surface Resistivity, ROA	1.34E+17	Ohm	IEC 60093
Dielectric Strength in oil, 1.5mm	26.2	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.9	-	IEC 60250
Dissipation Factor, 1 MHz	0.0034	-	IEC 60250
FLAME CHARACTERISTICS			
UL Recognized, 94V-1 Flame Class Rating	1.5	mm	UL 94
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	%	

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