NORYL™ RESIN SE100X

REGION ASIA

DESCRIPTION

NORYL™ SE100X resin is a non-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 V0 at 6mm and V1 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL SE100X resin offers strong electrical performance, low moisture absorption, good flow, dimensional stability, and hydrolytic stability. This material is an excellent candidate for indoor and outdoor electrical enclosures, wall plate / socket, and switch / connector applications.

TYPICAL PROPERTY VALUES

Revision 20190717

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	57	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	46	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	6.5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	25	%	ASTM D 638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	82	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	2300	MPa	ASTM D 790
IMPACT			
Izod Impact, notched, 23°C	256	J/m	ASTM D 256
Izod Impact, notched, -30°C	90	J/m	ASTM D 256
Instrumented Impact Energy @ peak, 23°C	40	J	ASTM D 3763
Instrumented Impact Energy @ peak, -30	16	J	ASTM D 3763
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	102	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	92	°C	ASTM D 648
Relative Temp Index, Elec [1]	95	°C	UL 746B
Relative Temp Index, Mech w/impact [1]	80	°C	UL 746B
Relative Temp Index, Mech w/o impact [1]	95	°C	UL 746B
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow	0.5 – 0.7	%	SABIC method
ELECTRICAL			
Volume Resistivity	3.1E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+15	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	17.9	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.66	-	ASTM D 150
Relative Permittivity, 1 MHz	2.57	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.006	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0026	-	ASTM D 150
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	1	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥1.5	mm	UL 746A

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Hot-Wire Ignition (HWI), PLC 1	≥6	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 2	≥1.5	mm	UL 746A
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
FLAME CHARACTERISTICS (1)			
UL Yellow Card Link	E207780-228588	-	-
UL Recognized, 94V-0 Flame Class Rating	≥6	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	≥1.5	mm	UL 94
Radiant Panel Listing	☑	-	UL Tested
UV-light, water exposure/immersion	F1	-	UL 746C
Oxygen Index (LOI)	32.5	%	ASTM D 2863
INJECTION MOLDING			
Drying Temperature	75 – 80	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 275	°C	
Nozzle Temperature	250 – 275	°C	
Front - Zone 3 Temperature	240 – 275	°C	
Middle - Zone 2 Temperature	225 – 270	°C	
Rear - Zone 1 Temperature	215 – 265	°C	
Mold Temperature	55 – 75	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	
Vent Depth	0.038 – 0.051	mm	

(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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