

# NORYL™ RESIN N300X

REGION AMERICAS

## DESCRIPTION

PPE+PS blend. Unfilled. Non-brominated, non-chlorinated FR system. UL94 V0. High heat. Dielectric strength. Dimensional stability. Suitable for E/E applications.

## TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	74	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	73	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.3	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	7.6	%	ASTM D 638
Tensile Modulus, 5 mm/min	2380	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	110	MPa	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	110	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2650	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	2500	MPa	ASTM D 790
Hardness, Rockwell R	119	-	ASTM D 785
Tensile Stress, yield	75	MPa	ISO 527
Tensile Stress, break	66	MPa	ISO 527
Tensile Strain, yield	5.2	%	ISO 527
Tensile Strain, break	13	%	ISO 527
Tensile Modulus, 1 mm/min	2220	MPa	ISO 527
Flexural Stress	112	MPa	ISO 178
Flexural Modulus	2520	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	190	J/m	ASTM D 256
Izod Impact, notched, -30°C	55	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	54	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	15	kJ/m <sup>2</sup>	ISO 180/1A
<b>THERMAL</b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	155	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	140	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	145	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	162	°C	ISO 306
Vicat Softening Temp, Rate B/120	164	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	156	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	140	°C	ISO 75/Ae
Relative Temp Index, Elec	105	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Mech w/o impact	105	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.1	-	ASTM D 792
Water Absorption, equilibrium, 23C	0.06	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Mold Shrinkage on Tensile Bar, xflow	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 280°C/5.0 kgf	7.4	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 280°C/5.0 kg	7	cm <sup>3</sup> /10 min	ISO 1133
<b>ELECTRICAL</b>			
Volume Resistivity	1.E+17	Ohm-cm	ASTM D 257
Surface Resistivity	1.E+17	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	19.4	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.68	-	ASTM D 150
Relative Permittivity, 1 MHz	2.63	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0031	-	ASTM D 150
Dissipation Factor, 1 MHz	0.009	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	0	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	4	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	3	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating	1.47	mm	UL 94
<b>INJECTION MOLDING</b>			
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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