

NORYL™ RESIN PX1005X

REGION AMERICAS

DESCRIPTION

PPE+PS blend. Unfilled. Non-brominated, non-chlorinated FR system. UL94 V0/5VA rated. UL746C F1. Excellent dielectric strength. Suitable for E/E market in indoor/outdoor applications.

TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	55	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	41	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	3.1	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	17	%	ASTM D 638
Tensile Modulus, 50 mm/min	2400	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	80	MPa	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	79	MPa	ASTM D 790
Flexural Modulus	2430	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	2200	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	53	MPa	ISO 527
Tensile Stress, break, 50 mm/min	43	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	2.8	%	ISO 527
Tensile Strain, break, 50 mm/min	12.5	%	ISO 527
Tensile Modulus, 1 mm/min	2460	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	76	MPa	ISO 178
Flexural Modulus, 2 mm/min	2480	MPa	ISO 178
IMPACT			
Izod Impact, unnotched, 23°C	1174	J/m	ASTM D 4812
Izod Impact, notched, 23°C	300	J/m	ASTM D 256
Izod Impact, notched, -30°C	90	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	22	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	23	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	107	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	84	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	72	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	88	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	78	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.9E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	1.03E-04	1/°C	ASTM E 831
Vicat Softening Temp, Rate B/50	94	°C	ISO 306
Vicat Softening Temp, Rate B/120	97	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120*10*4 sp=100mm	88	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120*10*4 sp=100mm	75	°C	ISO 75/Ae

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Elec	95	°C	UL 746B
Relative Temp Index, Mech w/impact	80	°C	UL 746B
Relative Temp Index, Mech w/o impact	95	°C	UL 746B
PHYSICAL			
Specific Gravity	1.12	-	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
Melt Flow Rate, 280°C/5.0 kgf	37	g/10 min	ASTM D 1238
Melt Volume Rate, MVR at 280°C/5.0 kg	37	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	3.3E+16	Ohm-cm	ASTM D 257
Surface Resistivity	>1.E+16	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	17.7	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.67	-	ASTM D 150
Relative Permittivity, 1 MHz	2.53	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.012	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0026	-	ASTM D 150
Arc Resistance, Tungsten {PLC}	7	PLC Code	ASTM D 495
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	1	PLC Code	UL 746A
FLAME CHARACTERISTICS			
UL Recognized, 94HB Flame Class Rating	1.01	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	1.47	mm	UL 94
UL Recognized, 94-5VA Rating	2.99	mm	UL 94
UV-light, water exposure/immersion	F1	-	UL 746C
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	



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