

NORYL™ RESIN PX9406P

REGION ASIA

DESCRIPTION

NORYL™ PX9406P 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 5VA at 2.5mm and V0 at 0.75mm. NORYL PX9406P is VDE certified IEC60335 and offers strong electrical performance at thin wall, high heat resistance, Low Warpage, low moisture absorption, and dimensional stability. This material is an excellent candidate for unattended appliance applications such as printed circuit board (PCB) holders, terminal blocks + connectors, circuit protection / relay / switches, motor end caps, control box / panels, and battery charger / fuse holders where VDE IEC60335 is required.

TYPICAL PROPERTY VALUES

Revision 20191031

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yield	63	MPa	SABIC - Japan Method
Tensile Strain, break	8.5	%	SABIC - Japan Method
Flexural Stress	99	MPa	ASTM D 790
Flexural Modulus	2350	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	73	MPa	ISO 527
Tensile Strain, break, 50 mm/min	8	%	ISO 527
Flexural Stress, yield, 2 mm/min	110	MPa	ISO 178
Flexural Modulus, 2 mm/min	2500	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	140	J/m	ASTM D 256
Izod Impact, notched 80*10*4 +23°C	10	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 0°C	11	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -10°C	10	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -20°C	9	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	6	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -40°C	8	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	11	kJ/m ²	ISO 179/1eA
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	9	kJ/m ²	ISO 179/1eU
THERMAL			
HDT, 0.45 MPa, 6.4 mm, unannealed	136	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	122	°C	ASTM D 648
CTE, -30°C to 30°C	7.E-05	1/°C	TMA
CTE, -40°C to 40°C, flow	8.E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	8.E-05	1/°C	ISO 11359-2
Ball Pressure Test, approximate maximum	125	°C	IEC 60695-10-2
Vicat Softening Temp, Rate A/120	150	°C	ISO 306
Vicat Softening Temp, Rate B/120	140	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	117	°C	ISO 75/Af
Relative Temp Index, Elec ⁽¹⁾	110	°C	UL 746B
Relative Temp Index, Mech w/impact ⁽¹⁾	105	°C	UL 746B
Relative Temp Index, Mech w/o impact ⁽¹⁾	110	°C	UL 746B

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PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Water Absorption, 24 hours	0.07	%	ASTM D 570
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 250°C/10.0 kgf	3.9	g/10 min	ASTM D 1238
Density	1.1	g/cm ³	ISO 1183
Melt Volume Rate, MVR at 280°C/5.0 kg	10	cm ³ /10 min	ISO 1133
Melt Viscosity, 280°C, 1500 sec-1	278	Pa-s	ISO 11443
ELECTRICAL			
Surface Resistivity	1.E+16	Ohm	ASTM D 257
Relative Permittivity, 50/60 Hz	2.8	-	ASTM D 150
Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
High Amp Arc Ignition (HAI), PLC 0	≥0.75	mm	UL 746A
Hot-Wire Ignition (HWI), PLC 0	≥0.75	mm	UL 746A
High Voltage Arc Track Rate {PLC}	4	PLC Code	UL 746A
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D 495
FLAME CHARACTERISTICS ⁽¹⁾			
UL Yellow Card Link	E207780-228585	-	-
UL Yellow Card Link 2	E207780-631706	-	-
UL Yellow Card Link 3	E45587-237098	-	-
UL Yellow Card Link 4	E45587-631707	-	-
UL Recognized, 94-5VA Flame Class Rating	≥2.5	mm	UL 94
UL Recognized, 94-5VB Flame Class Rating	≥2	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	≥0.75	mm	UL 94
UL Recognized, 94V-2 Flame Class Rating	≥0.4	mm	UL 94
Glow Wire Flammability Index, 0.75 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Ignitability Temperature, 0.75 mm	750	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	775	°C	IEC 60695-2-13
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING			
Drying Temperature	105 – 110	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	275 – 305	°C	
Nozzle Temperature	275 – 305	°C	
Front - Zone 3 Temperature	265 – 305	°C	
Middle - Zone 2 Temperature	255 – 300	°C	
Rear - Zone 1 Temperature	245 – 295	°C	
Mold Temperature	70 – 100	°C	

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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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