

# NORYL™ RESIN PX9406K

REGION ASIA

## DESCRIPTION

NORYL PX9406K resin may be suitable for consumer electronics applications. Flame retardant used is non-halogenated. UL94 V0 at 1.5 mm, 5VB at 2 mm, and 5VA at 2.5 mm. RTI (impact) = 105 C

## TYPICAL PROPERTY VALUES

Revision 20180905

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL</b>			
Tensile Stress, yld, Type I, 50 mm/min	66	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.7	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	45	%	ASTM D 638
Tensile Modulus, 50 mm/min	2700	MPa	ASTM D 638
Flexural Stress, yield, 6.4 mm	101	MPa	ASTM D 790
Flexural Stress, yld, 1.3 mm/min, 50 mm span	100	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2650	MPa	ASTM D 790
Flexural Modulus, 6.4 mm	2650	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	67	MPa	ISO 527
Tensile Stress, break, 50 mm/min	52	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	55	%	ISO 527
Tensile Modulus, 1 mm/min	2550	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	104	MPa	ISO 178
Flexural Modulus, 2 mm/min	2420	MPa	ISO 178
<b>IMPACT</b>			
Izod Impact, notched, 23°C	170	J/m	ASTM D 256
Izod Impact, notched, -30°C	100	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	55	J	ASTM D 3763
Izod Impact, notched 80°10°4 +23°C	12	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80°10°4 -30°C	5	kJ/m <sup>2</sup>	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10°4 sp=62mm	13	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80°10°4 sp=62mm	5	kJ/m <sup>2</sup>	ISO 179/1eA
<b>THERMAL</b>			
HDT, 0.45 MPa, 3.2 mm, unannealed	128	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	113	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	130	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	121	°C	ASTM D 648
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate A/120	144	°C	ISO 306
Vicat Softening Temp, Rate B/120	134	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80°10°4 sp=64mm	111	°C	ISO 75/Af
Relative Temp Index, Elec	110	°C	UL 746B

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	110	°C	UL 746B
<b>PHYSICAL</b>			
Specific Gravity	1.1	-	ASTM D 792
Density	1.1	g/cm <sup>3</sup>	ISO 1183
Melt Volume Rate, MVR at 250°C/10.0 kg	7	cm <sup>3</sup> /10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/5.0 kg	11	cm <sup>3</sup> /10 min	ISO 1133
Melt Viscosity, 250°C, 1500 sec-1	525	Pa-s	ISO 11443
Melt Viscosity, 260°C, 1500 sec-1	390	Pa-s	ISO 11443
Melt Viscosity, 280°C, 1500 sec-1	250	Pa-s	ISO 11443
<b>ELECTRICAL</b>			
Volume Resistivity	1.4E+17	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 3.2 mm	49	kV/mm	ASTM D 149
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
Comparative Tracking Index	250	V	IEC 60112
<b>FLAME CHARACTERISTICS</b>			
UL Compliant, 94V-0 Flame Class Rating	1.5	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VA Rating	2.5	mm	UL 94 by SABIC-IP
UL Compliant, 94-5VB Rating	2	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	1.5	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.5 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	800	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
<b>INJECTION MOLDING</b>			
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	
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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