



NORYL™ Resin NH6010B

Americas: COMMERCIAL

NORYL NH6010B resin is a high performance, modified PPE-PS blend that exhibits an excellent balance of lower smoke production upon burning, nonhalogenated flame retardance and low specific gravity. This grade can be processed via extrusion or injection molding. NORYL NH6010B is available in custom colors and may be an excellent material candidate for use in building and construction and electrical markets.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	650	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	540	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	20	%	ASTM D 638
Tensile Modulus, 5 mm/min	22600	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1010	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	24300	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 50 mm/min	64	MPa	ISO 527
Tensile Stress, break, 50 mm/min	58	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.7	%	ISO 527
Tensile Strain, break, 50 mm/min	8.3	%	ISO 527
Tensile Modulus, 1 mm/min	2440	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	100	MPa	ISO 178
Flexural Modulus, 2 mm/min	2360	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	30	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	18	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	530	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	18	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	14	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	20	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	143	°C	ASTM D 1525



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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
THERMAL			
HDT, 1.82 MPa, 3.2mm, unannealed	122	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	6.7E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.7E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	143	°C	ISO 306
Vicat Softening Temp, Rate B/120	146	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	124	°C	ISO 75/Af
Relative Temp Index, Elec	65	°C	UL 746B
Relative Temp Index, Mech w/impact	65	°C	UL 746B
Relative Temp Index, Mech w/o impact	65	°C	UL 746B
PHYSICAL			
Specific Gravity	1.11	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.8	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	5.6	g/10 min	ASTM D 1238
Density	1.11	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.2	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	5	cm ³ /10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	7.62E+17	Ohm-cm	ASTM D 257
Surface Resistivity	1.25E+18	Ohm	ASTM D 257
Dielectric Strength, in oil, 3.2 mm	34.1	kV/mm	ASTM D 149
Relative Permittivity, 1 MHz	2.78	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0029	-	ASTM D 150



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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
ELECTRICAL			
Hot Wire Ignition {PLC}	2	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	1	PLC Code	UL 746A
Volume Resistivity	7.62E+17	Ohm-cm	IEC 60093
Surface Resistivity, ROA	1.25E+18	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	34.1	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 1 MHz	0.002	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
FLAME CHARACTERISTICS			
UL Compliant, 94V-0 Flame Class Rating (3)(4)	1.5	mm	UL 94 by SABIC-IP
M1 Flame Class Rating	2	mm	NF P 92501
Flame Spread Index (1.52mm)	15	-	ASTM E 162
NBS Smoke Density, Flaming, 4 min (1.52mm)	30	-	ASTM E 662
NBS Smoke Density, Flaming, 4 min (3.2 mm)	30	-	ASTM E 662
NBS Smoke Density, Flaming, 20 min (3.2 mm)	120	-	ASTM E 662
NBS Smoke Density, Non-Flaming, 4 min (1.52mm)	7	-	ASTM E 662
Glow Wire Flammability Index 960°C, passes at	1.5	mm	IEC 60695-2-12
Glow Wire Ignitability Temperature, 1.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	775	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 3.0 mm	800	°C	IEC 60695-2-13
Oxygen Index (LOI)	33	%	ISO 4589
Toxicity	0	-	ISO 5659-2
Toxicity (3 mm)	21.76	-	NF X70-100
F1 Class Smoke and Toxicity Rating	3	mm	NF F16-101
Ds_4min	70	-	ISO 5659-2
Heat Release, MAHRE	33.6	kW/m²	ISO 5660-1
Lateral Flame Spread, CFE	20	kW/m²	ISO 5658-2



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	95 - 105	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	12	hrs
Melt Temperature	280 - 305	°C
Nozzle Temperature	295 - 305	°C
Front - Zone 3 Temperature	295 - 305	°C
Middle - Zone 2 Temperature	290 - 300	°C
Rear - Zone 1 Temperature	280 - 295	°C
Mold Temperature	65 - 100	°C
Screw Speed	40 - 80	rpm
Shot to Cylinder Size	30 - 70	%
Sheet Extrusion		
Drying Temperature	95 - 105	°C
Drying Time	2 - 4	hrs
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.07	%
Melt Temperature	220 - 260	°C
Barrel - Zone 1 Temperature	220 - 260	°C
Barrel - Zone 2 Temperature	220 - 260	°C
Barrel - Zone 3 Temperature	220 - 260	°C
Barrel - Zone 4 Temperature	220 - 260	°C
Adapter Temperature	220 - 260	°C
Die Temperature	220 - 260	°C
Roll Stack Temp - Top	90 - 150	°C
Roll Stack Temp - Middle	90 - 150	°C
Roll Stack Temp - Bottom	90 - 150	°C
Profile Extrusion		
Drying Temperature	95 - 105	°C
Drying Time	2 - 4	hrs



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Profile Extrusion		
Drying Time (Cumulative)	12	hrs
Maximum Moisture Content	0.07	%
Melt Temperature	220 - 260	°C
Barrel - Zone 1 Temperature	220 - 260	°C
Barrel - Zone 2 Temperature	220 - 260	°C
Barrel - Zone 3 Temperature	220 - 260	°C
Barrel - Zone 4 Temperature	220 - 260	°C
Hopper Temperature	80 - 120	°C
Adapter Temperature	220 - 260	°C
Die Temperature	220 - 260	°C
Calibrator Temperature	30 - 60	°C
Water Bath Temperature	30 - 50	°C



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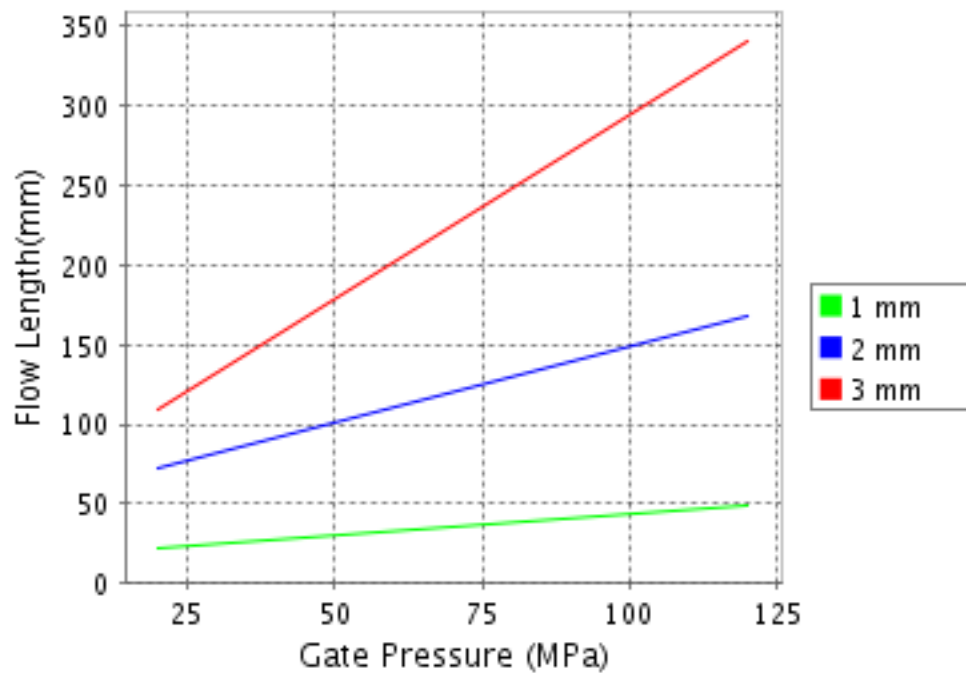
CALCULATED FLOW LENGTH INDICATION

Moldflow® Radial Flow Analysis

NORYL® NH6010B

Melt Temperature : 295°C

Mold Temperature : 85°C



Note: Technical support is recommended if Gate Pressure is greater than 80 MPa. Contact your local representative.

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