SABIC Innovative Plastics™

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.

Property

TYPICAL PROPERTIES (1)			
MECHANICAL	Value	Unit	Standard
Tensile Stress, yld, Type I, 50 mm/min	64	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	53	MPa	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	2220	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	100	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2390	MPa	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	Value	Unit	Standard
Izod Impact, notched, 23°C	300	J/m	ASTM D 256
Izod Impact, notched, -30°C	181	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	52	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	18	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	14	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	20	kJ/m²	ISO 179/1eA
THERMAL	Value	Unit	Standard
Vicat Softening Temp, Rate B/50	143	°C	ASTM D 1525
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	Value	Unit	Standard
Specific Gravity	1.11	-	ASTM D 792

Mold Shrinkage, flow, 3.2 mm	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/cm³	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	cm³/10 min	ISO 1133
ELECTRICAL	Value	Unit	Standard
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
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	0.0029	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
FLAME CHARACTERISTICS	Value	Unit	Standard
UL Compliant, 94V-0 Flame Class Rating (3)(4)	1.5	mm	UL 94 by GE
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
Draeger Tube Toxicity, Flaming (1.52mm)	Pass	-	Based on ASTM E 662
NBS Smoke Density, Non-Flaming, 4 min (1.52mm)	7	-	ASTM E 662
Draeger Tube Toxicity, Non-Flaming (1.52mm)	Pass	-	Based on 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

Source GMD, last updated:08/02/2007

Processing

Parameter Injection Molding	Value	Unit
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	%
Parameter Sheet Extrusion	Value	Unit
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
Parameter Profile Extrusion	Value	Unit
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
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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THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.
(2) Only typical data for selection purposes. Not to be used for part or tool design.
(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.
(4) Internal measurements according to UL standards.

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