



NORYL™ Resin NH5120
Americas: COMMERCIAL

NORYL NH5120 Resin is an unreinforced blend of Polyphenylene Ether(PPE) + Polystyrene resin. The material offers a good balance of heat, flow, hydrolytic stability, and non-halogenated V1 flame retardant performance. The material is suitable for injection molding and is available in custom colors.

TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	670	kgf/cm ²	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	530	kgf/cm ²	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	4.5	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	29	%	ASTM D 638
Tensile Modulus, 50 mm/min	26600	kgf/cm ²	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	1070	kgf/cm ²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	27300	kgf/cm ²	ASTM D 790
Tensile Stress, yield, 50 mm/min	65	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.4	%	ISO 527
Tensile Strain, break, 50 mm/min	9.2	%	ISO 527
Tensile Modulus, 1 mm/min	2650	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	105	MPa	ISO 178
Flexural Modulus, 2 mm/min	2610	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	18	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	11	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	545	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	15	kJ/m ²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	12	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	17	kJ/m ²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	136	°C	ASTM D 1525



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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	131	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	116	°C	ASTM D 648
HDT, 0.45 MPa, 6.4 mm, unannealed	134	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	123	°C	ASTM D 648
CTE, -40°C to 40°C, flow	8.1E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.7E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	8.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.7E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	136	°C	ISO 306
Vicat Softening Temp, Rate B/120	138	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	118	°C	ISO 75/Af
Relative Temp Index, Elec	110	°C	UL 746B
Relative Temp Index, Mech w/impact	105	°C	UL 746B
Relative Temp Index, Mech w/o impact	110	°C	UL 746B
PHYSICAL			
Specific Gravity	1.1	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.5 - 0.7	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	12.2	g/10 min	ASTM D 1238
Density	1.08	g/cm ³	ISO 1183
Water Absorption, (23°C/sat)	0.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 280°C/5.0 kg	11	cm ³ /10 min	ISO 1133
ELECTRICAL			
Hot Wire Ignition {PLC}	1	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	0	PLC Code	UL 746A



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TYPICAL PROPERTIES ¹	TYPICAL VALUE	Unit	Standard
ELECTRICAL Comparative Tracking Index (UL) {PLC}	2	PLC Code	UL 746A
FLAME CHARACTERISTICS UL Recognized, 94V-1 Flame Class Rating (3)	1.5	mm	UL 94



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PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	105 - 110	°C
Drying Time	3 - 4	hrs
Drying Time (Cumulative)	8	hrs
Maximum Moisture Content	0.02	%
Melt Temperature	280 - 310	°C
Nozzle Temperature	280 - 310	°C
Front - Zone 3 Temperature	270 - 310	°C
Middle - Zone 2 Temperature	260 - 305	°C
Rear - Zone 1 Temperature	250 - 300	°C
Mold Temperature	75 - 105	°C
Back Pressure	0.3 - 0.7	MPa
Screw Speed	20 - 100	rpm
Shot to Cylinder Size	30 - 70	%