

**NORYL™ Resin NH5120RC3**

(PPE+PS)

Saudi Basic Industries Corporation (SABIC)

**Product Texts**

NORYL NH5120RC3 resin is an unfilled Post Consumer recycle (PCR) based injection moldable modified polyphenylene ether resin comprising at least 30% PCR styrenic series resin content. This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V1 at 1.5mm. NORYL NH5120RC3 resin offers a good balance of heat, flow, hydrolytic stability, low creep and dimensional stability along with mechanical property retention in tough outdoor environments. This material is an excellent candidate for outdoor housings / enclosures, HVAC components, and photovoltaic / solar junction box applications. Black only offering.

UL Yellow Card Link: [F121562-631687](https://www.ul.com/yellow-card/F121562-631687)

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	13	cm <sup>3</sup> /10min	ISO 1133
Temperature	280	°C	-
Load	5	kg	-
<b>ASTM Data</b>			
Melt Flow Index, MFI	13	g/10min	ASTM D 1238
Temperature	280	°C	-
Load	5	kg	-
Mold Shrinkage, MD	0.0026	mm/mm	ASTM D 955

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Tensile Modulus	2500	MPa	ISO 527
Yield stress	58	MPa	ISO 527
Nominal strain at break	7	%	ISO 527
Stress at break	48	MPa	ISO 527
Flexural modulus, 23°C	2400	MPa	ISO 178
Charpy notched impact strength, +23°C	8	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy notched impact strength, -30°C	5	kJ/m <sup>2</sup>	ISO 179/1eA
Izod impact strength, +23°C	90	kJ/m <sup>2</sup>	ISO 180/1U
Izod notched impact strength, +23°C	8	kJ/m <sup>2</sup>	ISO 180/1A
Izod notched impact strength	5	kJ/m <sup>2</sup>	ISO 180/1A
Temperature	-30	°C	-
<b>ASTM Data</b>			
Tensile Modulus	2500	MPa	ASTM D 638
Tensile Strength at Yield	62	MPa	ASTM D 638
Tensile Strength at Break	62	MPa	ASTM D 638
Flexural Modulus	2500	MPa	ASTM D 790
Izod Impact notched, 1/8 in	82	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	57	J/m	ASTM D 256
Temperature	-30	°C	-

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Temp. of deflection under load, 1.80 MPa	114	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	125	°C	ISO 75-1/-2
Vicat softening temperature, B	134	°C	ISO 306
Burning behav. at 1.5 mm nom. thickn.	V-1	class	IEC 60695-11-10
Thickness tested	1.5	mm	-
Yellow Card available	yes	-	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (1)	1	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (2)	2	mm	-
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
GWFI - thickness tested (3)	3	mm	-
Glow Wire Ignition Temperature (GWIT)	750	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	725	°C	IEC 60695-2-13

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GWIT - thickness tested (2)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	750	°C	IEC 60695-2-13
GWIT - thickness tested (3)	3	mm	-
<b>ASTM Data</b>			
UL 94 Flame rating	V-1	-	UL 94
Thickness tested	1.5	mm	-
Coefficient of Thermal Expansion, MD	73	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	70	E-6/K	ASTM D 696
DTUL @ 66 psi	128	°C	ASTM D 648
DTUL @ 264 psi	114	°C	ASTM D 648
Vicat Temperature	134	°C	ASTM D 1525

Electrical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Volume resistivity	3.2E12	Ohm*m	IEC 62631-3-1
Electric strength	26.7	kV/mm	IEC 60243-1
Comparative tracking index	200	-	IEC 60112

<b>ASTM Data</b>			
Dielectric Strength, Short Time	26.7	kV/mm	ASTM D 149
Volume Resistivity	3.2E14	Ohm*cm	ASTM D 257
Arc Resistance	420	s	ASTM D 495

Other properties	Value	Unit	Test Standard
Water absorption	0.23	%	Sim. to ISO 62
Humidity absorption	0.05	%	Sim. to ISO 62
Density	1080	kg/m <sup>3</sup>	ISO 1183
Density	1080	kg/m <sup>3</sup>	ASTM D 792

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	105 - 110	°C	-
Pre-drying - Time	3 - 4	h	-
Processing humidity	≤0.02	%	-
Melt temperature	280 - 310	°C	-
Mold temperature	75 - 105	°C	-
Zone 1	250 - 300	°C	-
Zone 2	260 - 305	°C	-
Zone 3	270 - 310	°C	-
Nozzle temperature	280 - 310	°C	-
Screw speed	20 - 100	rpm	-
Back pressure	0.3 - 0.7	MPa	-

**Characteristics****Processing**

Injection Molding

**Delivery form**

Black

**Additives**

Flame retarding agent

**Special Characteristics**

Flame retardant, Halogen-free

**Features**

Amorphous, Creep Resistance

**Certifications**

Recycled Resin Content

**Applications**

IT / Business Machine, Electrical and Electronical

**Regional Availability**

North America, Europe, Asia Pacific, South and Central America