NORYL™ Resin NH5120

(PPE+PS) Saudi Basic Industries Corporation (SABIC)

Product Texts

NORYL™ NH5120 resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V1 at 1.5mm. NORYL NH5120 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.

UL Yellow Card Link E121562-631687

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**11**	cm³/10min	ISO 1133
Temperature	**280**	°C	-
Load	**5**	kg	-
ASTM Data			
Melt Flow Index, MFI	**12.2**	g/10min	ASTM D 1238
Temperature	**280**	°C	-
Load	**5**	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**2650**	MPa	ISO 527
Yield stress	**65**	MPa	ISO 527
Yield strain	**4.4**	%	ISO 527
Stress at break	**57**	MPa	ISO 527
Strain at break	**9.2**	%	ISO 527
Flexural modulus	**2610**	MPa	ISO 178
Charpy notched impact strength, +23°C	**17**	kJ/m²	ISO 179/1eA
Izod notched impact strength, +23°C, 4mm	**15**	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	**12**	kJ/m²	ISO 180/1A
ASTM Data			
Tensile Modulus	**2610**	MPa	ASTM D 638
Tensile Strength at Yield	**66**	MPa	ASTM D 638
Tensile Strength at Break	**52**	MPa	ASTM D 638
Elongation at Yield	**4.5**	%	ASTM D 638
Elongation at Break	**29**	%	ASTM D 638
Flexural Modulus	**2680**	MPa	ASTM D 790
Izod Impact notched, 1/8 in	**186**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**111**	J/m	ASTM D 256
Temperature	**-30**	°C	-

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**118**	°C	ISO 75-1/-2
Vicat softening temperature, B	**136**	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	**138**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**81**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**77**	E-6/K	ISO 11359-1/-2
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
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Glow Wire Ignition Temperature (GWIT)	**725**	°C	IEC 60695-2-13
GWIT - thickness tested (1)	**1**	mm	-
Glow Wire Ignition Temperature (GWIT)	**700**	°C	IEC 60695-2-13
GWIT - thickness tested (2)	**2**	mm	-
Glow Wire Ignition Temperature (GWIT)	**750**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-

ASTM Data			
Coefficient of Thermal Expansion, MD	**81**	E-6/K	ASTM D 696
Coefficient of Thermal Expansion, TD	**77**	E-6/K	ASTM D 696
DTUL @ 66 psi	**131**	°C	ASTM D 648
DTUL @ 264 psi	**116**	°C	ASTM D 648
Vicat Temperature	**136**	°C	ASTM D 1525

Other properties	Value	Unit	Test Standard
Water absorption	**0.25**	%	Sim. to ISO 62
Humidity absorption	**0.05**	%	Sim. to ISO 62
Density	**1080**	kg/m³	ISO 1183
Density	**1100**	kg/m³	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

Features
Creep Resistance

Additives
Flame retarding agent

Chemical Resistance
Hydrolytically Stable

Special Characteristics
Flame retardant, Halogen-free, Heat stabilized or stable to heat

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