NORYL™ Resin NH5020 - Europe

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

Product Texts

NORYL™ NH5020 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 exhibits high heat resistance with thin-wall FR performance. NORYL NH5020 resin carries a UL94 flame rating of V0 at 0.75mm along with a UL746C Outdoor Suitability rating of F1. The material offers a good balance of affordable high heat, flow, hydrolytic stability, excellent creep resistance, dimensional stability and is a good candidate for photovoltaic / solar connectors, UPS Inverters / chargers, and outdoor enclosure applications.

UL Yellow Card Link E45329-100153208

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**10**	cm³/10min	ISO 1133
Temperature	**280**	°C	-
Load	**5**	kg	-
Density of melt	**1010**	kg/m³	-
Thermal conductivity of melt	**0.2**	W/(m K)	-
Spec. heat capacity of melt	**1780**	J/(kg K)	-
Ejection temperature	**127**	°C	-
ASTM Data			
Melt Flow Index, MFI	**9.8**	g/10min	ASTM D 1238
Temperature	**280**	°C	-
Load	**5**	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**3050**	MPa	ISO 527
Yield stress	**80**	MPa	ISO 527
Yield strain	**4.7**	%	ISO 527
Stress at break	**77**	MPa	ISO 527
Strain at break	**5.6**	%	ISO 527
Flexural modulus	**2980**	MPa	ISO 178
Charpy notched impact strength, +23°C	**7**	kJ/m²	ISO 179/1eA
Izod notched impact strength, +23°C, 4mm	**8**	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	**6**	kJ/m²	ISO 180/1A
ASTM Data			
Tensile Modulus	**2720**	MPa	ASTM D 638
Tensile Strength at Yield	**79**	MPa	ASTM D 638
Tensile Strength at Break	**62**	MPa	ASTM D 638
Elongation at Yield	**5**	%	ASTM D 638
Elongation at Break	**15**	%	ASTM D 638
Flexural Modulus	**3000**	MPa	ASTM D 790
Izod Impact notched, 1/8 in	**91**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**59**	J/m	ASTM D 256
Temperature	**-30**	°C	-

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**119**	°C	ISO 75-1/-2
Vicat softening temperature, B	**138**	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	**139**	°C	ISO 306
Coeff. of linear therm. expansion, parallel	**83.8**	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	**85.8**	E-6/K	ISO 11359-1/-2
Burning behav. at thickness h	**V-2**	class	IEC 60695-11-10
Thickness tested	**0.4**	mm	-
Burning behav. 5V at thickness h	**5VA**	class	IEC 60695-11-20
Thickness tested	**2.5**	mm	-
Glow Wire Flammability Index (GWFI)	**960**	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	**775**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-

ASTM Data			
DTUL @ 66 psi	**122**	°C	ASTM D 648
DTUL @ 264 psi	**117**	°C	ASTM D 648
Vicat Temperature	**137**	°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	**1110**	kg/m³	ISO 1183
Density	**1110**	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	**275 - 305**	°C	-
Mold temperature	**70 - 100**	°C	-
Zone 1	**245 - 295**	°C	-
Zone 2	**255 - 300**	°C	-
Zone 3	**265 - 305**	°C	-
Screw speed	**20 - 100**	rpm	-
Back pressure	**0.3 - 0.7**	MPa	-

Characteristics

Processing
Injection Molding

Additives
Flame retarding agent

Special Characteristics
Flame retardant

Chemical Resistance
Hydrolytically Stable

Regional Availability
Europe