NORYL™ Resin NHP6011

(PPE+PS)-GF8 — Saudi Basic Industries Corporation (SABIC)

Product Texts

NORYL NHP6011 resin is a 8% glass reinforced blend of polyphenylene ether (PPE). This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a CTI 2 and UL94 flame rating of V0 at 1.5mm for thin-wall molding capability. NORYL NHP6011 is based on a unique co-polymer technology and exhibits high impact, high heat resistance, dimensional stability, hydrolytic stability, strong electrical performance, low moisture absorption and very low specific gravity. This material is an excellent candidate for electrical vehicle (EV) battery modules/housings.

E207780 - 104507609

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	**15**	cm³/10min	ISO 1133
Temperature	**280**	°C	-
Load	**10**	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	**3300**	MPa	ISO 527
Stress at break	**75**	MPa	ISO 527
Strain at break	**3**	%	ISO 527
Flexural modulus	**3000**	MPa	ISO 178
Flexural strength	**115**	MPa	ISO 178
Charpy impact strength, +23°C	**35**	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	**35**	kJ/m²	ISO 179/1eU
Charpy notched impact strength, +23°C	**10**	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	**6**	kJ/m²	ISO 179/1eA
Izod impact strength, +23°C, 4mm	**35**	kJ/m²	ISO 180/1U
Izod impact strength, -30°C, 4mm	**35**	kJ/m²	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	**10**	kJ/m²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	**6**	kJ/m²	ISO 180/1A
Rockwell hardness	**M 71**	-	ISO 2039-2
Ball indentation hardness	**161**	MPa	ISO 2039-1
ASTM Data			
Tensile Modulus	**3300**	MPa	ASTM D 638
Tensile Strength at Break	**75**	MPa	ASTM D 638
Elongation at Break	**3**	%	ASTM D 638
Flexural Modulus	**3000**	MPa	ASTM D 790
Rockwell Hardness	**M 71**	-	ASTM D 785
Izod Impact notched, 1/8 in	**100**	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	**75**	J/m	ASTM D 256
Temperature	**-30**	°C	-
Izod Impact unnotched, 1/8 in	**450**	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	**130**	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	**140**	°C	ISO 75-1/-2
Vicat softening temperature, A	**151**	°C	ISO 306
Vicat softening temperature, B	**139**	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	**141**	°C	ISO 306
Burning behav. at 1.5 mm nom. thickn.	**V-0**	class	IEC 60695-11-10
Thickness tested	**1.5**	mm	-
Burning behav. 5V at thickness h	**5VB**	class	IEC 60695-11-20
Thickness tested	**1.5**	mm	-
Thermal Conductivity	**0.21**	W/(m K)	DIN 52616
Glow Wire Flammability Index (GWFI)	**825**	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	**960**	°C	IEC 60695-2-13
GWIT - thickness tested (3)	**3**	mm	-
ASTM Data			
DTUL @ 66 psi	**140**	°C	ASTM D 648

DTUL @ 264 psi	**130**	°C	ASTM D 648
Vicat Temperature	**139**	°C	ASTM D 1525

Electrical properties	**Value**	**Unit**	**Test Standard**
ISO Data			
Relative permittivity, 1MHz	**3.19**	-	IEC 62631-2-1
Dissipation factor, 1MHz	**37**	E-4	IEC 62631-2-1
Volume resistivity	**>1E13**	Ohm*m	IEC 62631-3-1
Surface resistivity	**>1E15**	Ohm	IEC 62631-3-2
Electric strength	**50.6**	kV/mm	IEC 60243-1
Comparative tracking index	**275**	-	IEC 60112
ASTM Data			
Dissipation Factor, 60 Hz	**0.2**	-	ASTM D 150
Dissipation Factor, 1 MHz	**0.0037**	-	ASTM D 150
Dielectric Constant, 60 Hz	**2.73**	-	ASTM D 150
Dielectric Constant, 1 MHz	**3.19**	-	ASTM D 150
Surface Resistivity	**>1E15**	Ohm	ASTM D 257
Volume Resistivity	**>1E15**	Ohm*cm	ASTM D 257

Other properties	**Value**	**Unit**	**Test Standard**
Water absorption	**0.2**	%	Sim. to ISO 62
Density	**1160**	kg/m³	ISO 1183
Density	**1160**	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	-
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
North America, Europe, Asia Pacific