

Product Texts

NORYL NHP6012 resin is a 10% glass reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). 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 NHP6012 is based on a unique co-polymer technology and exhibits high flow, 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 appliance internals, indoor and outdoor electrical and electrical vehicle (EV) battery modules/housings.

UL Yellow Card Link [F207780-104492508](https://www.ul.com/yellow-card/F207780-104492508)

Processing/Physical Characteristics	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	20	cm ³ /10min	ISO 1133
Temperature	280	°C	-
Load	10	kg	-

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	4400	MPa	ISO 527
Stress at break	82	MPa	ISO 527
Strain at break	2.5	%	ISO 527
Flexural modulus	4000	MPa	ISO 178
Flexural strength	132	MPa	ISO 178
Charpy impact strength, +23°C	25	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	25	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, +23°C	6	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	6	kJ/m ²	ISO 179/1eA
Izod impact strength, +23°C, 4mm	25	kJ/m ²	ISO 180/1U
Izod impact strength, -30°C, 4mm	25	kJ/m ²	ISO 180/1U
Izod notched impact strength, +23°C, 4mm	6	kJ/m ²	ISO 180/1A
Izod notched impact strength, -30°C, 4mm	6	kJ/m ²	ISO 180/1A
Rockwell hardness	M 90	-	ISO 2039-2
Ball indentation hardness	214	MPa	ISO 2039-1

ASTM Data			
Tensile Modulus	4200	MPa	ASTM D 638
Tensile Strength at Break	82	MPa	ASTM D 638
Elongation at Break	2.5	%	ASTM D 638
Flexural Modulus	4000	MPa	ASTM D 790
Rockwell Hardness	M 90	-	ASTM D 785
Izod Impact notched, 1/8 in	70	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	60	J/m	ASTM D 256
Temperature	-30	°C	-
Izod Impact unnotched, 1/8 in	440	J/m	ASTM D 256

Thermal properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load, 1.80 MPa	125	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	132	°C	ISO 75-1/-2
Vicat softening temperature, A	144	°C	ISO 306
Vicat softening temperature, B	136	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	138	°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. at thickness h	V-1	class	IEC 60695-11-10
Thickness tested	1.0	mm	-
Burning behav. 5V at thickness h	5VB	class	IEC 60695-11-20
Thickness tested	2.5	mm	-
Thermal Conductivity	0.21	W/(m K)	DIN 52616
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
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NORYL™ Resin NHP6012

(PPE+PS)-GF10

Saudi Basic Industries Corporation (SABIC)

Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWIT - thickness tested (2)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	850	°C	IEC 60695-2-13
GWIT - thickness tested (3)	3	mm	-
ASTM Data			
DTUL @ 66 psi	134	°C	ASTM D 648
DTUL @ 264 psi	127	°C	ASTM D 648
Vicat Temperature	136	°C	ASTM D 1525

Electrical properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 1MHz	2.83	-	IEC 62631-2-1
Dissipation factor, 1MHz	29	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	51.7	kV/mm	IEC 60243-1
Comparative tracking index	250	-	IEC 60112
ASTM Data			
Dissipation Factor, 60 Hz	0.109	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0029	-	ASTM D 150
Dielectric Constant, 60 Hz	3.37	-	ASTM D 150
Dielectric Constant, 1 MHz	2.83	-	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	1190	kg/m ³	ISO 1183
Density	1190	kg/m ³	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