

NORYL™ Resin NHP7020T3

(PPE+PS)

Saudi Basic Industries Corporation (SABIC)

Product Texts

NORYL NHP7020T3 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) designed for ultra-thin-wall FR. This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries UL94 flame rating of V0 at 0.3mm. NORYL NHP7020T3 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 low specific gravity. This grade is targeted for electrical vehicle (EV) battery modules, bus bar insulation layer and other high voltage electric component. See NHP8010VT3 resin for higher heat version.

UL Yellow Card Link: [E207780-104613766](https://www.ul.com/yellow-card/E207780-104613766)

Processing/Physical Characteristics	Value	Unit	Test Standard
ASTM Data			
Melt Flow Index, MFI	26	g/10min	ASTM D 1238
Temperature	300	°C	-
Load	5	kg	-
Mold Shrinkage, MD	0.0075	mm/mm	ASTM D 955
Mold Shrinkage, TD	0.0086	mm/mm	ASTM D 955

Mechanical properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	2250	MPa	ISO 527
Yield stress	64	MPa	ISO 527
Yield strain	5.3	%	ISO 527
Stress at break	52	MPa	ISO 527
Strain at break	27	%	ISO 527
Flexural modulus, 23°C	2340	MPa	ISO 178
Flexural strength	98	MPa	ISO 178
Izod impact strength, +23°C	104	kJ/m ²	ISO 180/1U
Izod notched impact strength, +23°C	37.5	kJ/m ²	ISO 180/1A
Izod notched impact strength	11.4	kJ/m ²	ISO 180/1A
Temperature	-30	°C	-
ASTM Data			
Tensile Modulus	2191	MPa	ASTM D 638
Tensile Strength at Yield	61	MPa	ASTM D 638
Tensile Strength at Break	48	MPa	ASTM D 638
Elongation at Yield	5.5	%	ASTM D 638
Elongation at Break	20	%	ASTM D 638
Flexural Modulus	2220	MPa	ASTM D 790
Flexural Strength	97	MPa	ASTM D 790
Izod Impact notched, 1/8 in	383	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	101	J/m	ASTM D 256
Temperature	-30	°C	-
Izod Impact unnotched, 1/8 in	2150	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	144	°C	ISO 75-1/-2
Burning behav. at thickness h	V-0	class	IEC 60695-11-10
Thickness tested	0.3	mm	-
Yellow Card available	yes	-	-
ASTM Data			
UL 94 Flame rating	V-0	-	UL 94
Thickness tested	0.3	mm	-
DTUL @ 66 psi	145	°C	ASTM D 648
DTUL @ 264 psi	128	°C	ASTM D 648

Electrical properties	Value	Unit	Test Standard
ASTM Data			

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Surface Resistivity	7.6E16	Ohm	ASTM D 257
Volume Resistivity	2.2E16	Ohm*cm	ASTM D 257

Other properties	Value	Unit	Test Standard
Density	1090	kg/m ³	ISO 1183

Processing Recommendation Injection Molding	Value	Unit	Test Standard
Pre-drying - Temperature	100 - 120	°C	-
Pre-drying - Time	3 - 5	h	-
Melt temperature	280 - 320	°C	-
Mold temperature	75 - 130	°C	-
Zone 1	280 - 320	°C	-
Zone 2	280 - 320	°C	-
Zone 3	280 - 320	°C	-
Nozzle temperature	250 - 320	°C	-
Screw speed	20 - 100	rpm	-
Back pressure	0.3 - 0.8	MPa	-

Characteristics**Processing**

Injection Molding

Additives

Flame retarding agent

Special Characteristics

Flame retardant, Halogen-free, High impact or impact modified, Heat stabilized or stable to heat

Chemical Resistance

Hydrolytically Stable

Applications

Automotive, Electrical and Electronical

Regional Availability

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