

**Product Texts**

NORYL GTX™ 4610 resin is a 10% glass reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This high performance injection moldable grade has a UL 5VA flame rating, non-brominated / non-chlorinated FR package, UL746C Outdoor Suitability rating of F1, excellent chemical resistance, high heat resistance, high flow, and is laser weldable. NORYL GTX4610 resin is an excellent candidate for a wide variety of electrical applications including connectors, sockets, sensors, terminal blocks and insulator components. NORYL GTX™ 4610 resin is also an excellent candidate for electric vehicle (EV) battery applications including housings and covers.

UL Yellow Card Link [E121562-100731737](https://www.ul.com/yellow-card/E121562-100731737)

Processing/Physical Characteristics	Value	Unit	Test Standard
<b>ISO Data</b>			
Melt volume-flow rate, MVR	15	cm <sup>3</sup> /10min	ISO 1133
Temperature	300	°C	-
Load	5	kg	-
<b>ASTM Data</b>			
Melt Flow Index, MFI	18	g/10min	ASTM D 1238
Temperature	300	°C	-
Load	5	kg	-

Mechanical properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Tensile Modulus	5000	MPa	ISO 527
Yield stress	88	MPa	ISO 527
Yield strain	3	%	ISO 527
Stress at break	88	MPa	ISO 527
Strain at break	3	%	ISO 527
Flexural modulus	4600	MPa	ISO 178
Charpy notched impact strength, +23°C	5	kJ/m <sup>2</sup>	ISO 179/1eA
Izod notched impact strength, +23°C, 4mm	5	kJ/m <sup>2</sup>	ISO 180/1A
<b>ASTM Data</b>			
Tensile Modulus	5000	MPa	ASTM D 638
Tensile Strength at Yield	88	MPa	ASTM D 638
Tensile Strength at Break	88	MPa	ASTM D 638
Flexural Modulus	4600	MPa	ASTM D 790
Izod Impact notched, 1/8 in	80	J/m	ASTM D 256
Izod Impact notched, Low-Temperature	65	J/m	ASTM D 256
Temperature	-30	°C	-

Thermal properties	Value	Unit	Test Standard
<b>ISO Data</b>			
Temp. of deflection under load, 0.45 MPa	224	°C	ISO 75-1/-2
Vicat softening temperature, B	218	°C	ISO 306
Vicat softening temperature, 120°C/h 50N	220	°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	0.8	mm	-
Burning behav. 5V at thickness h	5VA	class	IEC 60695-11-20
Thickness tested	2.0	mm	-
Glow Wire Flammability Index (GWFI)	800	°C	IEC 60695-2-12
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
Glow Wire Flammability Index (GWFI)	960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested (1)	1	mm	-
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested (2)	2	mm	-
Glow Wire Ignition Temperature (GWIT)	800	°C	IEC 60695-2-13
GWIT - thickness tested (3)	3	mm	-
<b>ASTM Data</b>			
DTUL @ 66 psi	220	°C	ASTM D 648

**NORYL GTX™ Resin GTX4610 - Americas**

(PPE+PA\*)-GF10

Saudi Basic Industries Corporation (SABIC)

Vicat Temperature	<b>218</b>	°C	ASTM D 1525
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<b>Electrical properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
<b>ISO Data</b>			
Comparative tracking index	<b>425</b>	-	IEC 60112
<b>ASTM Data</b>			
Dielectric Strength, Short Time	<b>24.4</b>	kV/mm	ASTM D 149
Volume Resistivity	<b>&gt;1E15</b>	Ohm*cm	ASTM D 257

<b>Other properties</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Water absorption	<b>3.8</b>	%	Sim. to ISO 62
Humidity absorption	<b>0.5</b>	%	Sim. to ISO 62
Density	<b>1210</b>	kg/m <sup>3</sup>	ISO 1183
Density	<b>1210</b>	kg/m <sup>3</sup>	ASTM D 792

<b>Processing Recommendation Injection Molding</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Pre-drying - Temperature	<b>95 - 105</b>	°C	-
Pre-drying - Time	<b>3 - 4</b>	h	-
Processing humidity	<b>≤0.07</b>	%	-
Melt temperature	<b>280 - 305</b>	°C	-
Mold temperature	<b>75 - 120</b>	°C	-
Zone 1	<b>265 - 305</b>	°C	-
Zone 2	<b>270 - 305</b>	°C	-
Zone 3	<b>275 - 305</b>	°C	-
Screw speed	<b>20 - 100</b>	rpm	-
Back pressure	<b>0.3 - 1.4</b>	MPa	-

**Characteristics****Processing**

Injection Molding

**Regional Availability**

North America

**Applications**

Automotive