

**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.

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
Izod notched impact strength, -30°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
Elongation at Yield	3	%	ASTM D 638
Elongation at Break	3	%	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
<b>ASTM Data</b>			
DTUL @ 66 psi	220	°C	ASTM D 648
Vicat Temperature	218	°C	ASTM D 1525

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

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

**NORYL GTX™ Resin GTX4610 - Europe**  
(PPE+PA\*)-GF10

Saudi Basic Industries Corporation (SABIC)

Density	1210	kg/m <sup>3</sup>	ASTM D 792
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<b>Processing Recommendation Injection Molding</b>	<b>Value</b>	<b>Unit</b>	<b>Test Standard</b>
Pre-drying - Temperature	95 - 105	°C	-
Pre-drying - Time	3 - 4	h	-
Processing humidity	≤0.07	%	-
Melt temperature	280 - 305	°C	-
Mold temperature	75 - 120	°C	-
Zone 1	265 - 305	°C	-
Zone 2	270 - 305	°C	-
Zone 3	275 - 305	°C	-
Screw speed	20 - 100	rpm	-
Back pressure	0.3 - 1.4	MPa	-

**Characteristics**

**Processing**

Injection Molding

**Regional Availability**

Europe

**Applications**

Automotive