NORYL GTX™ RESIN GTX4610

REGION ASIA

DESCRIPTION

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, and flow. NORYL GTX4610 resin is an excellent candidate for a wide variety of electrical applications including connectors, sockets, sensors, terminal blocks, and insulator components.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	88	MPa	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	88	MPa	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Modulus, 5 mm/min	5000	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	145	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	4600	MPa	ASTM D 790
Tensile Stress, yield, 5 mm/min	88	MPa	ISO 527
Tensile Stress, break, 5 mm/min	88	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	3	%	ISO 527
Tensile Strain, break, 5 mm/min	3	%	ISO 527
Tensile Modulus, 1 mm/min	5000	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	145	MPa	ISO 178
Flexural Modulus, 2 mm/min	4600	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	80	J/m	ASTM D 256
Izod Impact, notched, -30°C	65	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	12	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	5	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	5	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	5	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	218	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	220	°C	ASTM D 648
CTE, -40°C to 40°C, flow	4.1E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	7.4E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	4.1E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	7.4E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	218	°C	ISO 306
Vicat Softening Temp, Rate B/120	220	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	224	°C	ISO 75/Bf
PHYSICAL			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Specific Gravity	1.21	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.88 – 0.94	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.95 – 1.01	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	18	g/10 min	ASTM D 1238
Density	1.21	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	3.8	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.5	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	15	cm³/10 min	ISO 1133
ELECTRICAL			
Volume Resistivity	1.E+16	Ohm-cm	ASTM D 257
Dielectric Strength, in air, 1.6 mm	23.2	kV/mm	ASTM D 149
Dielectric Strength, in oil, 1.6 mm	24.4	kV/mm	ASTM D 149
Comparative Tracking Index (1)	425	V	IEC 60112
INJECTION MOLDING			
Drying Temperature	95 – 105	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	8	hrs	
Maximum Moisture Content	0.07	%	
Minimum Moisture Content	0.02	%	
Melt Temperature	280 – 305	°C	
Nozzle Temperature	280 – 305	°C	
Front - Zone 3 Temperature	275 – 305	°C	
Middle - Zone 2 Temperature	270 – 305	°C	
Rear - Zone 1 Temperature	265 – 305	°C	
Mold Temperature	75 – 120	°C	
Back Pressure	0.3 – 1.4	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 50	%	
Vent Depth	0.013 – 0.038	mm	

(1) Value shown here is based on internal measurement.

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