NORYL GTX™ Resin GTX840

REGION EUROPE

DESCRIPTION

NORYL GTX840 resin is a 40% glass fiber reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade has high stiffness (flexural modulus 11860 MPa), excellent chemical resistance, and high heat resistance. NORYL GTX GTX840 resin is an excellent candidate for a wide variety of applications including automotive under-the-hood and water management.

GENERAL INFORMATION	
Features	Chemical Resistance, Hydrolytic Stability, Low Warpage, Low Moisture Absorption, Low Specific Gravity, Dimensional stability, High stiffness/Strength, High temperature resistance, No PFAS intentionally added
Fillers	Glass Fiber (Total fluorine >50ppm only from inorganic fluorine)
Polymer Types	Polyphenylene Ether + PA (PPE+Nylon)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive EV Batteries, Automotive Under the Hood
Building and Construction	Water Management
Electrical and Electronics	Electronic Components
Industrial	Electrical

TYPICAL PROPERTY VALUES

Revision 20260429

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, brk, Type I, 5 mm/min	178	MPa	ASTM D638
Tensile Strain, brk, Type I, 5 mm/min	2	%	ASTM D638
Tensile Modulus, 5 mm/min	13520	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	249	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	11860	MPa	ASTM D790
Hardness, Rockwell R	108	-	ASTM D785
Tensile Stress, break, 5 mm/min	198	MPa	ISO 527
Tensile Strain, break, 5 mm/min	2	%	ISO 527
Tensile Modulus, 1 mm/min	13940	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	280	MPa	ISO 178
Flexural Modulus, 2 mm/min	12270	MPa	ISO 178
IMPACT [1]			
Izod Impact, notched, 23°C	94	J/m	ASTM D256
Izod Impact, notched, -30°C	90	J/m	ASTM D256
Izod Impact, notched 80*10*4 +23°C	11	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	11	kJ/m²	ISO 179/1eA
Charpy Impact, notched, -30°C	11	kJ/m²	ISO 179/2C
THERMAL [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 0.45 MPa, 6.4 mm, unannealed	260	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	247	°C	ASTM D648
CTE			
-40°C to 40°C, flow	0.000016 – 0.0000196	1/°C	ASTM E831
40°C to 40°C, xflow	0.00009 – 0.0000937	1/°C	ASTM E831
Vicat Softening Temp, Rate B/50	246	°C	ISO 306
Vicat Softening Temp, Rate B/120	246	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	258	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	244	°C	ISO 75/Af
PHYSICAL (1)			
Specific Gravity	1.45	-	ASTM D792
Water Absorption, (23°C/Saturated)	0.3	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm (2)	0.24 – 0.27	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm (2)	0.6 – 0.63	%	SABIC method
Density	1.45	g/cm³	ISO 1183
Moisture Absorption (23°C / 50% RH)	0.1	%	ISO 62
Melt Volume Rate			
220°C/5.0 kg	10	cm³/10 min	ISO 1133
INJECTION MOLDING (3)			
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	295 – 315	°C	
Nozzle Temperature	295 – 315	°C	
Front - Zone 3 Temperature	290 – 315	°C	
Middle - Zone 2 Temperature	280 – 315	°C	
Rear - Zone 1 Temperature	275 – 315	°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) The information stated on Technical Datasheets should be used as indicative only for material selection purposes and not be utilized as specification or used for part or tool design.

(2) Measurements made from laboratory test coupon. Actual shrinkage may vary outside of range due to differences in processing conditions, equipment, part geometry and tool design. It is recommended that mold shrinkage studies be performed with surrogate or legacy tooling prior to cutting tools for new molded article.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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