NORYL GTX™ Resin GTX1089

DESCRIPTION

NORYL GTX1089 resin is a sustainable low CO2 footprint, conductive, non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade is optimized for primer-less electrostatic painting. NORYL GTX1089 resin exhibits low water uptake, high heat resistance and high impact resistance. This material is intended for automotive applications such as body panels, tank flaps, fenders, trunk lid, and exterior trim.

GENERAL INFORMATION	
Features	Chemical Resistance, Electrically Conductive, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Bio-Renewable, Aesthetics/Visual effects, Dimensional stability, High stiffness/Strength, High temperature resistance, Impact resistant, No PFAS intentionally added
Fillers	Conductive agent
Polymer Types	Polyphenylene Ether + PA (PPE+Nylon)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Exteriors

TYPICAL PROPERTY VALUES

Revision 20240402

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Modulus, 1 mm/min	2250	MPa	ISO 527
Tensile Stress, yield, 50 mm/min	56	MPa	ISO 527
Tensile Stress, break, 50 mm/min	50	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Nominal Strain, break, 50 mm/min	65	%	ISO 527
Flexural Modulus, 2 mm/min	1950	MPa	ISO 178
Flexural Strength, 2 mm/min	78	MPa	ISO 178
Tensile Modulus, 50 mm/min	2220	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	59	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	50	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	4.5	%	ASTM D638
Tensile Nominal Strain, brk, Type I, 50 mm/min	55	%	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2070	MPa	ASTM D790
Flexural Strength, 1.3 mm/min, 50 mm span	87	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	21	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	137	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	23	kJ/m²	ISO 179/1eA
Izod Impact, notched, 23°C	262	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	46	J	ASTM D3763
THERMAL [1]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	176	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	182	°C	ISO 306
Vicat Softening Temp, Rate B/120	183	°C	ISO 306
CTE			
CTE, -40°C to 100°C, flow	1.1E-04	1/°C	ISO 11359-2
CTE, -40°C to 100°C, xflow	1.0E-04	1/°C	ISO 11359-2
CTE, -40°C to 100°C, flow	9.9E-05	1/°C	ASTM E831
CTE, -40°C to 100°C, xflow	9.7E-05	1/°C	ASTM E831
HDT, 0.45 MPa, 3.2 mm, unannealed	178	°C	ASTM D648
Vicat Softening Temp, Rate B/50	182	°C	ASTM D1525
Vicat Softening Temp, Rate B/120	186	°C	ASTM D1525
PHYSICAL (1)			
Density	1.07	g/cm³	ISO 1183
Melt Volume Rate, MVR at 280°C/5.0 kg	12	cm³/10 min	ISO 1133
Moisture Absorption, (23°C/50% RH/24hrs)	0.1	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.8	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.3	%	ISO 62-1
Water Absorption, (23°C/saturated)	2.4	%	ISO 62-1
Melt Flow Rate, 280°C/5.0 kgf	13	g/10 min	ASTM D1238
Specific Gravity	1.07	-	ASTM D792
Mold Shrinkage, flow (2)	1.5	%	SABIC method
Mold Shrinkage, xflow (2)	1.3	%	SABIC method
ELECTRICAL PROPERTIES			
Volume resistivity	5.E+03	Ω.cm	SABIC method
INJECTION MOLDING (3)			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 4	Hrs	
Maximum Moisture Content	0.07	%	
Melt Temperature	290 – 320	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Middle - Zone 2 Temperature	280 – 300	°C	
Front - Zone 3 Temperature	290 – 320	°C	
Nozzle Temperature	280 – 310	°C	
Mold Temperature	100 – 120	°C	

(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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