NORYL GTX™ RESIN GTX989

REGION AMERICAS

DESCRIPTION

NORYL GTX989 resin is a conductive, non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade is optimized for primer-less electrostatic painting. NORYL GTX989 resin exhibits high heat resistance, high impact resistance, and low coefficient of thermal expansion (CTE) of ~9. This material is an excellent candidate for automotive applications such as body panels, tank flaps, fenders, trunk lid, and exterior trim.

GENERAL INFORMATION	
Features	Chemical Resistance, Electrically Conductive, Heat Stabilized, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, 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 20260430

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yield, 50 mm/min	62	MPa	ISO 527
Tensile Stress, break, 50 mm/min	57	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	5	%	ISO 527
Tensile Strain, break, 50 mm/min	45	%	ISO 527
Tensile Modulus, 1 mm/min	2265	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	98	MPa	ISO 178
Flexural Modulus, 2 mm/min	2370	MPa	ISO 178
Tensile Stress, yld, Type I, 50 mm/min	60	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	55	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.1	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	39	%	ASTM D638
Tensile Modulus, 50 mm/min	2280	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	85.7	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2220	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	22	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	NB	kJ/m²	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	25	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	15	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, 23°C	251	J/m	ASTM D256
Izod Impact, notched, -30°C	180	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Instrumented Dart Impact Total Energy, 23°C	60	J	ASTM D3763
THERMAL [1]			
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	190	°C	ISO 75/Bf
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	123	°C	ISO 75/Af
Vicat Softening Temp, Rate A/50	246	°C	ISO 306
Vicat Softening Temp, Rate B/50	195	°C	ISO 306
Vicat Softening Temp, Rate B/120	200	°C	ISO 306
CTE			
23°C to 60°C, flow	9.3E-05	1/°C	ISO 11359-2
23°C to 60°C, xflow	9.5E-05	1/°C	ISO 11359-2
-40°C to 60°C, flow	8.5E-05	1/°C	ASTM E831
-40°C to 60°C, xflow	8.5E-05	1/°C	ASTM E831
23°C to 60°C, flow	9.3E-05	1/°C	ASTM E831
23°C to 60°C, xflow	9.5E-05	1/°C	ASTM E831
Vicat Softening Temp, Rate B/50	195	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	190	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	133	°C	ASTM D648
PHYSICAL [1]			
Density	1.08	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.22	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.64	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.83	%	ISO 62-1
Water Absorption, (23°C/saturated)	2.29	%	ISO 62-1
Melt Volume Rate			
280°C/2.16 kg	4.6	cm³/10 min	ISO 1133
280°C/5.0 kg	17	cm³/10 min	ISO 1133
Specific Gravity	1.08	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.83	%	ASTM D570
Water Absorption, (23°C/Saturated)	2.29	%	ASTM D570
Mold Shrinkage, flow, 24 hrs [2]	1.56	%	ISO 294
Mold Shrinkage, xflow, 24 hrs [2]	1.69	%	ISO 294
Mold Shrinkage, flow, 3.2 mm [2]	1.2 – 1.6	%	SABIC method
Mold Shrinkage, flow, 24 hrs [2]	1.56	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [2]	1.69	%	ASTM D955
Melt Flow Rate			
280°C/5.0 kgf	16	g/10 min	ASTM D1238
280°C/2.16 kgf	3.2	g/10 min	ASTM D1238
ELECTRICAL [1]			
Volume Resistivity	1.E+03 – 1.E+04	Ω.cm	SABIC method
INJECTION MOLDING [3]			
Drying Temperature	100 – 120	°C	
Drying Time	2 – 3	Hrs	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Maximum Moisture Content	0.07	%	
Minimum Moisture Content	0.02	%	
Melt Temperature	290 – 320	°C	
Nozzle Temperature	280 – 310	°C	
Front - Zone 3 Temperature	290 – 320	°C	
Middle - Zone 2 Temperature	280 – 300	°C	
Rear - Zone 1 Temperature	260 – 280	°C	
Hopper Temperature	60 – 80	°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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