NORYL GTX™ RESIN GTX973

REGION AMERICAS

DESCRIPTION

NORYL GTX973 resin is a conductive, non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade is optimized to allow for in- or on-line primer-less electrostatic and powder coat painting. NORYL GTX973 resin exhibits high impact resistance and strength and is an excellent candidate for automotive painted applications such as body panels, fenders, and tank flaps.

GENERAL INFORMATION	
Features	Chemical Resistance, Electrically Conductive, 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 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yield, 50 mm/min	64	MPa	ISO 527
Tensile Stress, break, 50 mm/min	56	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.8	%	ISO 527
Tensile Strain, break, 50 mm/min	41	%	ISO 527
Tensile Modulus, 1 mm/min	2300	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	99	MPa	ISO 178
Flexural Modulus, 2 mm/min	2380	MPa	ISO 178
Tensile Stress, yld, Type I, 50 mm/min	61	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	37	%	ASTM D638
Tensile Modulus, 50 mm/min	2300	MPa	ASTM D638
Flexural Modulus, 1.3 mm/min, 50 mm span	2230	MPa	ASTM D790
IMPACT [1]			
Izod Impact, notched 80*10*4 +23°C	13	kJ/m²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m²	ISO 180/1U
Izod Impact, notched 80*10*4 -30°C	7	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	14	kJ/m²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	6	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Izod Impact, notched, 23°C	138	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, notched, -30°C	80	J/m	ASTM D256
Izod Impact, unnotched, 23°C	NB	J/m	ASTM D4812
Instrumented Dart Impact Total Energy, 23°C	50	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	126	°C	ISO 75/Af
Vicat Softening Temp, Rate A/50	245	°C	ISO 306
Vicat Softening Temp, Rate B/50	200	°C	ISO 306
CTE, 23°C to 60°C, flow	9.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	9.5E-05	1/°C	ISO 11359-2
HDT, 0.45 MPa, 3.2 mm, unannealed	198	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	136	°C	ASTM D648
Vicat Softening Temp, Rate B/50	199	°C	ASTM D1525
CTE, 23°C to 60°C, flow	9.2E-05	1/°C	ASTM E831
CTE, 23°C to 60°C, xflow	9.5E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	8.5E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9.E-05	1/°C	ASTM E831
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
PHYSICAL [1]			
Density	1.09	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.21	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.61	%	ISO 62-4
Water Absorption, (23°C/24hrs)	0.81	%	ISO 62-1
Water Absorption, (23°C/saturated)	2.24	%	ISO 62-1
Mold Shrinkage, flow, 24 hrs [2]	1.6	%	ISO 294
Mold Shrinkage, xflow, 24 hrs [2]	1.69	%	ISO 294
Melt Volume Rate, MVR at 280°C/5.0 kg	12	cm³/10 min	ISO 1133
Melt Volume Rate, MVR at 280°C/2.16 kg	4.7	cm³/10 min	ISO 1133
Specific Gravity	1.09	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.81	%	ASTM D570
Water Absorption, (23°C/Saturated)	2.24	%	ASTM D570
Mold Shrinkage, flow, 24 hrs [2]	1.60	%	ASTM D955
Mold Shrinkage, xflow, 24 hrs [2]	1.69	%	ASTM D955
Melt Flow Rate, 280°C/5.0 kgf	20	g/10 min	ASTM D1238
Melt Flow Rate, 280°C/2.16 kgf	3.2	g/10 min	ASTM D1238
Mold Shrinkage, flow, 3.2 mm [2]	1.4 – 1.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm [2]	1.2 – 1.5	%	SABIC method
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	
Maximum Moisture Content	0.07	%	
Melt Temperature	290 – 320	°C	
Nozzle Temperature	280 – 310	°C	

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
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.

ADDITIONAL PRODUCT NOTES

No PFAS intentionally added: The grade listed in this document does not contain PFAS intentionally added during Seller's manufacturing process and is not expected to contain unintentional PFAS impurities. Each user is responsible for evaluating the presence of unintentional PFAS impurities.

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