NORYL GTX™ Resin GTX902BIO3

DESCRIPTION

NORYL GTX902BIO3 resin is a non-reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA) with bio-based content. This injection moldable grade exhibits excellent chemical resistance and excellent paintability. NORYL GTX902BIO3 resin is targeted for automotive wheel cover applications.

GENERAL INFORMATION	
Features	Chemical Resistance, Hydrolytic Stability, Low Warpage, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Bio-Renewable, Dimensional stability, High stiffness/Strength, High temperature resistance, Impact resistant, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PA (PPE+Nylon)
Processing Techniques	Injection Molding
Regional Availability	Europe, Asia, Americas

TYPICAL PROPERTY VALUES

Revision 20260818

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL [1]			
Tensile Stress, yield, 50 mm/min	58	MPa	ISO 527
Tensile Stress, break, 50 mm/min	54	MPa	ISO 527
Tensile Strain, Yield			
50 mm/min	9	%	ISO 527
Type I, 50 mm/min	11	%	ASTM D638
Tensile Strain, Break			
50 mm/min	46	%	ISO 527
Type I, 50 mm/min	45	%	ASTM D638
Tensile Modulus			
1 mm/min	2154	MPa	ISO 527
50 mm/min	2173	MPa	ASTM D638
Flexural Modulus			
2 mm/min	2227	MPa	ISO 178
1.3 mm/min, 50 mm span	2120	MPa	ASTM D790
2.6 mm/min, 100 mm span	2240	MPa	ASTM D790
Flexural Strength, 2 mm/min	91	MPa	ISO 178
Tensile Stress, brk, Type I, 50 mm/min	54	MPa	ASTM D638
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D638
Flexural Strength, 2.6 mm/min, 100 mm span	89	MPa	ASTM D790
Hardness, Rockwell R	118	-	ASTM D785
Taber Abrasion, CS-17, 1 kg	19	mg/1000cy	ASTM D1044
IMPACT [1]			
Izod impact, notched			
80*10*4 +23°C	18	kJ/m²	ISO 180/1A
23°C	220	J/m	ASTM D256
-30°C	117	J/m	ASTM D256

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
-40°C	53	J/m	ASTM D256
Izod Impact, Unnotched			
80*10*4 +23°C	N.B.	kJ/m²	ISO 180/1U
23°C	3204	J/m	ASTM D4812
-30°C	3204	J/m	ASTM D4812
-40°C	3204	J/m	ASTM D4812
Charpy 23°C, V-notch Edgew 80*10*3 sp=62mm	19	kJ/m²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m²	ISO 179/1eU
Instrumented Dart Impact Energy @ peak, 23°C	46	J	ASTM D3763
Instrumented Dart Impact Energy @ peak, -30°C	36	J	ASTM D3763
THERMAL [1]			
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	113	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	154	°C	ISO 75/Bf
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D648
HDT, 0.45 MPa, 3.2 mm, unannealed	155	°C	ASTM D648
Vicat Softening Temp, Rate B/50	166	°C	ISO 306
Vicat Softening Temp, Rate A/50	235	°C	ISO 306
Vicat Softening Temp, Rate B/50	200	°C	ASTM D1525
Vicat Softening Temp, Rate A/50	232	°C	ASTM D1525
CTE			
23°C to 60°C, flow	9.3E-05	1/°C	ASTM E831
23°C to 60°C, xflow	9.3E-05	1/°C	ASTM E831
-20°C to 150°C, flow	9.0E-05	1/°C	ASTM E831
-20°C to 150°C, xflow	9.3E-05	1/°C	ASTM E831
Relative Temp Index, Elec	50	°C	UL 746B
Relative Temp Index, Mech w/impact	50	°C	UL 746B
Relative Temp Index, Mech w/o impact	50	°C	UL 746B
PHYSICAL [1]			
Density	1.09	g/cm³	ISO 1183
Moisture Absorption, (23°C/50% RH/24hrs)	0.2	%	ISO 62-4
Moisture Absorption, (23°C/50% RH/Equilibrium)	0.57	%	ISO 62-4
Water Absorption, (23°C/saturated)	2.02	%	ISO 62-1
Water Absorption, (23°C/24hrs)	0.73	%	ISO 62-1
Mold Shrink, flow, annealed 130C 1hr	1.1 – 1.5	%	ASTM D955
Mold Shrinkage, flow, 3.2 mm	0.9 – 1.2	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.8 – 1.1	%	SABIC method
Melt Volume Rate			
280°C/2.16 kg	5.4	cm³/10 min	ISO 1133
280°C/5.0 kg	12	cm³/10 min	ISO 1133
Specific Gravity	1.08	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.73	%	ASTM D570
Water Absorption, (23°C/Saturated)	2.81	%	ASTM D570
Melt Flow Rate			
280°C/2.16 kgf	3.4	g/10 min	ASTM D1238
FLAME CHARACTERISTICS [2]			

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link [2]	E121562-220764	-	-
UL Recognized, 94HB Flame Class Rating	≥1.5	mm	UL 94
INJECTION MOLDING [3]			
Drying Temperature	90 – 105	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.07	%	
Minimum Moisture Content	0.02	%	
Melt Temperature	275 – 300	°C	
Rear - Zone 1 Temperature	260 – 300	°C	
Middle - Zone 2 Temperature	265 – 300	°C	
Front - Zone 3 Temperature	270 – 300	°C	
Nozzle Temperature	275 – 300	°C	
Mold Temperature	65 – 95	°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) UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

(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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