

NORYL GTX™ GTX678 resin

Polyphenylene Ether + PS + Nylon

SABIC Innovative Plastics

Message:

NORYL GTX678 resin is a high performance blend of PPE/PA that exhibits an excellent balance on non-halogenated flame retardance, conductivity, ductility, and high-heat resistance. This grade can be electro-statically painted or powder coated without the need for a conductive primer.

General Information			
Features	Conductivity		
	Sprayable		
	Heat resistance, high		
	Halogen-free		
	ductility		
	Flame retardancy		
RoHS Compliance	RoHS compliance		
Processing Method	Profile extrusion molding		
	Injection molding		

Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.12	g/cm ³	ASTM D792, ISO 1183
Melt Mass-Flow Rate (MFR) (300°C/5.0 kg)	7.8	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (300°C/5.0 kg)	7.00	cm ³ /10min	ISO 1133
Molding Shrinkage - Flow (3.20 mm)	1.3 - 1.5	%	Internal method
Water Absorption			ISO 62
Saturated, 23°C	4.0	%	ISO 62
Equilibrium, 23°C, 50% RH	0.50	%	ISO 62

Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus			
-- ¹	2900	MPa	ASTM D638
--	2900	MPa	ISO 527-2/1
Tensile Strength			
Yield ²	58.0	MPa	ASTM D638
Yield	58.0	MPa	ISO 527-2/50
Fracture ³	52.0	MPa	ASTM D638
Fracture	52.0	MPa	ISO 527-2/50
Tensile Elongation			
Yield ⁴	7.0	%	ASTM D638
Yield	7.0	%	ISO 527-2/50
Fracture ⁵	12	%	ASTM D638

Fracture	12	%	ISO 527-2/50
Flexural Modulus			
50.0mm span ⁶	2600	MPa	ASTM D790
-- ⁷	2600	MPa	ISO 178
Flexural Stress			
--	95.0	MPa	ISO 178
Yield, 50.0mm span ⁸	95.0	MPa	ASTM D790
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength ⁹ (23°C)	12	kJ/m ²	ISO 179/1eA
Notched Izod Impact			
-30°C	70	J/m	ASTM D256
23°C	100	J/m	ASTM D256
-30°C ¹⁰	7.0	kJ/m ²	ISO 180/1A
23°C ¹¹	10	kJ/m ²	ISO 180/1A
Instrumented Dart Impact (23°C, Total Energy)	60.0	J	ASTM D3763
Thermal	Nominal Value	Unit	Test Method
Deflection Temperature Under Load			
0.45 MPa, unannealed, 3.20mm	195	°C	ASTM D648
0.45 MPa, unannealed, 64.0mm span ¹²	191	°C	ISO 75-2/Bf
Vicat Softening Temperature			
--	198	°C	ASTM D1525 ¹³
--	197	°C	ISO 306/B50
--	195	°C	ISO 306/B120
Ball Pressure Test (125°C)	Pass		IEC 60695-10-2
Linear thermal expansion coefficient			
Flow: -40 to 40°C	7.8E-5	cm/cm/°C	ASTM E831
Flow: 23 to 60°C	8.3E-5	cm/cm/°C	ISO 11359-2
Lateral: -40 to 40°C	8.0E-5	cm/cm/°C	ASTM E831
Lateral: 23 to 60°C	8.5E-5	cm/cm/°C	ISO 11359-2
Specific Heat	1400	J/kg/°C	ASTM C351
Thermal Conductivity	0.20	W/m/K	ASTM C177
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	4.0E+3	ohms · cm	ASTM D257
Flammability	Nominal Value	Unit	Test Method
Flame Rating			UL 94
1.50 mm, Testing by SABIC	V-1		UL 94

V-0

5VB

2.00 mm, Testing by SABIC

5VA

UL 94

Glow Wire Flammability Index (2.00 mm)	960	°C	IEC 60695-2-12
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Glow Wire Ignition Temperature (1.00 mm)	800	°C	IEC 60695-2-13
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Injection	Nominal Value	Unit
Drying Temperature	93.3 - 107	°C
Drying Time	3.0 - 4.0	hr
Drying Time, Maximum	8.0	hr
Suggested Max Moisture	0.070	%
Suggested Shot Size	30 - 50	%
Rear Temperature	260 - 299	°C
Middle Temperature	266 - 299	°C
Front Temperature	271 - 299	°C
Nozzle Temperature	277 - 299	°C
Processing (Melt) Temp	277 - 299	°C
Mold Temperature	65.6 - 93.3	°C
Back Pressure	0.345 - 1.38	MPa
Screw Speed	20 - 100	rpm
Vent Depth	0.013 - 0.038	mm

Extrusion	Nominal Value	Unit
Drying Temperature	105 - 110	°C
Drying Time	8.0	hr
Suggested Max Moisture	0.030	%
Cylinder Zone 1 Temp.	245 - 260	°C
Cylinder Zone 2 Temp.	245 - 260	°C
Cylinder Zone 3 Temp.	245 - 260	°C
Cylinder Zone 4 Temp.	245 - 260	°C
Adapter Temperature	245 - 260	°C
Melt Temperature	245 - 260	°C
Die Temperature	245 - 260	°C
Calibration Temp, First	35.0 - 75.0	°C

Extrusion instructions

Drying Time (Cumulative): 24 hrsWater Bath Temperature: 35 - 50 °C

NOTE	
1.	5.0 mm/min
2.	Type 1, 50mm/min

3.	Type 1, 50mm/min
4.	Type 1, 50mm/min
5.	Type 1, 50mm/min
6.	1.3 mm/min
7.	2.0 mm/min
8.	1.3 mm/min
9.	80*10*4 sp=62mm
10.	80*10*4
11.	80*10*4
12.	80*10*4 mm
13.	标准 B (120°C/h), 载荷2 (50N)

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