+135-3858-6433 (GuangDong)
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NORYL GTX™ Resin GTX679

Americas: COMMERCIAL

NORYL GTX GTX679 Resin is a blend of Polyphenylene Ether(PPE) + Polyamide(PA) resin that is mineral filled, conductive, and suitable for injection molding. The conductivity level is optimized to allow for primer-less electrostatic painting. GTX679 has improved impact/elongation and the mineral content enables the material to be used in structural applications replacing metal or thermoset resins. The material is only available in black.

TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
MECHANICAL			
Tensile Stress, yld, Type I, 5 mm/min	650	kgf/cm²	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	630	kgf/cm²	ASTM D 638
Tensile Strain, yld, Type I, 5 mm/min	3	%	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	4	%	ASTM D 638
Tensile Modulus, 5 mm/min	45300	kgf/cm²	ASTM D 638
Flexural Stress, brk, 1.3 mm/min, 50 mm span	1100	kgf/cm²	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	40700	kgf/cm²	ASTM D 790
Tensile Stress, yield, 5 mm/min	61	MPa	ISO 527
Tensile Stress, break, 5 mm/min	61	MPa	ISO 527
Tensile Strain, yield, 5 mm/min	2	%	ISO 527
Tensile Strain, break, 5 mm/min	5	%	ISO 527
Tensile Modulus, 1 mm/min	4790	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	109	MPa	ISO 178
Flexural Modulus, 2 mm/min	4440	MPa	ISO 178
IMPACT			
Izod Impact, notched, 23°C	3	cm-kgf/cm	ASTM D 256
Izod Impact, notched, -30°C	3	cm-kgf/cm	ASTM D 256
Instrumented Impact Total Energy, 23°C	71	cm-kgf	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	4	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	3	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	3	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	185	°C	ASTM D 1525

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TYPICAL PROPERTIES[1]	TYPICAL VALUE	Unit	Standard
THERMAL			
HDT, 0.45 MPa, 3.2 mm, unannealed	185	°C	ASTM D 648
CTE, -40°C to 40°C, flow	5.95E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.49E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, flow	5.95E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	6.49E-05	1/°C	ISO 11359-2
Vicat Softening Temp, Rate B/50	185	°C	ISO 306
Vicat Softening Temp, Rate B/120	188	°C	ISO 306
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	184	°C	ISO 75/Bf
PHYSICAL			
Specific Gravity	1.24	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm (5)	0.7 - 0.9	%	SABIC Method
Melt Flow Rate, 280°C/5.0 kgf	16	g/10 min	ASTM D 1238
Density	1.24	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	3.6	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.7	%	ISO 62
Melt Volume Rate, MVR at 220°C/5.0 kg	14	cm³/10 min	ISO 1133

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• Do NOT mix NORYL GTX* resin with other grades of NORYL* resins.

PROCESSING PARAMETERS	TYPICAL VALUE	Unit
Injection Molding		
Drying Temperature	95 - 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
Nozzle Temperature	275 - 300	°C
Front - Zone 3 Temperature	270 - 300	°C
Middle - Zone 2 Temperature	265 - 300	°C
Rear - Zone 1 Temperature	260 - 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

• Polystyrene and acrylic regrind are effective purging Materials. Use temperature range appropriate for particular purging resin.
• Regrind must also be dried. Maximum 25% regrind.
• Dry at recommended temperatures and times for optimum performance. Overdrying can cause loss of physical properties and/or create appearance defects. Do not exceed recommended basic drying time and temperature above or:
  • 4-8 hrs at 95°C (200°F), 10 hrs max
  • 6-12 hrs at 80°C (175°F), 16 hrs max
  • 8-16 hrs at 65°C (150°F), 24 hrs max
• AVOID air circulating tray ovens. Moisture levels in heated ambient air can exceed moisture level in the resin itself, causing moisture ABSORPTION not drying.
• Avoid melt temperature in excess of 300°C (575°F) and residence times over 6-8 minutes (may affect properties and/or appearance).
• Nozzle temperature controls assist in elimination of drool premature freeze-off.
• Shot sizes in excess of 50% barrel capacity can lead to difficulties in providing a consistent, homogenous plastic melt.