

NORYL GTXTM RESIN GTX820

REGION AMERICAS

DESCRIPTION

NORYL GTXTM 820 resin is a 20% glass reinforced alloy of Polyphenylene Ether (PPE) + Polyamide (PA). This injection moldable grade has high stiffness (flexural modulus 4000 MPa), excellent chemical resistance, and high heat resistance. NORYL GTX GTX830 resin is an excellent candidate for a wide variety of applications including valves for water management.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, break, 5 mm/min	139	MPa	ISO 527
Tensile Strain, break, 5 mm/min	3.6	%	ISO 527
Tensile Modulus, 1 mm/min @ 120°C	6400	MPa	ISO 527
Flexural Modulus, 2 mm/min	5960	MPa	ISO 178
Flexural Stress, break, 2 mm/min	217	MPa	ISO 178
Tensile Modulus, 5 mm/min	6350	MPa	ASTM D 638
Tensile Strain, brk, Type I, 5 mm/min	3.6	%	ASTM D 638
Tensile Stress, brk, Type I, 5 mm/min	133	MPa	ASTM D 638
Flexural Modulus, 1.3 mm/min, 50 mm span	6030	MPa	ASTM D 790
Flexural Stress, brk, 1.3 mm/min, 50 mm span	210	MPa	ASTM D 790
Flexural Stress, yld, 2.6 mm/min, 100 mm span	194	MPa	ASTM D 790
Flexural Modulus, 2.6 mm/min, 100 mm span	5960	MPa	ASTM D 790
Hardness, Rockwell R	119	-	ASTM D 785
IMPACT			
Izod Impact, notched 80*10*4 +23°C	8.8	kJ/m ²	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	86	kJ/m ²	ISO 180/1U
Izod Impact, notched, 23°C	80	J/m	ASTM D 256
Izod Impact, notched, -30°C	53	J/m	ASTM D 256
Izod Impact, unnotched, 23°C	900	J/m	ASTM D 4812
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	8.7	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	62	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate A/50	252	°C	ISO 306
Vicat Softening Temp, Rate B/50	229	°C	ISO 306
Vicat Softening Temp, Rate B/50	248	°C	ASTM D 1525
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	211	°C	ISO 75/Af
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	248	°C	ISO 75/Bf
HDT, 0.45 MPa, 6.4 mm, unannealed	254	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	232	°C	ASTM D 648
CTE, 23°C to 60°C, flow	2.7E-05	1/°C	ISO 11359-2
CTE, 23°C to 60°C, xflow	7.8E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, flow	2.7E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, xflow	8.7E-05	1/°C	ASTM E 831

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
CTE, -20°C to 150°C, flow	0.0000306 – 0.0000396	1 / °C	ASTM E 831
PHYSICAL			
Specific Gravity	1.24	-	ASTM D 792
Density	1.245	g/cm ³	ASTM D 792
Density	1.25	g/cm ³	ISO 1183
Moisture Absorption, 50% RH, 24 hrs	0.17	%	ASTM D 570
Water Absorption, 24 hours	0.5	%	ASTM D 570
Moisture Absorption (23°C / 50% RH)	0.49	%	ISO 62
Water Absorption, (23°C/sat)	1.88	%	ISO 62
Mold Shrinkage, flow, 24 hrs	0.27	%	ISO 294
Mold Shrinkage, xflow, 24 hrs	0.93	%	ISO 294
Mold Shrinkage, flow, 24 hrs	0.27	%	ASTM D 955
Mold Shrinkage, xflow, 24 hrs	0.93	%	ASTM D 955
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.6	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.65 – 0.85	%	SABIC method
Melt Volume Rate, MVR at 280°C/5.0 kg	7.1	cm ³ /10 min	ISO 1133
Melt Flow Rate, 280°C/5.0 kgf	7.0	g/10 min	ASTM D 1238
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	280 – 305	°C	
Nozzle Temperature	280 – 305	°C	
Front - Zone 3 Temperature	275 – 305	°C	
Middle - Zone 2 Temperature	270 – 305	°C	
Rear - Zone 1 Temperature	265 – 305	°C	
Mold Temperature	75 – 120	°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	

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