

NORYL™ RESIN PKN4775F

REGION AMERICAS

DESCRIPTION

NORYL PKN4775F resin is a non-reinforced, opaque blend of polyphenylene ether (PPE) + polystyrene (PS) and is FDA food compliant in several colors. This high heat, thin wall extrusion and injection moldable grade is an improved version of NORYL PKN4775F resin and exhibits modulus at elevated temperature and good chemical resistance. NORYL PKN4775F resin is targeted for applications in high performance packaging.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Low Warp, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Food contact, Dimensional stability, High temperature resistance, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Sheet extrusion

INDUSTRY	SUB INDUSTRY
Industrial	Material Handling
Packaging	Industrial Packaging

TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL ⁽¹⁾			
Tensile Stress, yld, Type I, 50 mm/min	51	MPa	ASTM D638
Tensile Stress, brk, Type I, 50 mm/min	47	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	5.1	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	35	%	ASTM D638
Tensile Modulus, 5 mm/min	2120	MPa	ASTM D638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	78	MPa	ASTM D790
Flexural Modulus, 1.3 mm/min, 50 mm span	2210	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	51	MPa	ISO 527
Tensile Stress, break, 50 mm/min	47	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.2	%	ISO 527
Tensile Strain, break, 50 mm/min	29.4	%	ISO 527
Tensile Modulus, 1 mm/min	2120	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	82	MPa	ISO 178
Flexural Modulus, 2 mm/min	2160	MPa	ISO 178
IMPACT ⁽¹⁾			
Izod Impact, notched, 23°C	268	J/m	ASTM D256
Izod Impact, notched, -30°C	161	J/m	ASTM D256
Instrumented Dart Impact Total Energy, 23°C	39	J	ASTM D3763
Izod Impact, notched 80°10'4 +23°C	20	kJ/m ²	ISO 180/1A
Izod Impact, notched 80°10'4 -30°C	11	kJ/m ²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80°10'4 sp=62mm	19	kJ/m ²	ISO 179/1eA

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
THERMAL ⁽¹⁾			
Vicat Softening Temp, Rate B/50	142	°C	ASTM D1525
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D648
HDT, 1.82 MPa, 3.2mm, unannealed	122	°C	ASTM D648
CTE, -40°C to 40°C, flow	9.2E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, xflow	9.5E-05	1/°C	ASTM E831
CTE, -40°C to 40°C, flow	9.2E-05	1/°C	ISO 11359-2
CTE, -40°C to 40°C, xflow	9.5E-05	1/°C	ISO 11359-2
Ball Pressure Test, 75°C +/- 2°C	N/A	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	142	°C	ISO 306
Vicat Softening Temp, Rate B/120	144	°C	ISO 306
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	122	°C	ISO 75/Af
PHYSICAL ⁽¹⁾			
Specific Gravity	1.05	-	ASTM D792
Mold Shrinkage, flow, 3.2 mm ⁽²⁾	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	15.3	g/10 min	ASTM D1238
Density	1.05	g/cm ³	ISO 1183
Water Absorption, (23°C/saturated)	0.25	%	ISO 62-1
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	14	cm ³ /10 min	ISO 1133
SHEET EXTRUSION			
Drying Temperature	70 – 80	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0	%	
Melt Temperature	265 – 275	°C	
Barrel - Zone 1 Temperature	205 – 225	°C	
Barrel - Zone 2 Temperature	215 – 240	°C	
Barrel - Zone 3 Temperature	240 – 265	°C	
Barrel - Zone 4 Temperature	240 – 265	°C	
Adapter Temperature	240 – 265	°C	
Die Temperature	240 – 265	°C	
Roll Stack Temp - Top	105 – 120	°C	
Roll Stack Temp - Middle	105 – 120	°C	
Roll Stack Temp - Bottom	105 – 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.

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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