NORYL™ RESIN PKN4775F

REGION AMERICAS

DESCRIPTION

NORYL PKN4775F resin is a non-reinforced, opaque blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS) 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 an excellent candidate for applications in high performance packaging. *See NORYL PKN4775 resin for NON FDA food compliant version.

TYPICAL PROPERTY VALUES

Revision 20190925

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	51	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	47	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	5.1	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	35	%	ASTM D 638
Tensile Modulus, 5 mm/min	2120	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	78	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2210	MPa	ASTM D 790
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			
Izod Impact, notched, 23°C	268	J/m	ASTM D 256
Izod Impact, notched, -30°C	161	J/m	ASTM D 256
Instrumented Impact Total Energy, 23°C	39	J	ASTM D 3763
Izod Impact, notched 80*10*4 +23°C	20	kJ/m²	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	11	kJ/m²	ISO 180/1A
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	19	kJ/m²	ISO 179/1eA
THERMAL			
Vicat Softening Temp, Rate B/50	142	°C	ASTM D 1525
HDT, 0.45 MPa, 3.2 mm, unannealed	138	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	122	°C	ASTM D 648
CTE, -40°C to 40°C, flow	9.2E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	9.5E-05	1/°C	ASTM E 831
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

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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT/Af, 1.8 MPa Flatw 80*10*4 sp=64mm	122	°C	ISO 75/Af
PHYSICAL			
Specific Gravity	1.05	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.5 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/5.0 kgf	15.3	g/10 min	ASTM D 1238
Density	1.05	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.25	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.05	%	ISO 62
Melt Volume Rate, MVR at 300°C/5.0 kg	14	cm³/10 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	

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