

# NORYL™ RESIN NP6100

REGION ASIA

## DESCRIPTION

NORYL NP6100 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS) designed for high heat resistance with good strength, toughness and robust FR performance. This extrudable grade contains non-brominated, non-chlorinated flame retardant. NORYL NP6100 resin may be an excellent candidate for mining pipe applications as well as low smoke cable channel applications where EN45545 R22 certificate (European railway standard for small electrical parts) is required.

GENERAL INFORMATION	
Features	Flame Retardant, Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability, High temperature resistance, No PFAS intentionally added
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Extrusion

INDUSTRY	SUB INDUSTRY
Industrial	Electrical
Mass Transportation	Rail

## TYPICAL PROPERTY VALUES

Revision 20231109

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, brk, Type I, 50 mm/min	47	MPa	ASTM D638
Tensile Strain, yld, Type I, 50 mm/min	4.5	%	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	10.5	%	ASTM D638
Flexural Stress, yield, 6.4 mm	95	MPa	ASTM D790
Flexural Modulus, 6.4 mm	2200	MPa	ASTM D790
Tensile Stress, yield, 50 mm/min	68	MPa	ISO 527
Tensile Stress, break, 50 mm/min	52	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	4.5	%	ISO 527
Tensile Strain, break, 50 mm/min	7	%	ISO 527
Tensile Modulus, 1 mm/min	2330	MPa	ISO 527
Flexural Modulus, 2 mm/min	2350	MPa	ISO 178
Flexural Stress, yield, 2 mm/min	77	MPa	ISO 178
Flexural Stress, break, 2 mm/min	100	MPa	ISO 178
Tensile Stress, yld, Type I, 50 mm/min	60	MPa	ASTM D638
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, notched, 23°C	510	J/m	ASTM D256
Izod Impact, notched, -30°C	180	J/m	ASTM D256
Izod Impact, notched 80*10*4 +23°C	39.9	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, notched 80*10*4 -30°C	15.8	kJ/m <sup>2</sup>	ISO 180/1A
Izod Impact, unnotched 80*10*4 +23°C	NB	kJ/m <sup>2</sup>	ISO 180/1U

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Izod Impact, unnotched 80*10*4 -30°C	NB	kJ/m <sup>2</sup>	ISO 180/1U
Charpy 23°C, V-notch Edgew 80*10*4 sp=62mm	37	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80*10*4 sp=62mm	21	kJ/m <sup>2</sup>	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80*10*4 sp=62mm	NB	kJ/m <sup>2</sup>	ISO 179/1eU
<b>THERMAL <sup>(1)</sup></b>			
HDT, 1.82 MPa, 3.2mm, unannealed	121	°C	ASTM D648
HDT/Bf, 0.45 MPa Flatw 80*10*4 sp=64mm	146	°C	ISO 75/Bf
Vicat Softening Temp, Rate B/50	151	°C	ISO 306
Vicat Softening Temp, Rate B/120	153	°C	ISO 306
<b>PHYSICAL <sup>(1)</sup></b>			
Specific Gravity	1.08	-	ASTM D792
Melt Flow Rate, 280°C/ 10.0 kgf	10.5	g/ 10 min	ASTM D1238
Mold Shrinkage, flow, 3.2 mm <sup>(2)</sup>	0.5 – 0.7	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm <sup>(2)</sup>	0.5 – 0.7	%	SABIC method
Melt Volume Rate, MVR at 280°C/ 10.0 kg	11	cm <sup>3</sup> / 10 min	ISO 1133
<b>FLAME CHARACTERISTICS</b>			
UL Compliant, 94V-1 Flame Class Rating	1.5	mm	UL 94 by SABIC-IP
Glow Wire Flammability Index 960°C, passes at	1	mm	IEC 60695-2-12
Smoke density, DS-max, 25 kW/m <sup>2</sup> , 1.5 mm	47	-	ISO 5659-2
<b>INJECTION MOLDING <sup>(3)</sup></b>			
Drying Temperature	90 – 100	°C	
Drying Time	2 – 4	Hrs	
Drying Time (Cumulative)	6	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	255 – 275	°C	
Rear - Zone 1 Temperature	235 – 255	°C	
Middle - Zone 2 Temperature	255 – 275	°C	
Front - Zone 3 Temperature	255 – 275	°C	
Nozzle Temperature	255 – 275	°C	
<b>EXTRUSION</b>			
Adapter Temperature	255 – 275	°C	
Die Temperature	255 – 275	°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.

(3) Injection Molding parameters are only mentioned as general guidelines. These may not apply or may need adjustment in specific situations such as low shot sizes, large part molding, thin wall molding and gas-assist molding.

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