

# NORYL™ RESIN PN235

REGION AMERICAS

## DESCRIPTION

NORYL PN235 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This plate able compression and injection moldable grade exhibits good impact resistance along with low moisture absorption, creep resistance, dimensional stability, and hydrolytic stability. NORYL PN235 resin is an excellent candidate for a variety of plated automotive applications.

GENERAL INFORMATION	
Features	Hydrolytic Stability, Low Warpage, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Aesthetics/Visual effects, Electroplatable, Dimensional stability
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive Exteriors

## TYPICAL PROPERTY VALUES

Revision 20211028

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, yld, Type I, 50 mm/min	37	MPa	ASTM D638
Tensile Strain, brk, Type I, 50 mm/min	72	%	ASTM D638
Flexural Stress, yld, 2.6 mm/min, 100 mm span	55	MPa	ASTM D790
Flexural Modulus, 2.6 mm/min, 100 mm span	1820	MPa	ASTM D790
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, notched, 23°C	347	J/m	ASTM D256
Izod Impact, notched, -40°C	133	J/m	ASTM D256
<b>THERMAL <sup>(1)</sup></b>			
HDT, 0.45 MPa, 6.4 mm, unannealed	112	°C	ASTM D648
HDT, 1.82 MPa, 6.4 mm, unannealed	104	°C	ASTM D648
CTE, 0°C to 100°C, flow	7.56E-05	1/°C	ASTM E831
Relative Temp Index, Elec	50	°C	UL 746B
Relative Temp Index, Mech w/impact	50	°C	UL 746B
Relative Temp Index, Mech w/o impact	50	°C	UL 746B
<b>PHYSICAL <sup>(1)</sup></b>			
Specific Gravity	1.05	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.1	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm <sup>(2)</sup>	0.5 – 0.7	%	SABIC method
<b>ELECTRICAL <sup>(1)</sup></b>			
Arc Resistance, Tungsten {PLC}	6	PLC Code	ASTM D495
Hot Wire Ignition {PLC}	3	PLC Code	UL 746A

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
High Voltage Arc Track Rate {PLC}	3	PLC Code	UL 746A
High Ampere Arc Ign, surface {PLC}	2	PLC Code	UL 746A
Comparative Tracking Index (UL) {PLC}	0	PLC Code	UL 746A
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94HB Flame Class Rating	1.47	mm	UL 94
<b>INJECTION MOLDING <sup>(3)</sup></b>			
Drying Temperature	95 – 105	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	265 – 295	°C	
Nozzle Temperature	265 – 295	°C	
Front - Zone 3 Temperature	255 – 295	°C	
Middle - Zone 2 Temperature	245 – 290	°C	
Rear - Zone 1 Temperature	230 – 280	°C	
Mold Temperature	65 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	20 – 100	rpm	
Shot to Cylinder Size	30 – 70	%	
Vent Depth	0.038 – 0.051	mm	

- (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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