

# NORYL™ RESIN N1050

REGION AMERICAS

## DESCRIPTION

NORYL N1050 resin is a non-reinforced blend of polyphenylene ether (PPE) + polystyrene (PS). This injection moldable grade was designed for improved dimensional stability and flow. This grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of 5VA at 2.5mm and V0 at 1.5mm along with impact strength, very low moisture absorption, excellent dimensional stability, and good electrical properties. NORYL N1050 resin is an excellent candidate for a variety of applications requiring electrically insulating properties, low moisture absorption and low warpage.

GENERAL INFORMATION	
Features	Flame Retardant, Hydrolytic Stability, Amorphous, Low Shrinkage, Low Moisture Absorption, Low Specific Gravity, Aesthetics/Visual effects, Non Cl/Br flame retardant, Non halogenated flame retardant, Dimensional stability
Fillers	Unreinforced
Polymer Types	Polyphenylene Ether + PS (PPE+PS)
Processing Techniques	Injection Molding

INDUSTRY	SUB INDUSTRY
Automotive	Automotive EV Batteries
Building and Construction	Building Component
Consumer	Home Appliances, Commercial Appliance
Electrical and Electronics	Energy Management, Mobile Phone - Computer - Tablets
Industrial	Electrical

## TYPICAL PROPERTY VALUES

Revision 20241015

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
<b>MECHANICAL <sup>(1)</sup></b>			
Tensile Stress, yield	63	MPa	SABIC - Japan Method
Tensile Strain, break	40	%	SABIC - Japan Method
Flexural Stress	98	MPa	ASTM D790
Flexural Modulus	2530	MPa	ASTM D790
<b>IMPACT <sup>(1)</sup></b>			
Izod Impact, notched, 23°C	117	J/m	ASTM D256
<b>THERMAL <sup>(1)</sup></b>			
HDT, 1.82 MPa, 6.4 mm, unannealed	105	°C	ASTM D648
CTE, -30°C to 30°C	7.00E-05	1/°C	TMA
<b>PHYSICAL <sup>(1)</sup></b>			
Specific Gravity	1.1	-	ASTM D792
Water Absorption, (23°C/24hrs)	0.07	%	ASTM D570
Mold Shrinkage, flow, 3.2 mm <sup>(2)</sup>	0.5 – 0.7	%	SABIC method
Melt Flow Rate, 250°C/10.0 kgf	17	g/10 min	ASTM D1238
<b>ELECTRICAL <sup>(1)</sup></b>			
Surface Resistivity	1.E+16	Ω	ASTM D257

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
Relative Permittivity, 50/60 Hz	2.78	-	ASTM D150
Dissipation Factor, 50/60 Hz	0.003	-	ASTM D150
<b>FLAME CHARACTERISTICS</b>			
UL Recognized, 94V-0 Flame Class Rating	1.5	mm	UL 94
UL Recognized, 94-5VA Flame Class Rating	2.5	mm	UL 94
<b>INJECTION MOLDING <sup>(3)</sup></b>			
Drying Temperature	75 – 80	°C	
Drying Time	3 – 4	Hrs	
Drying Time (Cumulative)	8	Hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	250 – 275	°C	
Nozzle Temperature	250 – 275	°C	
Front - Zone 3 Temperature	240 – 275	°C	
Middle - Zone 2 Temperature	225 – 270	°C	
Rear - Zone 1 Temperature	215 – 265	°C	
Mold Temperature	55 – 75	°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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