

NORYL™ RESIN N1050

REGION ASIA

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 |
| 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 20231109

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|----------------|----------|----------------------|
| MECHANICAL ⁽¹⁾ | | | |
| 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 |
| IMPACT ⁽¹⁾ | | | |
| Izod Impact, notched, 23°C | 117 | J/m | ASTM D256 |
| THERMAL ⁽¹⁾ | | | |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 105 | °C | ASTM D648 |
| CTE, -30°C to 30°C | 7.00E-05 | 1/°C | TMA |
| PHYSICAL ⁽¹⁾ | | | |
| Specific Gravity | 1.1 | - | ASTM D792 |
| Water Absorption, (23°C/24hrs) | 0.07 | % | ASTM D570 |
| Mold Shrinkage, flow, 3.2 mm ⁽²⁾ | 0.5 – 0.7 | % | SABIC method |
| Melt Flow Rate, 250°C/10.0 kgf | 17 | g/10 min | ASTM D1238 |
| ELECTRICAL ⁽¹⁾ | | | |
| 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 |
| FLAME CHARACTERISTICS | | | |
| UL Recognized, 94V-0 Flame Class Rating | 1.5 | mm | UL 94 |
| UL Recognized, 94-5VA Flame Class Rating | 2.5 | mm | UL 94 |
| INJECTION MOLDING ⁽³⁾ | | | |
| 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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