# NORYL™ RESIN N1050

REGION ASIA

## DESCRIPTION

NORYL™ N1050 resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). 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.

## TYPICAL PROPERTY VALUES

Revision 20191127

| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| MECHANICAL | | | |
| Tensile Stress, yield | 63 | MPa | SABIC - Japan Method |
| Tensile Strain, break | 40 | % | SABIC - Japan Method |
| Flexural Stress | 98 | MPa | ASTM D 790 |
| Flexural Modulus | 2530 | MPa | ASTM D 790 |
| IMPACT | | | |
| Izod Impact, notched, 23°C | 117 | J/m | ASTM D 256 |
| THERMAL | | | |
| HDT, 1.82 MPa, 6.4 mm, unannealed | 105 | °C | ASTM D 648 |
| CTE, -30°C to 30°C | 7.00E-05 | 1/°C | TMA |
| PHYSICAL | | | |
| Specific Gravity | 1.1 | - | ASTM D 792 |
| Water Absorption, 24 hours | 0.07 | % | ASTM D 570 |
| Mold Shrinkage, flow, 3.2 mm | 0.5 – 0.7 | % | SABIC method |
| Melt Flow Rate, 250°C/10.0 kgf | 17 | g/10 min | ASTM D 1238 |
| ELECTRICAL | | | |
| Surface Resistivity | 1.E+16 | Ohm | ASTM D 257 |
| Relative Permittivity, 50/60 Hz | 2.78 | - | ASTM D 150 |
| Dissipation Factor, 50/60 Hz | 0.003 | - | ASTM D 150 |
| 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 | | | |
| 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 | |

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| PROPERTIES | TYPICAL VALUES | UNITS | TEST METHODS |
|---|---|---|---|
| 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 | |

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