# NORYL™ Resin SE1X - Asia

(PPE+PS) Saudi Basic Industries Corporation (SABIC)

## Product Texts

NORYL™ SE1X resin is a non-reinforced blend of polyphenylene ether (PPE) + high impact polystyrene (HIPS). This injection moldable grade contains non-brominated, non-chlorinated flame retardant and carries a UL94 flame rating of V0/V1 at 1.5mm along with a UL746C Outdoor Suitability rating of F1. NORYL SE1X resin offers strong electrical performance, low moisture absorption, dimensional stability, and hydrolytic stability. This material is an excellent candidate for indoor and outdoor electrical enclosures , heating ventilation / air conditioning (HVAC) applications, and solar / photovoltaic (PV) junction box applications. *for enhanced processing version, please see NORYL NH5120 resin grade.

UL Yellow Card Link E45587-100107136

| Mechanical properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ASTM Data** | | | |
| Tensile Strength at Yield | **65** | MPa | ASTM D 638 |
| Tensile Strength at Break | **53** | MPa | ASTM D 638 |
| Elongation at Yield | **4** | % | ASTM D 638 |
| Elongation at Break | **15** | % | ASTM D 638 |
| Izod Impact notched, 1/8 in | **180** | J/m | ASTM D 256 |
| Izod Impact notched, Low-Temperature | **106** | J/m | ASTM D 256 |
| Temperature | **-30** | °C | - |

| Thermal properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ISO Data** | | | |
| Burning behav. at 1.5 mm nom. thickn. | **V-1** | class | IEC 60695-11-10 |
| Thickness tested | **1.5** | mm | - |
| Burning behav. at thickness h | **V-0** | class | IEC 60695-11-10 |
| Thickness tested | **6.0** | mm | - |
| Glow Wire Flammability Index (GWFI) | **900** | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index (GWFI) | **960** | °C | IEC 60695-2-12 |
| Glow Wire Flammability Index (GWFI) | **960** | °C | IEC 60695-2-12 |
| Glow Wire Ignition Temperature (GWIT) | **700** | °C | IEC 60695-2-13 |
| GWIT - thickness tested (1) | **1** | mm | - |
| Glow Wire Ignition Temperature (GWIT) | **725** | °C | IEC 60695-2-13 |
| GWIT - thickness tested (2) | **2** | mm | - |
| Glow Wire Ignition Temperature (GWIT) | **725** | °C | IEC 60695-2-13 |
| GWIT - thickness tested (3) | **3** | mm | - |

| Electrical properties | Value | Unit | Test Standard |
|---|---|---|---|
| **ASTM Data** | | | |
| Dielectric Strength, Short Time | **18.1** | kV/mm | ASTM D 149 |
| Dissipation Factor, 60 Hz | **0.0034** | - | ASTM D 150 |
| Dissipation Factor, 1 MHz | **0.0021** | - | ASTM D 150 |
| Dielectric Constant, 60 Hz | **2.52** | - | ASTM D 150 |
| Dielectric Constant, 1 MHz | **2.46** | - | ASTM D 150 |
| Surface Resistivity | **1E15** | Ohm | ASTM D 257 |
| Volume Resistivity | **>1E15** | Ohm*cm | ASTM D 257 |

| Other properties | Value | Unit | Test Standard |
|---|---|---|---|
| Density | **1100** | kg/m³ | ASTM D 792 |

| Processing Recommendation Injection Molding | Value | Unit | Test Standard |
|---|---|---|---|
| Pre-drying - Temperature | **105 - 110** | °C | - |
| Pre-drying - Time | **3 - 4** | h | - |
| Processing humidity | **≤0.02** | % | - |
| Melt temperature | **280 - 310** | °C | - |
| Mold temperature | **75 - 105** | °C | - |
| Zone 1 | **250 - 300** | °C | - |
| Zone 2 | **260 - 305** | °C | - |
| Zone 3 | **270 - 310** | °C | - |
| Screw speed | **20 - 100** | rpm | - |

| | | | |
|---|---|---|---|
| Back pressure | **0.3 - 0.7** | MPa | - |

## Characteristics

**Processing**
Injection Molding

**Additives**
Flame retarding agent

**Special Characteristics**
Flame retardant

**Chemical Resistance**
Hydrolytically Stable

**Applications**
Automotive

**Regional Availability**
Asia Pacific