

## SABIC Innovative Plastics NORYL LS6010 PPE+HIPS

Category : Polymer , Thermoplastic , Polyphenylene Ether/PPO , Polystyrene (PS)

### Material Notes:

Noryl\* LS6010 resin is a high performance modified PPE-PS blend that exhibits an excellent balance of nonhalogenated flame retardance, lower smoke production upon burning and low specific gravity for light weight parts. Noryl LS6010 is available in custom colors and may be an excellent material candidate for applications requiring light weight parts and strong flame, smoke and toxicity performance.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_SABIC-Innovative-Plastics-NORYL-LS6010-PPEHIPS.php](http://www.lookpolymers.com/polymer_SABIC-Innovative-Plastics-NORYL-LS6010-PPEHIPS.php)

| Physical Properties            | Metric   | English  | Comments                                |
|--------------------------------|--|--|---|
| Specific Gravity               | 1.11 g/cc  | 1.11 g/cc  | ASTM D792                               |
| Density                        | 1.11 g/cc  | 0.0401 lb/in <sup>3</sup>  | ISO 1183                                |
| Moisture Absorption            | 0.0500 %   | 0.0500 %   | 23 <sup>o</sup> C / 50% RH; ISO 62      |
| Water Absorption at Saturation | 0.20 %   | 0.20 %   | ISO 62                                  |
| Linear Mold Shrinkage, Flow    | 0.0050 - 0.0080 cm/cm<br>@Thickness 3.20 mm                      | 0.0050 - 0.0080 in/in<br>@Thickness 0.126 in                     | SABIC Method                            |
| Melt Flow                      | 5.6 g/10 min<br>@Load 5.00 kg,<br>Temperature 280 <sup>o</sup> C | 5.6 g/10 min<br>@Load 11.0 lb,<br>Temperature 536 <sup>o</sup> F | ASTM D1238                              |
| Melt Index of Compound         | 5.0 g/10 min<br>@Load 5.00 kg,<br>Temperature 280 <sup>o</sup> C | 5.0 g/10 min<br>@Load 11.0 lb,<br>Temperature 536 <sup>o</sup> F | MVR [cm <sup>3</sup> /10 min]; ISO 1133 |

| Mechanical Properties     | Metric   | English  | Comments                     |
|---------------------------|----------|----------|------------------------------|
| Tensile Strength at Break | 53.0 MPa | 7690 psi | Type I, 50 mm/min; ASTM D638 |
|                           | 58.0 MPa | 8410 psi | 50 mm/min; ISO 527           |
| Tensile Strength, Yield   | 64.0 MPa | 9280 psi | Type I, 50 mm/min; ASTM D638 |
|                           | 64.0 MPa | 9280 psi | 50 mm/min; ISO 527           |
| Elongation at Break       | 8.3 %    | 8.3 %    | 50 mm/min; ISO 527           |
|                           | 20 %     | 20 %     | Type I, 50 mm/min; ASTM D638 |
| Elongation at Yield       | 4.6 %    | 4.6 %    | Type I, 50 mm/min; ASTM D638 |
|                           | 4.7 %    | 4.7 %    | 50 mm/min; ISO 527           |
| Tensile Modulus           | 2.22 GPa | 322 ksi  | 5 mm/min; ASTM D638          |

| Mechanical Properties      | Metric<br>2.33 GPa                       | English<br>339 ksi                           | Comments<br>1 mm/min; ISO 527      |
|----------------------------|--|--|------------------------------------|
| Flexural Yield Strength    | 100 MPa                                  | 14500 psi                                    | 1.3 mm/min, 50 mm span; ASTM D790  |
|                            | 100 MPa                                  | 14500 psi                                    | 2 mm/min; ISO 178                  |
| Flexural Modulus           | 2.36 GPa                                 | 342 ksi                                      | 2 mm/min; ISO 178                  |
|                            | 2.39 GPa                                 | 347 ksi                                      | 1.3 mm/min, 50 mm span; ASTM D790  |
| Izod Impact, Notched       | 3.00 J/cm                                | 5.62 ft-lb/in                                | ASTM D256                          |
|                            | 1.81 J/cm<br>@Temperature -30.0<br>Â°C   | 3.39 ft-lb/in<br>@Temperature -22.0<br>Â°F   | ASTM D256                          |
| Izod Impact, Notched (ISO) | 18.0 kJ/mÂ²                              | 8.57 ft-lb/inÂ²                              | 80*10*4; ISO 180/1A                |
|                            | 14.0 kJ/mÂ²<br>@Temperature -30.0<br>Â°C | 6.66 ft-lb/inÂ²<br>@Temperature -22.0<br>Â°F | 80*10*4; ISO 180/1A                |
| Charpy Impact, Notched     | 2.00 J/cmÂ²                              | 9.52 ft-lb/inÂ²                              | Edgew 80*10*4 sp=62mm; ISO 179/1eA |
| Dart Drop, Total Energy    | 52.0 J                                   | 38.4 ft-lb                                   | ASTM D3763                         |
|                            | @Temperature 23.0<br>Â°C                 | @Temperature 73.4 Â°F                        |                                    |

| Thermal Properties                             | Metric                           | English                         | Comments                          |
|--|----------------------------------|---------------------------------|-----------------------------------|
| CTE, linear, Parallel to Flow                  | 67.0 Âµm/m-Â°C                   | 37.2 Âµin/in-Â°F                | ASTM E 831                        |
|  | @Temperature -40.0 -<br>40.0 Â°C | @Temperature -40.0 -<br>104 Â°F |                                   |
|  | 67.0 Âµm/m-Â°C                   | 37.2 Âµin/in-Â°F                | ISO 11359-2                       |
|  | @Temperature -40.0 -<br>40.0 Â°C | @Temperature -40.0 -<br>104 Â°F |                                   |
| CTE, linear, Transverse to Flow                | 67.0 Âµm/m-Â°C                   | 37.2 Âµin/in-Â°F                | ASTM E 831                        |
|  | @Temperature -40.0 -<br>40.0 Â°C | @Temperature -40.0 -<br>104 Â°F |                                   |
|  | 67.0 Âµm/m-Â°C                   | 37.2 Âµin/in-Â°F                | ISO 11359-2                       |
|  | @Temperature -40.0 -<br>40.0 Â°C | @Temperature -40.0 -<br>104 Â°F |                                   |
| Deflection Temperature at 1.8 MPa<br>(264 psi) | 124 Â°C                          | 255 Â°F                         | Flatw 80*10*4 sp=64mm; ISO 75/ Af |
|  | 122 Â°C                          | 252 Â°F                         |                                   |

| Thermal Properties    | Metric<br>@ Thickness 3.20 mm | English<br>@ Thickness 0.126 in | Unannealed; ASTM D648<br>Comments |
|-----------------------|-------------------------------|---------------------------------|-----------------------------------|
| Vicat Softening Point | 143 Â°C                       | 289 Â°F                         | Rate B/50; ASTM D1525             |
|                       | 143 Â°C                       | 289 Â°F                         | Rate B/50; ISO 306                |
|                       | 146 Â°C                       | 295 Â°F                         | Rate B/120; ISO 306               |

| Descriptive Properties                         | Value | Comments            |
|--|-------|---------------------|
| Draeger Tube Toxicity, Flaming (1.52mm)        | Pass  | Based on ASTM E 662 |
| Draeger Tube Toxicity, Non-Flaming (1.52mm)    | Pass  | Based on ASTM E 662 |
| Flame Spread Index (1.52mm)                    | 15    | ASTM E 162          |
| NBS Smoke Density, Flaming, 4 min (1.52mm)     | 30    | ASTM E 662          |
| NBS Smoke Density, Non-Flaming, 4 min (1.52mm) | 7     | ASTM E 662          |
| Vertical Burn a (60s, 1.52mm) passes at        | 0sec  | FAR 25.853          |
| Vertical Burn b (12s, 1.52mm) passes at        | 4sec  | FAR 25.853          |

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