



**Americas: COMMERCIAL** 

30% glass/mineral reinforced, excellent thermal performance, low shrinkage and warp. Easy flow.

## Property

| TYPICAL PROPERTIES <sup>(1)</sup>  |  |  |  |
|--|--|--|--|
| MECHANICAL   | Value  | Unit   | Standard   |
| Tensile Stress, brk, Type I, 5 mm/min  | 82   | MPa  | ASTM D 638   |
| Tensile Strain, brk, Type I, 5 mm/min  | 2  | %  | ASTM D 638   |
| Flexural Stress, brk, 1.3 mm/min, 50 mm span   | 124  | MPa  | ASTM D 790   |
| Flexural Modulus, 1.3 mm/min, 50 mm span   | 6890   | MPa  | ASTM D 790   |
| Hardness, Rockwell R   | 109  | -  | ASTM D 785   |
| IMPACT   | Value  | Unit   | Standard   |
| Izod Impact, unnotched, 23°C   | 534  | J/m  | ASTM D 4812  |
| Izod Impact, notched, 23°C   | 101  | J/m  | ASTM D 256   |
| THERMAL  | Value  | Unit   | Standard   |
| HDT, 0.45 MPa, 6.4 mm, unannealed  | 215  | °C   | ASTM D 648   |
| HDT, 1.82 MPa, 6.4 mm, unannealed  | 198  | °C   | ASTM D 648   |
| CTE, -40°C to 40°C, flow   | 2.52E-05   | 1/°C   | ASTM E 831   |
| CTE, 60°C to 138°C, flow   | 2.52E-05   | 1/°C   | ASTM E 831   |
| PHYSICAL   | Value  | Unit   | Standard   |
| Specific Gravity   | 1.51   | -  | ASTM D 792   |
|  |  |  |  |
| Specific Volume  | 0.66   | cm³/g  | ASTM D 792   |
| Specific Volume<br>Water Absorption, 24 hours  | 0.66<br>0.07   | cm³/g<br>%   | ASTM D 792<br>ASTM D 570   |
| •  |  |  |  |
| Water Absorption, 24 hours   | 0.07   | %  | ASTM D 570   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm   | 0.07<br>0.3 - 0.4  | %<br>%   | ASTM D 570<br>SABIC Method   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm   | 0.07<br>0.3 - 0.4<br>0.4 - 0.6   | %<br>%<br>%  | ASTM D 570<br>SABIC Method<br>SABIC Method   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm  | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6  | %<br>%<br>%  | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm<br>Mold Shrinkage, xflow, 3.2-4.6 mm   | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6<br>0.6 - 0.8   | %<br>%<br>%<br>%                                   | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm<br>Mold Shrinkage, xflow, 3.2-4.6 mm<br>ELECTRICAL   | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6<br>0.6 - 0.8<br>Value                                  | %<br>%<br>%<br>%<br>Unit                           | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>Standard   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm<br>Mold Shrinkage, xflow, 3.2-4.6 mm<br>ELECTRICAL<br>Volume Resistivity   | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6<br>0.6 - 0.8<br><b>Value</b><br>1.E+17                 | %<br>%<br>%<br>%<br>Unit<br>Ohm-cm                 | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>Standard<br>ASTM D 257   |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm<br>Mold Shrinkage, xflow, 3.2-4.6 mm<br><b>ELECTRICAL</b><br>Volume Resistivity<br>Dielectric Strength, in oil, 3.2 mm                             | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6<br>0.6 - 0.8<br><b>Value</b><br>1.E+17<br>17.9         | %<br>%<br>%<br>%<br><b>Unit</b><br>Ohm-cm<br>kV/mm | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method<br><b>Standard</b><br>ASTM D 257<br>ASTM D 149                        |
| Water Absorption, 24 hours<br>Mold Shrinkage, flow, 1.5-3.2 mm<br>Mold Shrinkage, flow, 3.2-4.6 mm<br>Mold Shrinkage, xflow, 1.5-3.2 mm<br>Mold Shrinkage, xflow, 3.2-4.6 mm<br>ELECTRICAL<br>Volume Resistivity<br>Dielectric Strength, in oil, 3.2 mm<br>Relative Permittivity, 50/60 Hz | 0.07<br>0.3 - 0.4<br>0.4 - 0.6<br>0.4 - 0.6<br>0.6 - 0.8<br><b>Value</b><br>1.E+17<br>17.9<br>3.53 | %<br>%<br>%<br>%<br><b>Unit</b><br>Ohm-cm<br>kV/mm | ASTM D 570<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>SABIC Method<br>Standard<br>ASTM D 257<br>ASTM D 149<br>ASTM D 150 |

Source GMD, last updated:12/29/1999

## Processing

| Parameter                |           |      |
|--------------------------|-----------|------|
| Injection Molding        | Value     | Unit |
| Drying Temperature       | 120       | °C   |
| Drying Time              | 3 - 4     | hrs  |
| Drying Time (Cumulative) | 12        | hrs  |
| Maximum Moisture Content | 0.02      | %    |
| Melt Temperature         | 255 - 275 | °C   |
| Nozzle Temperature       | 255 - 270 | °C   |

| Front - Zone 3 Temperature  | 255 - 265     | °C  |
|-----------------------------|---------------|-----|
| Middle - Zone 2 Temperature | 250 - 260     | °C  |
| Rear - Zone 1 Temperature   | 245 - 255     | °C  |
| Mold Temperature            | 65 - 95       | °C  |
| Back Pressure               | 0.3 - 0.7     | MPa |
| Screw Speed                 | 50 - 80       | rpm |
| Shot to Cylinder Size       | 40 - 80       | %   |
| Vent Depth                  | 0.025 - 0.038 | mm  |

Source GMD, last updated:12/29/1999

## THESE PROPERTY VALUES ARE NOT INTENDED FOR SPECIFICATION PURPOSES.

## PLEASE CHECK WITH YOUR (LOCAL SALES OFFICE) FOR AVAILABILITY IN YOUR REGION

(1) Typical values only. Variations within normal tolerances are possible for various colors. All values are measured after at least 48 hours storage at 23°C/50% relative humidity. All properties, except the melt volume and melt flow rates, are measured on injection molded samples. All samples tested under ISO test standards are prepared according to ISO 294.

(2) Only typical data for selection purposes. Not to be used for part or tool design.

(3) This rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

(4) Internal measurements according to UL standards.

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