LEXAN™ 3413R resin
Polycarbonate
SABIC Innovative Plastics

Technical Data

Product Description
30% GR, provides improved mechanical properties and UL94V-1 rated at 0.058". Internal mold release added.

General
- Material Status: Commercial: Active
- Literature: Technical Datasheet
- UL Yellow Card: E121562-220881

Availability
- North America

Filler / Reinforcement
- Glass Fiber, 30% Filler by Weight

Additive
- Mold Release

Processing Method
- Injection Molding

Physical

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific Gravity</td>
<td>1.43</td>
<td>g/cm³</td>
<td>ASTM D792</td>
</tr>
<tr>
<td></td>
<td>1.44</td>
<td>g/cm³</td>
<td></td>
</tr>
<tr>
<td>Specific Volume</td>
<td>0.697</td>
<td>cm³/g</td>
<td>ASTM D792</td>
</tr>
<tr>
<td>Melt Mass-Flow Rate (MFR)</td>
<td>5.0</td>
<td>g/10 min</td>
<td>ASTM D1238</td>
</tr>
<tr>
<td>300°C/1.2 kg</td>
<td>19</td>
<td>g/10 min</td>
<td></td>
</tr>
<tr>
<td>300°C/5.0 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molding Shrinkage - Flow</td>
<td>0.10 to 0.30</td>
<td>%</td>
<td>Internal Method</td>
</tr>
<tr>
<td>3.20 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Absorption</td>
<td>0.14</td>
<td>%</td>
<td>ASTM D570</td>
</tr>
<tr>
<td>24 hr</td>
<td>0.26</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Equilibrium, 23°C</td>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Mechanical

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tensile Strength (Break)</td>
<td>100</td>
<td>MPa</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Tensile Elongation (Break)</td>
<td>2.0</td>
<td>%</td>
<td>ASTM D638</td>
</tr>
<tr>
<td>Flexural Modulus (50.0 mm Span)</td>
<td>6610</td>
<td>MPa</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>Flexural Strength (Yield)</td>
<td>153</td>
<td>MPa</td>
<td>ASTM D790</td>
</tr>
<tr>
<td>Taber Abrasion Resistance</td>
<td>24.0</td>
<td>mg</td>
<td>ASTM D1044</td>
</tr>
<tr>
<td>1000 Cycles, 1000 g, CS-17 Wheel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impact

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notched Izod Impact (23°C)</td>
<td>110</td>
<td>J/m</td>
<td>ASTM D256</td>
</tr>
<tr>
<td>Unnotched Izod Impact (23°C)</td>
<td>1100</td>
<td>J/m</td>
<td>ASTM D4812</td>
</tr>
<tr>
<td>Gardner Impact (23°C)</td>
<td>5.0</td>
<td>J</td>
<td>ASTM D3029</td>
</tr>
<tr>
<td>Tensile Impact Strength</td>
<td>67.0</td>
<td>kJ/m²</td>
<td>ASTM D1822</td>
</tr>
<tr>
<td>1000 Cycles, 1000 g, CS-17 Wheel</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Hardness

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rockwell Hardness M-Scale</td>
<td>92</td>
<td>ASTM D785</td>
</tr>
<tr>
<td>Rockwell Hardness R-Scale</td>
<td>120</td>
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Thermal

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deflection Temperature Under Load</td>
<td>151</td>
<td>ºC</td>
<td>ASTM D648</td>
</tr>
<tr>
<td>0.45 MPa, Unannealed, 6.40 mm</td>
<td>146</td>
<td>ºC</td>
<td></td>
</tr>
<tr>
<td>1.8 MPa, Unannealed, 6.40 mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vicat Softening Temperature</td>
<td>165</td>
<td>ºC</td>
<td>ASTM D1525</td>
</tr>
<tr>
<td>CLTE - Flow (-40 to 95°C)</td>
<td>2.2E-5</td>
<td>cm²/cm³°C</td>
<td>ASTM E831</td>
</tr>
<tr>
<td>Specific Heat</td>
<td>1130</td>
<td>J/kg/°C</td>
<td>ASTM C351</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>0.22</td>
<td>W/m/K</td>
<td>ASTM C177</td>
</tr>
</tbody>
</table>
## Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTI Elec</td>
<td>120°C</td>
<td>°C</td>
<td>UL 746</td>
</tr>
<tr>
<td>RTI Imp</td>
<td>120°C</td>
<td>°C</td>
<td>UL 746</td>
</tr>
<tr>
<td>RTI Str</td>
<td>130°C</td>
<td>°C</td>
<td>UL 746</td>
</tr>
</tbody>
</table>

## Electrical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume Resistivity</td>
<td>&gt; 1.0E+17</td>
<td>ohm·cm</td>
<td>ASTM D257</td>
</tr>
<tr>
<td>Dielectric Strength (3.20 mm, in Air)</td>
<td>19</td>
<td>kV/mm</td>
<td>ASTM D149</td>
</tr>
<tr>
<td>Dielectric Constant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 Hz</td>
<td>3.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz</td>
<td>3.35</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>3.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dissipation Factor</td>
<td></td>
<td></td>
<td>ASTM D150</td>
</tr>
<tr>
<td>50 Hz</td>
<td>1.1E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60 Hz</td>
<td>1.1E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 MHz</td>
<td>7.0E-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arc Resistance</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comparative Tracking Index (CTI)</td>
<td>PLC 7</td>
<td></td>
<td>UL D495</td>
</tr>
<tr>
<td>High Amp Arc Ignition (HAI)</td>
<td>PLC 5</td>
<td></td>
<td>UL 746</td>
</tr>
<tr>
<td>High Voltage Arc Tracking Rate (HVTR)</td>
<td>PLC 3</td>
<td></td>
<td>UL 746</td>
</tr>
<tr>
<td>Hot-wire Ignition (HWI)</td>
<td>PLC 0</td>
<td></td>
<td>UL 746</td>
</tr>
</tbody>
</table>

## Flammability

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flame Rating</td>
<td></td>
<td>UL 94</td>
</tr>
<tr>
<td>0.750 mm</td>
<td>HB</td>
<td></td>
</tr>
<tr>
<td>1.47 mm</td>
<td>V-1</td>
<td></td>
</tr>
<tr>
<td>3.00 mm</td>
<td>V-0</td>
<td></td>
</tr>
</tbody>
</table>

## Injection

<table>
<thead>
<tr>
<th>Property</th>
<th>Nominal Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drying Temperature</td>
<td>121°C</td>
<td></td>
</tr>
<tr>
<td>Drying Time</td>
<td>3.0 to 4.0 hr</td>
<td></td>
</tr>
<tr>
<td>Drying Time, Maximum</td>
<td>48 hr</td>
<td></td>
</tr>
<tr>
<td>Suggested Max Moisture</td>
<td>0.020%</td>
<td></td>
</tr>
<tr>
<td>Suggested Shot Size</td>
<td>40 to 60 %</td>
<td></td>
</tr>
<tr>
<td>Rear Temperature</td>
<td>293 to 316°C</td>
<td></td>
</tr>
<tr>
<td>Middle Temperature</td>
<td>304 to 327°C</td>
<td></td>
</tr>
<tr>
<td>Front Temperature</td>
<td>316 to 338°C</td>
<td></td>
</tr>
<tr>
<td>Nozzle Temperature</td>
<td>310 to 332°C</td>
<td></td>
</tr>
<tr>
<td>Processing (Melt) Temp</td>
<td>316 to 338°C</td>
<td></td>
</tr>
<tr>
<td>Mold Temperature</td>
<td>82.2 to 116°C</td>
<td></td>
</tr>
<tr>
<td>Back Pressure</td>
<td>0.345 to 0.689 MPa</td>
<td></td>
</tr>
<tr>
<td>Screw Speed</td>
<td>40 to 70 rpm</td>
<td></td>
</tr>
<tr>
<td>Vent Depth</td>
<td>0.025 to 0.076 mm</td>
<td></td>
</tr>
</tbody>
</table>
Notes

1. These links provide you with access to supplier literature. We work hard to keep them up to date; however, you may find the most current literature from the supplier.

2. A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however, this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

3. Typical properties: these are not to be construed as specifications.

4. Type I, 5.0 mm/min

5. 1.3 mm/min

6. Type S

7. Rate B (120°C/h), Loading 2 (50 N)

8. Tungsten Electrode