InvisiSil* IVS9520 Highly Transparent Glob Top

Description

InvisiSil* IVS9520 is two-component, high transparency, low viscosity and thixotropic liquid silicone rubber. This product cures with heat to an elastic rubber and can help provide high heat/UV-light resistance. InvisiSil IVS9520 highly transparent glob top can enable consistent dispensing performance and flow-ability to form a good dome shape for COB (chip on board) LED and SMD LED Package.

Key Features and Typical Benefits

- Self-Dome Lens Formation
- High transparency
- No yellowing
- Excellent high and low temperature resistance
- UV resistance
- Excellent adhesion
- Thixotropic consistency

Typical Physical Properties

<table>
<thead>
<tr>
<th>Typical Physical Properties of the Uncured Rubber</th>
<th>A Component</th>
<th>B Component</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Translucent</td>
<td>Turbid</td>
</tr>
</tbody>
</table>
InvisiSil* IVS9520 Highly Transparent Glob Top

<table>
<thead>
<tr>
<th>Viscosity (23 °C)</th>
<th>Pa.s</th>
<th>9</th>
<th>0.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mix ratio by weight</td>
<td></td>
<td></td>
<td>5.1</td>
</tr>
<tr>
<td>Viscosity after mixing (23 °C)</td>
<td>Pa.s</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>Viscosity after mixing (23 °C)</td>
<td>Pa.s</td>
<td>81</td>
<td></td>
</tr>
<tr>
<td>Pot Life (23 °C)</td>
<td>hr</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

(1); No. 6 spindle, 20rpm  
(2); No. 6 spindle, 2rpm

Typical properties of the cured rubber:  Mixing ration of components A : B = 5 : 1;  
Curing : 3hr. 150°C

Basic Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>JIS K 6249</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Density (23 °C)</td>
<td></td>
<td>1.08</td>
</tr>
<tr>
<td>Shore A hardness</td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Tensile strength</td>
<td></td>
<td>6.8</td>
</tr>
<tr>
<td>Elongation at break</td>
<td></td>
<td>130</td>
</tr>
<tr>
<td>Lap shear strength (Aluminum)</td>
<td></td>
<td>2.5</td>
</tr>
</tbody>
</table>

Optical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transmittance (1mm) %</td>
<td>400nm 96, 700nm 98</td>
</tr>
<tr>
<td>Refractive Index at 25°C : 589nm</td>
<td>( n_D^{25} ) 1.43</td>
</tr>
</tbody>
</table>

Thermal Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CTE linear (40-90°C)</td>
<td>ppm/°C 270</td>
</tr>
</tbody>
</table>

Typical properties are average data and are not to be used as or develop specifications.

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Potential Applications

InvisiSil IVS9520 highly transparent glob top is an excellent candidate to consider for use in the following elastomeric articles:

- LED Lighting  
  COB and lens application  
  Other illumination optics

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• Auto Lighting  COB and lens application
• Electronics  Flash lens of mobile phone camera module

  Sensing lenses

  Other optics

• Solar  Secondary optics for concentrating PVs

**General Considerations for Use**
Each of the components ((A) and (B)) need to be weighed out to the clean container by ratio of 5:1. And then, mix them thoroughly with clean tools to generate thixotropy. Careful mixing (especially on the bottom and the side of the container) is necessary. The mixture needs to be deaerated to remove air entrapped during mixing. Dispense the mixture on the part to cure with heat. Stepwise cure is recommended. Recommended conditions are 80°C for 1hr (1st step) and 150°C for 3hrs (2nd step). All parts should be as clean and dry as possible prior to applications. Materials such as water, sulfur, nitrogen compounds, organic metallic salts, phosphorus compounds, etc. contained in the surface of the substrate can inhibit curing. It is recommended that a preliminary test is performed to determine the compatibility.

**Packaging Types**
InvisiSil IVS9520 highly transparent glob top currently is available in bottle kit (5P of 500g-A and 1P of 500g-B)

**Patent Status**
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