DSQ-400
PhotoSensitive Overcoat for Touch Sensor and Display Applications

Description
The DSQ product suite is designed to improve and enable advanced display manufacturing processes and to provide increased end product performance. DSQ-400 is a one-component solution used to form highly transparent, electrically insulating layers and structures patterned by photo-lithography for touch sensor glass production.

Main applications
- OC1 and OC2 Layers in Advance Display
- Touch sensors
- Bio-Metric devices

Key features of DSQ-400
- Increased transparency
- Excellent lithographic resolution
- Excellent adhesion
- High abrasion resistance and durability
- Heat resistant and non-yellowing
- Can withstand multi-bake processing
- Multiple developer system compatibility

Technical Background
DSQ-400 is a negative tone photo-sensitive coating with optimized refractive index that can provide homogeneous and patterned coated structures. With excellent photo-lithographic resolution, high transmission, hardness and excellent adhesion on glass, black matrix and ITO. The polysiloxane material is non-yellowing making it highly suitable for multi bake processing of touch sensor glass.

How to Apply
Apply using slot or spin coating processes. The material can be adjusted to meet specific customer requirements. The relatively low viscosity of the material can be adjusted to meet the conditions of a fully automated industrial coating line. Both I-line and broadband UV sources can be used for photopatterning. Drying can be achieved through a combination of heat, UV and where necessary, vacuum extraction.
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<table>
<thead>
<tr>
<th>Key properties of DSQ 400</th>
<th>Result</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pencil Hardness</td>
<td>750 g / &gt;5H</td>
<td>ASTM D3363; Elcometer tester Mitsubishi pencils</td>
</tr>
<tr>
<td>Adhesion ITO/Metal/BM</td>
<td>4B-5B</td>
<td>ASTM D3359-09; Elcometer Cross-hatch tester</td>
</tr>
<tr>
<td>Adhesion post environmental (HAST test)</td>
<td>4B-5B</td>
<td>ASTM D3359-09; Elcometer Cross-hatch tester</td>
</tr>
<tr>
<td>UV Yellowing</td>
<td>No yellowing</td>
<td></td>
</tr>
<tr>
<td>Multi bake</td>
<td>No yellowing</td>
<td></td>
</tr>
<tr>
<td>Curing temperature range</td>
<td>120 to 240 normal duration 30 mins</td>
<td></td>
</tr>
<tr>
<td>Chemical resistance</td>
<td>Excellent</td>
<td></td>
</tr>
<tr>
<td>Developer system compatibility</td>
<td>TMAH/KOH/Sodium carbonate</td>
<td>Multiple versions/multiple viscosity variants</td>
</tr>
<tr>
<td>Shrinkage</td>
<td>&lt;4%</td>
<td></td>
</tr>
<tr>
<td>Planarization characteristics</td>
<td>Excellent</td>
<td>ASTM D1003 Cary 5000 normal incident Lambda 380-780</td>
</tr>
<tr>
<td>Transmittance % (550 nm)</td>
<td>T% &gt;2.1% per side</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>10 micron at 1.5 micron film thickness</td>
<td></td>
</tr>
</tbody>
</table>

Typical high resolution structured patterns achieved with DSQ-400 photo patterning on ITO.

Storage and handling
Solution should be stored at -18°C in a well-ventilated place. Keep containers tightly closed and protected from sources of heat and light. Self life is 6 months from the date of manufacture. For working safety, consult product Material Safety Data Sheet.

The information given is based on our best knowledge at the date of issue, but carries no guarantee or acceptance of responsibility. For further data on products toxicological, ecological and safety aspects, please consult the MSDS. It is the responsibility of the user of the product to ensure to satisfaction that the product is suitable for the intended purpose and methods of use. We do not accept responsibility for any harm caused by the use of this information.

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