The industry has a need to develop a new class of pressure-sensitive adhesive technology that can overcome the limitations of conventional pressure-sensitive adhesives.

Dow introduces the very first ultraviolet (UV)-induced adhesion increasable silicone PSAs which have very low initial adhesion and an adhesion increasing property, where increases in adhesion can be initiated when desired by exposure to a trigger such as an ultraviolet light.

**Compositional impacts and properties**

DOWSIL™ UV-Triggered Adhesion-Increasable Silicone Pressure Sensitive Adhesive (developmental) offers the features of both low-to-moderate-adhesion and high-adhesion pressure sensitive adhesives (PSAs) in one product.

<table>
<thead>
<tr>
<th>Traditional low-to-moderate-adhesion PSAs</th>
<th>Traditional high-adhesion PSAs</th>
<th>DOWSIL™ UV-Triggered Adhesion-Increasable Silicone Pressure Sensitive Adhesive (developmental)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Removable adhesives (0.5 g/in to 300 g/in)</td>
<td>Permanent adhesives (300 g/in to 2 kg/in)</td>
<td>Before UV irradiation Removable adhesive (0.5 g/in to 300 g/in) After UV irradiation Permanent adhesive (300 g/in to 2 kg/in)</td>
</tr>
<tr>
<td>• Constant adhesion strength</td>
<td>• Constant adhesion strength</td>
<td>• Easy to peel</td>
</tr>
<tr>
<td>• Excellent wetting</td>
<td>• Poor reworkability</td>
<td>• Temporary bonding</td>
</tr>
<tr>
<td>• Easy to peel</td>
<td>• Difficult to develop higher-level adhesion strength exhibited by regular adhesive</td>
<td>• Reworkable</td>
</tr>
<tr>
<td>• Temporary bonding</td>
<td></td>
<td>• Permanent bonding</td>
</tr>
<tr>
<td>• Reworkable</td>
<td></td>
<td>• High adhesion strength</td>
</tr>
</tbody>
</table>

**Integrated PSA for processing film and permanent bondable silicone PSA applications**

![Diagram showing the process of applying UV PSA with release liners and transparent substrates](Image)
DOWSIL™ UV-Triggered Adhesion-Increasable Silicone Pressure Sensitive Adhesive (developmental) properties

**General properties**
- Tunable adhesion force by application
- Sensitive to UV LED with low UV dosage
- Flexible and soft after UV irradiation
- Applicable to various substrates (glass, PI, PET, etc.)

**Test condition**
- Thickness of PSA Layer = 15 um
- UV Condition = 1 J/cm² by 365nm-LED Lamp
- Test substrate: Glass

The UV-triggered adhesion increasable silicone pressure sensitive adhesives have advantages that it is suitable for a rework process if it is improperly laminated on the target surface, and instant high adhesion can be achieved by UV irradiation for long-term and practical use of the device.

**Learn more**
We offer more than just an industry-leading portfolio of advanced silicone-based materials. As your dedicated innovation leader, we bring process and application experience, a network of technical specialists, a reliable global supply base, and world-class customer service.

To find out how we can support your applications or to learn more about developmental DOWSIL™ UV-Triggered Adhesion-Increasable Silicone Pressure Sensitive Adhesive, contact us or visit dow.com/displays or dow.com/electronics.