What’s New From EPO-TEK® R&D

Room Temperature Curing Electrically Conductive Adhesives

Why are Room Temperature (RT), Electrically Conductive Adhesives (ECAs) important?

- RT/ECAs are ideal for temperature sensitive substrates, allowing for a lower stress cure, and are best for large parts as well as high stress, temperature cycled parts.
- For ease of manufacturing with RT/ECAs, no oven is needed—reducing capital costs and giving greater flexibility for bonding of part sizes.

<table>
<thead>
<tr>
<th>Product</th>
<th>Viscosity* (cPs)</th>
<th>Ti</th>
<th>Cure Time @ 23°C</th>
<th>Pot Life (hrs)</th>
<th>Tg</th>
<th>VR (ohm.cm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>EJ2189</td>
<td>55,000 - 90,000</td>
<td>5.2</td>
<td>3 days</td>
<td>4</td>
<td>&gt;30°C</td>
<td>&lt;0.009</td>
<td>Highest viscosity Ideal for stamping, brushing, or hand application techniques. ITO interconnects, cryogenic environments.</td>
</tr>
<tr>
<td>EJ2189-LV</td>
<td>25,000 - 45,000</td>
<td>3.3</td>
<td>3 days</td>
<td>4</td>
<td>&gt;40°C</td>
<td>&lt;0.009</td>
<td>Medium viscosity Lower viscosity than EJ2189 for alternate application techniques including dispensing.</td>
</tr>
<tr>
<td>91-189-VLV</td>
<td>25,000</td>
<td>2.9</td>
<td>3 days</td>
<td>4</td>
<td>28°C</td>
<td>&lt;0.009</td>
<td>Lower viscosity Slightly lower viscosity and less thixo than EJ2189-LV for enhanced processability.</td>
</tr>
<tr>
<td>EJ2108</td>
<td>12,000</td>
<td>2.4</td>
<td>3 days</td>
<td>1</td>
<td>42°C</td>
<td>0.0004</td>
<td>Lowest viscosity, Flexible Low outgassing and high ThK; aerospace and semiconductor applications.</td>
</tr>
<tr>
<td>EJ2312</td>
<td>59,000</td>
<td>2.6</td>
<td>24 hours</td>
<td>1.5</td>
<td>45°C</td>
<td>0.0005</td>
<td>Longest pot life, 24hrs RT cure Fastest RT cure; microwave/RFD, cell phone, RF/wireless.</td>
</tr>
</tbody>
</table>

* Measured at 1rpm
Medical
- IC die attach of photo-detector arrays assembled on stress sensitive Si and ceramic carriers, for X-ray detector devices.
- Circuits containing Li ion batteries where curing is <60°C.
- Making the electrical bridge of piezo-electric arrays to the corresponding flex PCB in ultrasound imaging devices.

Consumer / Military
- Bonding stainless steel, brass, Sn and Cu wires and conductors in ceramic encased fuses.
- When combined with solvents, a sprayable silver epoxy can be used for metallization of plastics, in consumer goods, mobile phones, automotive mirrors and military optics.

Solar
- Ribbon bonding on low temperature plastics such as ITO/PET curing <100°C, especially for the organic photovoltaic industry.

Electronics / Appliances
- Provides reference conductor electrodes on membrane switch flex circuits.
- Adhesive for acoustical circuits including speaker/microphone components.

Please consult our Application Experts to assist in selecting the most suitable adhesive for your specific technical challenge: techserv@epotek.com