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 &gt;30°C</th>
<th>VR &lt;0.009</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>Lowest viscosity. Slightly lower viscosity and less thixo than EJ2189-LV for enhanced processability.</td>
</tr>
<tr>
<td>104-51</td>
<td>105,000</td>
<td>4.1</td>
<td>&lt;24 hours</td>
<td>0.5</td>
<td>62°C</td>
<td>0.0005</td>
<td>Fastest RT cure, good VR in 8hrs. RFID/smartcard, cell phone, radar. Best choice for field repairs or electrical connections.</td>
</tr>
<tr>
<td>115-31-2</td>
<td>95,000</td>
<td>4.6</td>
<td>24 hours</td>
<td>1.5</td>
<td>67°C</td>
<td>0.002</td>
<td>Longest pot life, 24hrs RT cure. Microwave/RFID, cell phone, RF/wireless.</td>
</tr>
</tbody>
</table>

* Measured at 1rpm
Typical Applications Using RT/ECA Adhesives

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

Disclaimer: Data presented is provided only to be used as a guide. Properties listed are typical, average values, based on tests believed to be accurate. It is recommended that users perform a thorough evaluation for any application based on their specific requirements. Epoxy Technology makes no warranties (expressed or implied) and assumes no responsibility in connection with the use or inability to use these products.