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Permabond A011
Anaerobic Threadlocker
Technical Datasheet

**Features & Benefits**
- Vibration resistant
- Can be dismantled with normal tools
- Provides corrosion protection
- WRAS listed for contact with wholesome (potable) water

**Description**
Permabond® A011 is an anaerobic adhesive designed for locking and sealing threaded or coaxially fitting metal parts where subsequent dismantling is required. Its controlled strength ensures fatigue, vibration and corrosion resistance on large or fragile components whilst still allowing assemblies to be stripped down using normal tools.

**Physical Properties of Uncured Adhesive**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical composition</td>
<td>Acrylic</td>
</tr>
<tr>
<td>Appearance</td>
<td>Red</td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td>500 mPa.s (cP)</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.1</td>
</tr>
<tr>
<td>UV fluorescence</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Typical Curing Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum gap fill</td>
<td>0.12 mm</td>
</tr>
<tr>
<td>Maximum thread size</td>
<td>0.005 in M20 %”</td>
</tr>
<tr>
<td>Time taken to reach handling strength (M10 steel) @23°C</td>
<td>15 minutes*</td>
</tr>
<tr>
<td>Time taken to reach working strength (M10 steel) @23°C</td>
<td>1 hour</td>
</tr>
<tr>
<td>Full strength (M10 steel) @23°C</td>
<td>24 hours</td>
</tr>
</tbody>
</table>

*Handling time at 23°C / 73°F. Copper and its alloys will make the adhesive cure more quickly, while oxidised or passivated surfaces (like stainless steel) will reduce cure speed. To reduce curing time, use Permabond activator A905 or ASC10. Alternatively, increasing the curing temperature will reduce curing time.

**Strength Development**

![Graph showing strength development over time for different metals](image)

*Strength Development Values for different metals:
- Brass
- Mild Steel
- Zinc
- Stainless Steel

* Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond A905, ASC10, or heat can be considered.

**Typical Performance of Cured Adhesive**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Torque strength (M10 steel ISO10964)</td>
<td>Break 4 N·m 35 in.lb Preval 5 N·m 40 in.lb</td>
</tr>
<tr>
<td>Shear strength (steel collar &amp; pin ISO10123)</td>
<td>5 MPa 750 psi</td>
</tr>
<tr>
<td>Coefficient of thermal expansion</td>
<td>90 x 10⁻⁶ mm/mm/°C</td>
</tr>
<tr>
<td>Dielectric strength</td>
<td>11 kV/mm</td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>0.19 W/(m.K)</td>
</tr>
</tbody>
</table>

*These values are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will extend the cure time. To reduce the cure time, the use of Permabond activator A905 or ASC10, or heat can be considered.
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Surface Preparation

Though the anaerobic adhesives will tolerate a slight degree of surface contamination, best results are obtained on clean, dry and grease free surfaces. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended. In general, roughened surfaces (~25μm) give higher bond strengths than polished or ground surfaces. To reduce the curing time, especially on inactive surfaces (such as zinc, aluminium and stainless steel), the use of Permabond A905 or ASC10 can be considered.

Directions for Use

1) Prevent the tip from touching metal surfaces during application.
2) When working with through holes, dispense a bead of material across the contact length of the threads.
3) When working with blind holes, apply several drops down the threads to the bottom of the hole.
4) Assemble and torque the parts as necessary.
5) Replace lid to bottle to avoid contamination of remaining liquid adhesive.

Video Link

Threadlocker directions for use:
https://youtu.be/7144nHED Yi8

Storage & Handling

Storage Temperature

5 to 25°C (41 to 77°F)

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Safety Data Sheet.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

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