Permabond products are relied upon to increase output and improve efficiency when producing medical and assistive devices. A global team of technical, sales, and distribution professionals is available to assist you in selecting the most appropriate standard or custom formulated product for your unique application.

**Medical Disposable Devices**

**Application: Needle Bonding**

Benefits of Permabond UV Curable needle bonding adhesives:
- Single component - No Mix Step Required
- Cure on Demand with low intensity UV light - Efficient Process
- Good Shelf Life - No refrigeration or freezing needed
- Various viscosities available to suit application needs - all are non-stringing for fastest processing

Adhesive used: Permabond 4UV80

**Application: Needle Bonding**

Benefits of Permabond Epoxy needle bonding adhesives:
- Single component - No mix required
- Strong bonds to cannulae
- Various viscosities available to suit application needs - all are non-stringing for fastest processing

Adhesive used: Permabond 4ES70

**Application: Scalpel Bonding**

Permabond 4C20, instant adhesive, quickly bonds scalpels in high speed production.

Benefits of Permabond methyl cyanoacrylate:
- Rapid-curing
- Non-flammable
- 100% solids
- Easy application process
- Good adhesion to metals and plastics
- Single-part, ready to use

Adhesive used: Permabond 4C20 & MM115

**Surgical & Diagnostic Devices**

**Application: Sealing Connections in Oxygen System**

Permabond MH052 is BAM approved to 145 psi (10 bar) /140 °F (60 °C). This anaerobic thread sealant is used to seal threaded metal connections.

Benefits of Permabond MH052 thread sealant:
- BAM approved
- 100% Seal
- No Mix Step Required - Efficient Process
- Good Shelf Life - No Refrigeration or Freezing Needed
- Ambient Cure - Energy Efficient

Adhesive used: Permabond MH052

**Assistive Devices**

**Application: Rubber Bonding and Threadlocking**

Permabond 4C40 bonds the rubber bumpers and tube caps to wheel chairs. Permabond MM11S is used to lock fasteners against vibration loosening.

Benefits of Permabond 4C40 cyanoacrylate adhesive:
- Instant Fixture - No Clamping Necessary
- Ambient Cure - Energy Efficient
- Good Dispensing Viscosity - Easy Process

Adhesive used: Permabond 4C40 & MM11S

Benefits of Permabond MM11S anaerobic threadlocker:
- Ambient Cure - Energy Efficient
- Prevents Loosening of Threaded Fasteners
- Prevents Corrosion & Resists Cleaning Agents

Adhesive used: Permabond MH052
Permabond Cyanoacrylate Adhesives

Solvent Free - High Strength - Instant Curing - Ambient Cure

Permabond cyanoacrylate adhesives are one-part adhesives that cure by reacting with traces of moisture on the surface of the material being bonded. They cure in seconds at ambient temperatures and have been formulated to bond both flexible and rigid surfaces made from a wide range of plastics, rubbers or metals. Permabond cyanoacrylates are available in a range of viscosities to allow easy dispensing in manual or automated processes.

<table>
<thead>
<tr>
<th>Sample Formulations - Other formulations are available or can be created to best suit your requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Appearance</td>
</tr>
<tr>
<td>Viscosity cP/mPa</td>
</tr>
<tr>
<td>Impact Strength f*lb/in(^2) (kJ/m(^2))</td>
</tr>
<tr>
<td>Cytotoxicity</td>
</tr>
<tr>
<td>USP Class VI</td>
</tr>
<tr>
<td>Fixture time in secs.</td>
</tr>
<tr>
<td>Shear Strength psi (N/mm(^2))</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Typical Application</td>
</tr>
</tbody>
</table>

Permabond UV-Light Curable Adhesives

Solvent Free - Cure on Demand - Flexible - Resilient

Permabond UV-light Curables do not dissolve, melt, or weaken the two components. They form strong chemical bonds between the two substrates and provide a high strength alternative to other joining methods.

UV-light Curable adhesives ...are used to obtain increased bond strength and performance, and to reduce or eliminate the risk of stress cracks that can occur with solvent welding. UV-light Curables are also used as an alternative to ultrasonic welding because they tolerate varying gaps, reducing reject rates.

<table>
<thead>
<tr>
<th>Sample Formulations - Other formulations are available or can be created to best suit your requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UV620</td>
</tr>
<tr>
<td>Appearance - Cured</td>
</tr>
<tr>
<td>Cytotoxicity</td>
</tr>
<tr>
<td>Viscosity cP/mPa</td>
</tr>
<tr>
<td>Fluoresces</td>
</tr>
<tr>
<td>Tensile Strength psi (N/mm(^2))</td>
</tr>
<tr>
<td>Dielectric Strength KV/mm</td>
</tr>
<tr>
<td>Dielectric Constant 1MHz@25°C</td>
</tr>
<tr>
<td>Typical Application</td>
</tr>
</tbody>
</table>

www.permabond.com
Permabond structural adhesives include a full line of one and two component epoxies as well as a variety of types of toughened acrylics. Permabond structural adhesives are relied upon for strong and durable bonds to metals, composites and other materials.

### Permabond Anaerobic Adhesives & Sealants

**Corrosion Prevention - Joint Sealing - Tamper Proofing**

Anaerobic adhesives and sealants are single part products that cure in the presence of metal and absence of oxygen to bond and/or seal components. Products are available in varying strengths and viscosities, but all provide inherent corrosion resistance and excellent resistance to chemicals. The full line includes products appropriate for potable water contact, gas contact, and hydraulic systems.

Permabond Threadlockers are available for all threaded metal fasteners, Permabond Pipe Sealants are designed to seal and secure metal pipes and fittings, Permabond Retaining Compounds are available for cylindrical, non-threaded assemblies and Permabond Gasketmakers® replace or augment precut gaskets.

### Sample Formulations - Other formulations are available or can be created to best suit your requirements.

<table>
<thead>
<tr>
<th>Appearance</th>
<th>4ES70</th>
<th>ET510</th>
<th>TA437</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Single component epoxy</td>
<td>Two component epoxy</td>
<td>Toughened acrylic</td>
</tr>
<tr>
<td>Viscosity cP/mPa</td>
<td>20,000</td>
<td>25,000 mixed</td>
<td>120,000</td>
</tr>
<tr>
<td>Typical Application Example</td>
<td>Needle Bonding</td>
<td>Metal Equipment Housings &amp; Furniture</td>
<td>Motor Magnet Bonding</td>
</tr>
</tbody>
</table>

**Permabond Structural Adhesives**

**High Strength Bonding - Replace Welding - Seal Joints**

Permabond structural adhesives include a full line of one and two component epoxies as well as a variety of types of toughened acrylics. Permabond structural adhesives are relied upon for strong and durable bonds to metals, composites and other materials.

### Sample Formulations - Other formulations are available or can be created to best suit your requirements.

<table>
<thead>
<tr>
<th>Description</th>
<th>4ES70</th>
<th>ET510</th>
<th>TA437</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval</td>
<td>NSF/ANSI 61 Certified</td>
<td>WRAS</td>
<td>N/A</td>
</tr>
<tr>
<td>Typical Application Example</td>
<td>Needle Bonding</td>
<td>Metal Equipment Housings &amp; Furniture</td>
<td>Motor Magnet Bonding</td>
</tr>
</tbody>
</table>

**www.permabond.com**
The experienced team of Permabond chemists is on hand to help you with custom formulations and fulfilling your technical data requests.

Permabond’s sales engineers are available to assess your production line and find the best possible turnkey adhesive solution that will result in production efficiencies.

www.permabond.com

- US Helpline - 800-640-7599
- UK - 0800 975 9800
- Asia + 86 21 5773 4913
- Americas +1 732 868 1372
- General Enquiries +44(0)1962 711661
- Deutschland 0800 101 3177
- France 0805 111 388

info.europe@permabond.com
info.americas@permabond.com
info.asia@permabond.com

Permabond Worldwide
Wherever your manufacturing or R&D site may be located, Permabond representatives can be called upon to assist you. We have an extensive network of trained distributors worldwide.

Non-warranty: The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principle of the Chemical Manufacturers Association’s Responsible Care® program.