

# Medical Device Adhesives

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 4E570*

Needle Bonding

## 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 MM115 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 & MM115*

**Benefits of Permabond MM115 anaerobic threadlocker:**

- Ambient Cure - Energy Efficient
- Prevents Loosening of Threaded Fasteners
- Prevents Corrosion & Resists Cleaning Agents



Scalpel Bonding

*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*

**Permabond**<sup>®</sup>  
Engineering Adhesives

## 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.

Sample Formulations - Other formulations are available or can be created to best suit your requirements.									
	4C10	4C20	4C30	4C40	731	820	940	2011	
<b>Appearance</b>	Cured adhesive is clear and colorless.								
<b>Viscosity cP/mPa</b>	40	500	1500	2000	150	100	7	Gel	
<b>Impact Strength ft•lb/in<sup>2</sup> (kJ/m<sup>2</sup>)</b>	4 (8)	4 (8)	4 (8)	4 (8)	9 (19)	5 (11)	5 (11)	4 (8)	
<b>Cytotoxicity</b>	Pass	Pass	Pass	Pass	Not Tested	Pass	Not Tested	Not Tested	
<b>USP Class VI</b>	Pass	Pass	Pass	Pass	Not Tested	Not Tested	Not Tested	Not Tested	
<b>Fixture time in secs.</b>	10	10	10	10	30	10	10	10	
<b>Shear Strength psi (N/mm<sup>2</sup>)</b>	Steel	3,050 (21)	3,050 (21)	3,050 (21)	3,050 (21)	3,950 (27)	3,050 (21)	2,600 (18)	3,200 (22)
	Aluminum	1,000 (7)	1,000 (7)	1,000 (7)	1,000 (7)	2,000 (14)	1,500 (10)	1,000 (7)	1,500 (10)
	Styrene	The strength of the bond exceeds the strength of the plastic.							
	PVC								
	Polycarbonate								
<b>Typical Application</b>	Tube Set Bonding	Bonding Tips To Swabs	Gap Filling For Custom Tube Sets	Rubber Bumper Bonding	Equipment View Panel Bonding	High Temp. Resistant Bonding	Low Odor For Manual Application	Name Plates To Housings	

## 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.

Sample Formulations - Other formulations are available or can be created to best suit your requirements.					
	UV620	4UV80	4UV80 HV	4UV80 HH	4UV82
<b>Appearance - Cured</b>	Clear and colorless				Clear
<b>Cytotoxicity</b>	Not Tested	Pass	4UV80 formula with a bioinert filler		Not Tested
<b>Viscosity cP/mPa</b>	2,500	150	2,300	10,000	250
<b>Fluoresces</b>	No	Yes	Yes	Yes	No
<b>Tensile Strength psi (N/mm<sup>2</sup>)</b>	2300 (16)	1740 (12)	1740 (12)	1740 (12)	2000 (14)
<b>Dielectric Strength KV/mm</b>	12	12	12	12	12
<b>Dielectric Constant 1MHz@25°C</b>	4	4	4	4	4
<b>Typical Application</b>	Glass Bonding	Needle Bonding			Plastic Bonding

# 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.**

	4ES70	ET510	TA437
<b>Appearance</b>	Ivory	Amber	Orange
<b>Description</b>	Single component epoxy	Two component epoxy	Toughened acrylic
<b>Viscosity cP/mPa</b>	20,000	25,000 mixed	120,000
<b>Typical Application Example</b>	Needle Bonding	Metal Equipment Housings & Furniture	Motor Magnet Bonding

# 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.**

	MM115 Pure*	A1042**	HM131	MH052	HM162
<b>Description</b>	Removable Threadlocker		Permanent Threadlocker	Pipe sealant	Retaining Compound
<b>Approvals</b>	NSF/ANSI 61 Certified	WRAS	N/A	BAM tested for oxygen contact to 145 psi / 60°C	N/A
<b>Typical Application</b>	Locking Fasteners; Corrosion Prevention		Tamper Proofing	Sealing Connections	Retaining, Sealing Metal Connections

\*Product available in the Americas and Asia.

\*\* Product available in Europe, Middle East & Australia



# Contact US

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.

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## 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.



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