Permabond®
Engineering Adhesives

MEDICAL DEVICE ADHESIVES



Permabond products are relied upon to increase quality, output, and improve efficiency when producing medical, surgical, in-vitro diagnostic, and assistive devices.

A global team of technical, sales, and distribution professionals are specially trained to ensure they can assist you in selecting the most appropriate standard or custom formulated product for your unique application. Our team looks forward to hearing from you.

IDEAL FOR:

- Assistive Devices
- Diagnostic Equipment
- Medical Disposable Devices
- Medical Diagnostic Supplies
- Prosthetics
- Surgical Instruments
- Wearables & Electronics

...And many more!







Medical devices are diverse. They range in scope from a Q-tip to an X-ray machine. Permabond's range of adhesives for medical devices is equally as diverse and has been carefully selected to demonstrate our capabilities. Some medical device applications require adhesives formulated to pass biocompatibility testing, while others require structural bonding of equipment. Whether you're seeking a unique UV curable adhesive to bond a state-of-the-art oxygenator or a structural bond of an MRI housing, we're here to help!

Permabond manufactures a variety of adhesive technologies trusted in medical device assembly. Following are some examples. Sample products are listed - other formulations are available or can be created to best suit your requirements.



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. They are also available in a range of viscosities to allow for easy dispensing in manual or automated processes.

Product	Viscosity cP/mPa	Typical Applications	Biocompatibility
130UV	200	UV Curable Cyanoacrylate	ISO10993-5
135UV	800	UV Curable Cyanoacrylate	ISO10993-5
2011	Gel	Vertical applications	Not tested
4C10	40	Tube sets	ISO10993-5 & USP Class VI
4C20	500	Swab tips	ISO10993-5 & USP Class VI
4C30	1500	Connectors	ISO10993-5 & USP Class VI
4C40	2000	Rubber bumpers	ISO10993-5 & USP Class VI
731	150	Impact resistant applications	Not tested
820	100	High temperature applications	ISO10993-5
920	80	High temp. resistance with post cure	Not tested
POP	0.6	Polyolefin and Silicone applications	ISO10993-5



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 two substrates and provide a high strength alternative to other joining methods. They 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.

Product	Viscosity cP/mPa	Typical Applications	Biocompatibility
4UV80	150	Needle bonding	ISO10993-5
4UV80HV	7250 2 rpm / 2000 20 rpm	Needle bonding	ISO10993-5
UV630	250	Plastic bonding	ISO10993-5

Structural Adhesives: High strength bonding - Replace welding - Seal joints

Permabond structural adhesives include a full range of one and two component epoxies, structural acrylics, and polyurethane adhesives. These adhesives are relied upon for strong and durable bonds to metals, composites and other materials.



Permabond Product	Viscosity	Typical Applications	Type
ET530	15,000	Metal bonding	2 part epoxy ISO10993-5
ET510	30,000	Metal equipment	Two part room temp cure epoxy
ET5428	Thixotropic Paste	Carbon fiber prosthetics	Two part room temp cure epoxy
PT326	5250	Carbon fiber prosthetics	Two part polyurethane
TA4207	3500	Structural bonding	Two component acrylic
TA437	Thixo	Magnet bonding	Surface activated acrylic
TA4631	21,500	Polyolefin bonding	Two component acrylic



Anaerobic Adhesives:

Corrosion prevention - Joint sealing - Tamper proofing Threadlocking - FIP Form in Place Gaskets - and more...

Anaerobic adhesives and sealants are single part products that cure in the presence of metal and the absence of oxygen to bond or seal components. Products are available in varying strengths and viscosities, but all provide an inherent corrosion resistance and excellent resistance to chemicals. The full range includes products appropriate for potable water contact, gas contact and hydraulic systems. Our threadlockers are available for all threaded metal fasteners. Permabond retaining compounds are available for cylindrical, non-threaded assemblies and our gasketmakers replace precut gaskets.

Permabond Product	Description	Typical Applications	Approvals / Features
A1042	Removable threadlocker	Locking fasteners	WRAS
MH052	Pipe sealant	Sealing connections	BAM*, WRAS, DVGW
MM115 Pure	Removable threadlocker	Locking fasteners	NSF ANSI 61
HH131	Permanent threadlocker	Locking fasteners	High strength & temp. resistance
MH196	Form in place gasket	Sealing	Fast setting, high temp. resist
HM162	Retaining compound	Retaining	Fast setting, high temp. resist

* Approved for use with gaseous oxygen up to 10 bar (145 psi) and 60°C (140°F).

Adhesive Technology Suitability by Substrate

Material	Cyanoacrylate	UV Curable	Epoxy	Acrylic (TA46XX)
ABS	Excellent	Excellent		Good
Acetal	Prime with POP			
Acrylic	Excellent	Excellent		Excellent
Aluminum	Excellent	Excellent	Excellent	Good
CAP	Good	Good		Good
CER	Good	Good		Good
COC	Prime with POP			Good
COP	Prime with POP			Good
COPE	Good			
CRS	Excellent	Excellent	Excellent	Excellent
Copper	Good	Good		Good
EVA	Prime with POP	Good		
FR-4 epoxy	Excellent	Excellent		Good
Glass		Excellent	Excellent	
HDPE	Prime with POP			Good
LDPE	Prime with POP			Good
Nickel alloys	Good	Good	Excellent	Good
Nylon 12	Good			Excellent (TA4550)
PA	Good			Fair
PC	Excellent	Excellent		Excellent
PCTG	Fair	Fair		Fair
PE	Prime with POP			Excellent
PEBA	Excellent			Good
PEI	Good	Good		Fair
PET	Fair	Excellent*		Fair
PETG	Fair	Excellent*		Fair
PI	Excellent	Excellent		Good
PMMA	Excellent	Excellent		Excellent
PP	Prime with POP			Excellent
PS	Excellent	Good		Good
PSU	Good	Good		Good
PTFE	Prime with POP			Good
PU	Good			Fair
PVC	Excellent	Good		Excellent
SAN	Excellent	Excellent		Excellent
SEBS	Good	Good		
Silicone	Prime with POP			
Stainless Steel	Excellent	Excellent	Excellent	Good
TPU	Prime with POP			
UHMW	Prime with POP			Good

Anaerobic adhesives and sealants are for use on metal only.
*Specific grades

Disposable Medical Devices

Face masks, filters, scalpels, needles, catheters and blood collection devices are just some of the items that benefit from using UV light-curable, cyanoacrylate and epoxy adhesives in the manufacturing & assembly process. They are ideal for streamlining manufacturing, increasing production and improving quality.



Application: Needle Bonding

Benefits of Permabond 4UV80 UV Curable needle bonding adhesive:

- Single component - no mixing required
- Cure on demand with UV light
- Long shelf life
- Various viscosities available to suit application
- Non-stringing for easy application
- ISO10993 cytotoxicity





Application: Various

Benefits of Permabond 130UV UV Curable Cyanoacrylate Adhesive:

- Single component - No mix required
- Strong bonds to plastics and metals
- Dual UV and moisture cure to cure in shadowed areas
- ISO10993 cytotoxicity

Application: Scalpel Bonding

Permabond 4C20, instant adhesive, quickly bonds scalpels in high-speed production. Benefits of Permabond Cyanoacrylate:

- Rapid-curing
- Non-flammable
- 100% solids
- Easy application process
- Good adhesion to metals & plastics
- Single-part, ready to use
- ISO10993 cytotoxicity





Assistive Devices

From bonding foam and rubber padding, retaining cylindrical joints and structurally joining components to bonding, sealing, and coating electronics, Permabond's extensive range supports design creativity in assistive device applications. Permabond 4C40 bonds the rubber bumpers and tube caps to wheel chairs. Permabond A1042 & MM115 are used to lock fasteners against vibration loosening.

Application: Threadlocking

Benefits of Permabond A1042 or MM115 anaerobic threadlocker:

- Prevents loosening of threaded fasteners
- Ambient cure - energy efficient
- Prevents corrosion & resists cleaning agents







Application: Rubber Bonding

Benefits of Permabond 4C40 cyanoacrylate adhesive:

- Instant fixture - no clamping necessary
- Ambient cure - energy efficient
- Good dispensing viscosity - easy process
- ISO10993 cytotoxicity

Respirators, Ventilators & Breathing Equipment

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.





Application: Sealing Connections in Oxygen System

Benefits of Permabond MH052 thread sealant:

- Easy to apply
- Approved for contact with oxygen
- 100% Seal to burst rating of pipe
- Can be taken apart with normal tools
- Single-part room temperature cure
- Helps lubricate threaded pipe joints allowing easier assembly

Wearable Devices

There are several electronics and bonding applications within wearable devices.

Application: Potting Electronics

Benefits of Permabond UV630

- ISO10993-5 cytotoxicity
- Seals and pots
- Excellent aesthetics









Prosthetics

Cyanoacrylates are ideal for bonding foam in prosthetics. Polyurethane builds layers in molds for ideal fit.

Application: Foam Bonding

Benefits of Permabond 731

- Good adhesion
- Thin bond line to eliminate hard edges

Application: Socket Fit Molds

Benefits of Permabond PT326

- Fast gel time allows multiple adjustments in one visit



Surgical Instruments

RFID tags are bonded to surgical instruments with Permabond ET538.

Application: RFID tag bonding

Benefits of Permabond ET538

- Adhesion to stainless steel
- Withstands steam sterilization



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Diagnostic Supplies and Equipment

Permabond UV645 adhesive bonds and seal assay cassettes, cartridges, and trays. Permabond MT382 pots sensitive electronic components.



Application: Potting electronics within diagnostic equipment

Benefits of Permabond MT382

- Self leveling
- Full cure at room temperature
- Adheres to a wide variety of substrates

Application: Bonding Cassettes for automated molecular analysis

Benefits of Permabond UV645

- Excellent adhesion to plastics
- Thixotropic - easy to dispense
- Fast cure



Permabond adhesives and sealants are available worldwide through authorized distributors.

Contact us for technical supportor a distributor in your area!



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Authorized distributor stamp:

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