

Permabond®

Adhesives for Electronics

ISO 9001 Certified
"Our Science ... Your Success"

Permabond offers a wide range of different adhesive technologies for bonding electronic components. Whether you require a rapid cure in seconds or several hours to assemble parts, Permabond can help you find a bonding solution.

Permabond Adhesive Typical Applications

Typical applications where Permabond adhesives are used include:

- Wire tacking
- Bonding heat sinks
- Bonding of surface mount devices to PCBs
- Potting and encapsulation of electronic components
- Component rigidizing
- Conformal coating to protect electronic components / PCBs
- Applications within batteries and battery packs
- Strain protection for leads/plugs
- Toroid bonding
- Coil winding
- Magnet bonding & electric motor applications
- Bonding electronics housings and enclosures
- Bonding touch screens and keypads
- Sensor bonding / potting
- Electrical transformers

...and many more!



Ideal for bonding:

ABS

Acetal

Acrylic

Aluminum

Carbon Fiber

Copper

Ferrite

FRP/GRP/Gelcoat

Glass

Laminate

Magnet

PCB

Phenolic

Polycarbonate

Polyethylene*

Polypropylene*

PVC

Silicon

Steel

Tungsten

Zinc

+Many more materials

*Special grades only on untreated

Permabond Adhesives for Electronics

Here is a small selection of our most popular adhesive grades suitable for use in a range of electronic component bonding applications. If you don't see exactly what you require, please contact our technical advisors with information about your application, and your particular requirements and we will make a recommendation. The Permabond team provides support through the design phase, sample trials, and production line integration. Whether you require technical support, custom formulations, or small batch production, please contact us.

Technical Information	825	920	947	CSA-NF	ES566	ES578
Typical application	SMD Bonding, wire tacking	SMD Bonding, wire tacking, toroid bonding	Wire tacking, bonding housings	Wire tacking, bonding housings	Bonding components, component rigidizing	Bonding heat sinks
Features	Single part, moisture cure cyanoacrylate adhesive with high temperature resistance	Single part, moisture cure cyanoacrylate adhesive with high temperature resistance	Single part, moisture cure cyanoacrylate adhesive. Low odor/ non-bloom	Cyanoacrylate activator. Non-flammable, low residue. Ideal for speeding up cure and for curing excess adhesive	Heat cure single part epoxy, which cures at temperatures <100°C to help protect temperature-sensitive electronics	Heat cure single part epoxy with good thermal conductivity properties
Color	Clear, colorless	Clear, colorless	Clear, colorless	Clear / colorless	Grey	Black
Viscosity (mPa.s = cP)	100-150	70-90	900-1,500	1	Thixotropic paste	Thixotropic paste
Maximum gap fill (mm) in	(0.15) 0.006	(0.15) 0.006	(0.25) 0.01	-	(2.0) 0.08	(5.0) 0.2
Handling time (steel)	10-15 sec.	15-20 sec.	10-15 sec.	-	90°C (175°F): 75 min. 100°C (210°F): 40 min. 120°C (250°F): 25 min. 150°C (300°F): 10 min.	130° C (266°F): 75 min. 150° C (300°F): 60 min. 170° C (338°F): 25 min.
Full strength (cured at 23°C)	24 hours	24 hours	24 hours	-	-	-
Shear strength Steel (MPa) psi	(15-20) 2175-2900	(19-23) 2800-3300	(16-20) 2300-2900	-	(5-10) 750-1500 cured at 90°C (18-22) 2600-3200 cured at >100°C	(27-41) 4000-6000
Service temperature range (°C)°F	(-55 to +200) -65 to +390	(-55 to +250) -65 to +482*	(-55 to +80) -65 to +180	-	(-40 to +180) -40 to +356	(-40 to +180) -40 to +356
Dielectric strength kV/mm	25	-	25	-	-	40-45
Thermal conductivity W/(m.K)	0.1	0.1	0.1	-	0.38	1.0
Availability	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide

* Product cured at 150°C for 2 hours, following a 4 hour room temperature cure.

Application: Coil Winding

Loudspeaker coil winding runs through an epoxy "bath" and is coiled before the epoxy sets.

- Excellent optical clarity
- Low, penetrative viscosity for good coverage

Adhesive used: Permabond ET530

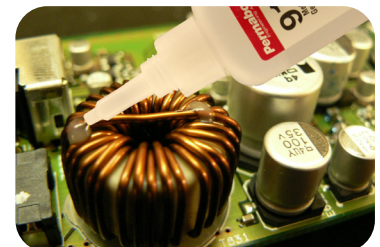


Application: Bonding Toroids

Adhesive is applied to bond copper wire to the ferrite core of a toroid.

- Improved durability
- Improved resistance against high levels of vibration & temperature

Adhesive used: Permabond 920

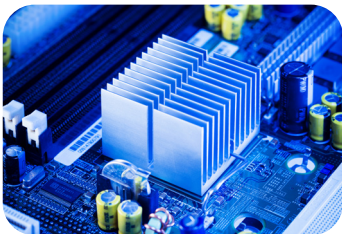


Please refer to the TDS (Technical Data Sheet) for full, up-to-date technical information.



ET530	MT382	MT3836	PT326	TA4392	TA4590	UV681	UV683
Potting and coating Coating copper wire coils	Potting and encapsulation	Bonding heat sinks	Potting, bonding components	Magnet bonding Bonding heat sinks	Magnet bonding	Tack-free clear coating - ideal for conformal coating	Tack-free doming viscosity
Low viscosity 2-part epoxy. Cures at room temperature	Low viscosity, self-leveling, soft, slightly flexible modified 2-part epoxy	Modified flexible 2-part epoxy with good thermal conductivity properties	2-Part polyurethane adhesive with high peel and impact strength	Structural acrylic resin + initiator 41 Rapid cure and good thermal conductivity	Structural acrylic with non-acidic formulation for sensitive electronics. Use with initiator 44	Single-part, low-viscosity, UV-curing resin	Single-part, high viscosity, UV curing resin
Clear, colorless	Charcoal black	Light Grey	Grey	White	Blue	Clear, colorless	Clear, colorless
550	Mixed: 13,000-30,000	Mixed: Paste	Mixed: 3500-7000	200,000	20rpm: 20,000 2.5rpm: 90,000	80-120	1000-1600
-	(0.5) 0.02	(5.0) 0.2	(5.0) 0.2	(0.5) 0.02	(0.5) 0.02	-	-
8-12 hrs	105-120 min.	2-3 hrs	60-90 min.	10-30 sec.	30-60 sec.	Normally seconds - depends on UV lamp intensity, output spectra, and distance from substrate	
72 hrs	72 hrs	>72 hrs	4-5 days	24 hrs	24 hrs		
(10-12) 1450-1700	(4-7) 600-1000	Stainless Steel (2-2.5) 290-360	(12-20) 1700-2900	(16-20) 2300-2900	(20-25) 2900-3600	-	-
(-40 to +100) -40 to +215	(-40 to +120) -40 to +250	(-40 to +120) -40 to +250	(-40 to +120) -40 to +250	(-55 to +165) -65 to +329	(-55 to +165) -65 to +329	(-55 to +120) -65 to +250	(-55 to +120) -65 to +250
18	-	19	-	25-30	30-50	-	-
0.31	-	1.05	-	1.111	0.1	-	-
Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide

Application: Bonding SMDs



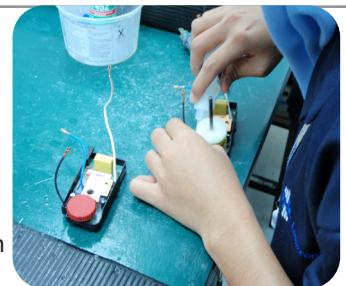
PermaBond adhesive is used to secure components that may later need to go through a solder reflow process.

- High wet strength
- Good thermal conductivity
- Good electrical resistance

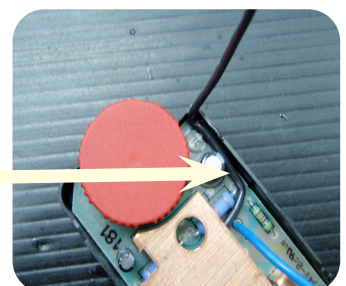
Adhesive used: PermaBond ES578

Application: Wire Tacking

PermaBond cyanoacrylates are for the instant tacking of wires inside electronic devices. Tacking wires keeps circuit boards neat and tidy and easier to handle in later stages of the assembly process. Excess adhesive can be cured instantly with PermaBond CSA-NF to minimize visible residue.



Wire on power tool PCB tacked in place to help ease of component assembly



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Adhesives for • Design • Manufacturing • Assembly • Maintenance • Repair & Overhaul

Permabond's history of developing and manufacturing engineering adhesives spans seven decades and three continents. Today, Permabond Engineering Adhesives Ltd (Europe & Asia) and Permabond LLC (Americas) provide technological solutions to engineers all over the world, with offices and facilities in America, Asia and Europe.



- **Technical** – Our chemists and technicians are available to provide application assistance, custom formulation, in-house prototype testing, joint product development programs and much more.

- **Training** – Permabond's knowledgeable sales group will provide your staff with the information they need to maximize the efficiencies, cost savings, and safety benefits Permabond products generate.

- **Sales** – From preliminary project appraisals and product needs assessments through to process reliability analysis, Permabond's knowledgeable sales group will support you from product concept through to production.

This brochure contains information on our most popular products, if you don't see exactly what you need, or would like assistance in selecting the best product for your application, please contact us:

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Distributor Stamp

The information given and the recommendations made herein are based on our experience and are believed to be accurate. No guarantee as to, or responsibility for, their accuracy can be given or accepted, however, and no statement herein is to be treated as a representation or warranty. In every case we urge and recommend that purchasers, before using any product, make their own tests to determine, to their own satisfaction, its suitability for their particular purposes under their own operating conditions. Always refer to current product technical datasheet for most recent and accurate technical information.