Permabond®
Engineering Adhesives

ADHESIVES FOR ELECTRONICS

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.

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.

TYPICAL APPLICATIONS

- 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

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

*special grades only on untreated

...and many more!

Permabond® Engineering Adhesives

Adhesives for Electronics

Technical Information	825	920	947	CSA-NF	ES566	ES578	ET530	MT382	MT3826	PT326	TA4392	TA4590	UV681	UV683
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	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
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. Nonflammable, 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	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
Color	Clear, colorless	Clear, colorless	Clear, colorless	Clear / colorless	Grey	Black	Clear, colorless	Charcoal black	Light Grey	Grey	White	Blue	Clear, colorless	Clear, colorless
Viscosity (mPa.s = cP)	100-150	70-90	900-1500	1	Thixotropic paste	Thixotropic paste	550	Mixed: 13000-30 000	Mixed: Paste	Mixed: 3500-7000	200000	20rpm: 20000 2.5rpm: 90000	80-120	1000-1600
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	-	(0.5) 0.02	(5.0) 0.2	(5.0) 0.2	(0.5) 0.02	(0.5) 0.02	-	-
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.	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	
Full strength (cured at 23°C)	24 hours	24 hours	24 hours	-			72 hrs	72 hrs	>72 hrs	4-5 days	24 hrs	24 hrs		
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	(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	-	-
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	(-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
Dielectric strength kV/mm	25		25	-	-	40-45	18	-	19	-	25-30	30-50	-	-
Thermal conductivity W/ (m.K)	0.1	0.1	0.1	-	0.38	1.0	0.31	-	1.05	-	1.111	0.1	-	-
Availability	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide	Worldwide

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

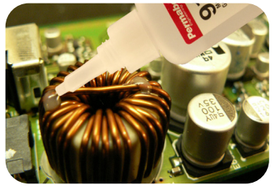
Adhesive used: Permabond ET530

Application: Bonding Toroids

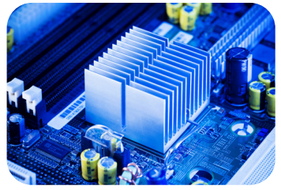
Adhesive is applied to bond copper wire to the ferrite core of a toroid.

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

Adhesive used: Permabond 920



Application: Bonding SMDs



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

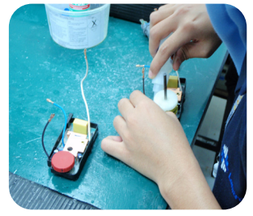
- High wet strength
- Good thermal conductivity
- Good electrical resistance

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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Permabond adhesives and sealants are available worldwide through authorized distributors.

Contact us for technical support or a distributor in your area!

PERMABOND.COM

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