

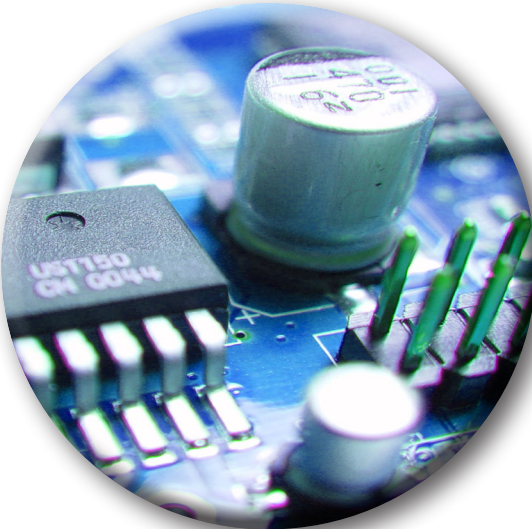
Permabond®

Thermally Conductive Adhesives

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

Permabond offers a range of adhesives which have been formulated to offer maximum thermal conductivity properties, as well as some which meet UL94 V-0 fire retardancy requirements. Ideal for bonding metals, magnets, ferrites, composites & most plastic materials, these adhesives allow heat to be quickly dissipated away from components - perfect for many industrial applications, including:

- Bonding heatsinks
- Potting and encapsulating electronic parts
- Bonding SMDs
- Heat exchangers
- Electrical transformers, coils & windings
- Bonding battery packs & housings



Permabond® Thermal range Features & Benefits

- Good thermal conductivity up to 1.1 W/(m.K)
- Electrical insulation
- High strength (up to 41 MPa)
- High temperature resistance (up to 200°C)
- Fire retardant, UL94 V-0 compliant
- Non-corrosive product available
- Soft, flexible product available
- Room temperature cure & heat cure grades available
- Electrical resistance prevents short circuits
- Resistance to chemicals, water and humidity
- Resistance to thermal shock, impact and vibration
- Component weight reduction
(compared to mechanical assembly)
- Can withstand solder reflow, e-coating & paint bake processes
- Can withstand differential expansion & contraction of dissimilar materials

Ideal for bonding:

ABS

Acrylic

Aluminium

Carbon Fibre

Copper

Ferrite

FRP/GRP/Gelcoat

LCD

Magnet

PCB

Phenolic

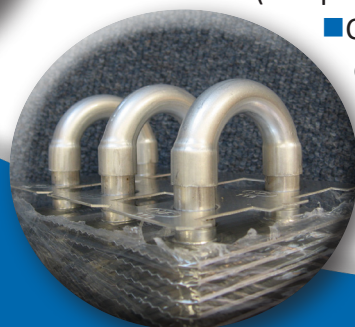
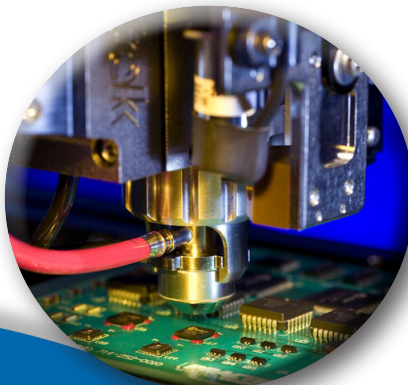
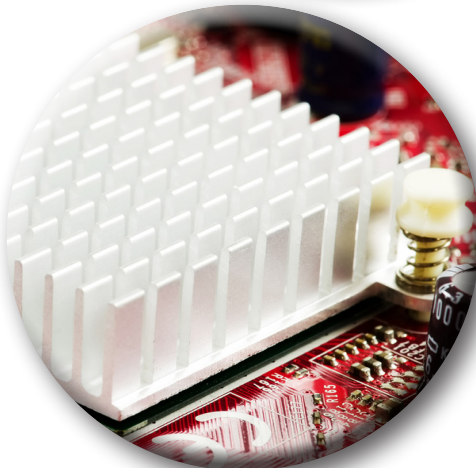
Polycarbonate

Steel

Tungston

Zinc

+ many more materials



Permabond®
Engineering Adhesives

Thermally Conductive Product Data

The following technical data for Permabond thermal adhesives is a guideline and does not constitute a specification. For full technical information, please refer to the technical data sheet, available at www.permabond.com. Our experienced worldwide trained distributor network means no matter where in the world you are located, Permabond representatives can be called upon to assist you with your bespoke applications.

Product Data

For full technical information, please refer to the product data sheet.

| Product | ET5441 2-part epoxy | ES578 epoxy | ES5507 epoxy | TA4392 + Initiator 41 | MT3836 |
|--|---|------------------------------------|--|--|---|
| Chemistry | 2-part epoxy | Single part epoxy | Single part epoxy | 2-part acrylic | 2-part hybrid |
| Cure Mechanism | Room temperature cure | Heat cure | Heat cure | Room temperature cure | Room temperature cure |
| Mix Ratio | 2:1 mix ratio | N/A | N/A | No mix | 2:1 mix ratio |
| Key Feature | Good thermal conductivity, excellent electrical insulation. | Very high strength Meets UL94 V-0. | Very high strength, Good resistance to chemicals & vibrations. | Non-corrosive formulation, meets UL94 V-0. | Soft and flexible, meets UL94 V-0. |
| Appearance | Dark Grey | Black | Metallic Grey | White | Light Grey |
| Viscosity @ 25°C mPa.s | Mixed: Thixotropic | 600,000 - 800,000 | 250,000 - 300,000 | Thixotropic | Mixed: Paste |
| Maximum Gap Fill | 2 mm | 5 mm | 3 mm | 0.5 mm | 5 mm |
| Cure Speed (@23°C unless otherwise stated) | Pot life: 150 mins Working strength: 8 hrs | 60 minutes @150°C (full strength) | 45 minutes @150°C (full strength) | Handling time: 10-30 secs Working strength: 3-5 mins Full cure: 24 hrs | Pot life: 5-30 mins Handling time: 2-3 hrs Full cure: >72 hrs |
| Shear Strength (steel) | 20 MPa | 27-41 MPa | 27-30 MPa | 16-20 MPa | 2-2.5 MPa |
| Thermal Conductivity* | 1.1 W/(m.K) | 1.0 W/(m.K) | 0.9-1.0 W/(m.K) | 1.1 W/(m.K) | 1.05 W/(m.K) |
| Service Temperature | -40 to +200°C | -40 to +180°C | -40 to +180°C | -55 to +165°C | -40 to +120°C |
| Packaging | 6 x 400ml cartridges with nozzles | 10 x 320ml cartridges | 10 x 320ml cartridges | 10 x 50ml bottles (initiator sold separately) | 6 x 400ml cartridges with nozzles |
| | Bulk on request | Bulk on request | Bulk on request | 10 x 300ml bottles (initiator sold separately) | Bulk on request |
| Storage | 5-25°C | 2-7°C | 2-7°C | 5-25°C | 5-25°C |



* Bespoke development of products with higher thermal conductivity available, subject to minimum order quantities.

NB. Products may be subject to MOQ and special lab approval required for samples.

Authorised distributor stamp:

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klebetechnik



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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.