

## ADHESIVES FOR DEFENCE INDUSTRIES

**Permabond offers a wide range of high-performance industrial adhesives for use within the defence industry around the world. This includes a wide variety of applications and markets such as aerospace, transport, munitions, marine, telecommunications and many more.**

Permabond's MIL Spec (Military Specified) range of adhesives is ideal for general maintenance and repair of army vehicles, aircraft, warships, and submarines. These products are suited to tasks such as sealing nuts and bolts to prevent vibration loosening, fixing bearings, and creating form-in-place gaskets of any shape - perfect for quick, on-the-go repairs. Permabond also specialises in structural adhesives with special features - such as low-outgassing, high temperature resistance, high impact resistance, lightweight/low density, fire retardance, and the ability to bond difficult substrate materials.



### TYPICAL APPLICATIONS:

- ▶ Bonding Kevlar® materials for body armour and helmets
- ▶ Composite bonding for impact resistant panels on lightweight vehicles
- ▶ Bonding composite rocket launcher tubes
- ▶ Sealing bullets to casing for munitions
- ▶ Fast bonding of wiring looms to aircraft fuselage
- ▶ Bonding rubber flooring / grip treads inside tanks and other vehicles
- ▶ Drones - bonding lightweight composites and also nylon 12
- ▶ Sealing oxygen supply pipework for fighter jets

### IDEAL FOR BONDING:

- Carbon Fibre/ Graphite Composite
- Kevlar® aramid fibre material
- Nylon- including glass filled nylon 6, nylon 6, 6 and 12
- Glass, Perspex, and Plexiglas - clear adhesives available
- Polypropylene, polyethylene, PTFE and other hard-to-bond plastics
- Metals - including stainless steel, zinc, aluminium etc...
- Rubber - including EPDM, silicone, nitrile etc.

\*Kevlar® is a registered trademark of E. I. du Pont de Nemours and Company.



Many Permabond products have been designed to offer fast cure and rapid strength development to minimise down-time. Additionally, Permabond has developed special surface adhesion technologies which work well on substrates where surface preparation is difficult or impractical in the field.

Product	Type	Typical Application	Features & Benefits	Viscosity	Sheer Strength (Steel)	Temperature Range (°C)°F
A1062	Anaerobic Retainer	Sealing bullets into casing.	Anaerobic/UV curable single component resin for wicking between bullet and casing. The seal can be fixtured with UV light around the edge	10-20 mPa.s (cP)	7 MPa 1000 psi	(-55 to +150) -65 to +302
MH052	Anaerobic Threadsealant	Sealing oxygen pipelines for fighter jets.	Oxygen approved anaerobic pipe sealant.	2rpm: 65,000 mPa.s (cP) 20rpm: 25,000 mPa.s (cP)	10 MPa 1450 psi	(-55 to +150) -65 to +302
712	Cyanoacrylate	Bonding rubber gaskets, seals, and valve seatings for military grade equipment.	Excellent water and heat resistance used to bond a variety of materials.	100 mPa.s (cP)	19-24 N/mm <sup>2</sup> (2755-3480 psi)	(-55 to +120) -65 to +248
737	Cyanoacrylate	Magnet/ferrite bonding.	Single part, moisture-cure cyanoacrylate adhesive high impact resistance, flexibility, and durability under thermal shock and vibration.	2000-4000 mPa.s (cP)	19-23 N/mm <sup>2</sup> (2800-3300psi)	(-55 to +120) -65 to +248
825	Cyanoacrylate	Bonding sensors, connectors, and electronic components.	Exceptional adhesion to metal, and plastics with high-temperature resistance and thermal aging durability.	100-150 mPa.s (cP)	15-20 N/mm <sup>2</sup> (2175-2900 psi)	(-55 to +200) -65 to +392
910	Cyanoacrylate	Wing spar bonding (holding in place during riveting process).	Aerospace company approved single part adhesive that is easy to use, fast curing, and eliminates the need for awkward clamping during riveting.	70-90 mPa.s (cP)	23-29 N/mm <sup>2</sup> (3300-4200psi)	(-55 to +90) -65 to +194
130UV	Light Cure Cyanoacrylate (Dual Cure)	Bonding and sealing electronic components in military-grade PCBs and sensor assemblies.	Cures instantly under UV light for fast, tack-free bonds and cures via moisture in shadowed areas.	200 mPa.s (cP)	12-17 N/mm <sup>2</sup> (1740 psi – 2465 psi)	(-55 to +120) -65 to +248
ET5422	Two-part epoxy	Composite bonding of panels, aircraft / vehicle / ship interior components.	Fully toughened two part epoxy, giving high shear and peel strength as well as excellent impact and vibration resistance.	A: 20rpm: 105,000mPa.s (cP) Thixotropic B:20rpm: 100,000mPa.s (cP) Thixotropic	30-38 N/mm <sup>2</sup> (4350-5510psi)	(-40 to +120) -40 to +248
ET5424	Two-part epoxy	Aerospace structural bonding for ultimate performance in high temperature applications.	Ultra-high strength performance with excellent thermal resistance.	A: 245,000 mPa.s (cP Thixotropic)	20-25 N/mm <sup>2</sup> (2900-3626psi)	(-40 to +230) -40 to +446
ET5441	Two-part epoxy	Bonding heat sinks and structural components in high-power military electronics.	Low outgassing, designed to pass UL94 HB. Thermally conductive.	A: 250,000 mPa.s (cP) Thixotropic B:200,000 mPa.s (cP) Thixotropic	20-25 N/mm <sup>2</sup> (2900-3625 psi)	(-40 to +200) -40 to +392
TA4246	Toughened Surface-Activated Acrylic Adhesive	Bonding wiring harnesses inside fuselage. Structural bonding of interiors of tanks, planes, ships and submarines.	Aerospace company approved no-mix structural acrylic. Fast strength development, easy to apply. High structural strength performance.	20rpm: 15,000 – 35,000 mPa.s (cP)	33-35 N/mm <sup>2</sup> (4800-5100 psi)	(-40 to +120) -40 to +248
TA4550	Toughened Acrylic Adhesive	Bonding Kevlar® for body armour, helmets. Bonding nylon drone components.	High strength structural acrylic adhesive for bonding to nylon and a wide variety of materials.	A:100,000 mPa.s (cP) Thixotropic B:100,000 mPa.s (cP) Thixotropic	27-30 N/mm <sup>2</sup> (3916-4351 psi)	(-55 to +100) -65 to +212
TA4611	Toughened Acrylic Adhesive	Bonding polyethylene and polypropylene components in rugged drone housings, field radios, and portable defense electronics.	High impact strength and chemical resistant two-part adhesive for low surface energy plastics without need for primers.	A: 20,000-30,000 mPa.s (cP) B:10,000-15,000 mPa.s (cP)	11 N/mm <sup>2</sup> (1595 psi)	(-55 to +100) -65 to +212

## ADHESIVES FOR DEFENCE INDUSTRIES

Permabond adhesives and sealants are available  
worldwide through authorised distributors.

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

*Application: Military Aircraft  
Breathing systems*

**Permabond MH052** is used to seal valves on  
the cockpit oxygen supply of a military aircraft,  
such as the Harrier GR 5/10.

- ▶ Withstands thermal shock and differential expansion and contraction stresses.
- ▶ Easy to apply, reliable, and passes oxygen tests.



*Application: Bonding Body Armour  
and Helmets.*

**Permabond TA4550** is applied to nylon and  
composite components in the assembly of body  
armor and helmets.

- ▶ Improved durability and high strength.
- ▶ Improved impact-resistant bonds.



Scan for Military Specifications  
and Standards

PERMABOND.COM

*Authorised distributor stamp:*



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