

Features & Benefits

- 💧 Prevents vibration loosening
- 💧 Controlled off-torque
- 💧 Full cure at room temperature
- 💧 Can be applied post assembly
- 💧 Ideal for sealing weld porosity
- 💧 Superior environmental resistance
- 💧 Environmentally friendly – 100% solids

Description

PERMABOND® HL126 Threadlocker is a water thin product for locking pre-assembled parts through wicking action. **PERMABOND® HL126** Threadlocker prevents vibration loosening. Because of the low viscosity an additional use is the sealing of weld porosity; the uncured material penetrates the micro pores before curing. **PERMABOND® HL126** Threadlocker cures reliably and fast on most metallic surfaces.

MIL-S-22473E **Grade AA**
MIL-S-46163A **Type III Grade R**

Each lot of HL126 is tested to the lot requirements of these specifications.

ASTM D5363 **AN 0261 Group 02 Class 6 Grade 1**
ASTM D5363 **AN 0111 Group 01 Class 1 Grade 1**

Each lot of HL126 is tested to the general requirements defined in paragraphs 5.1.1 and 5.1.2 and the detail requirements defined in section 5.2

Physical Properties of Uncured Adhesive

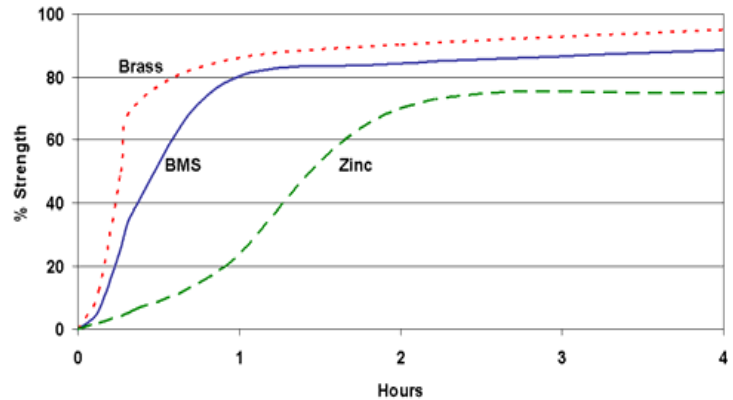
Chemical Composition	Methacrylate esters
Appearance	Green
Viscosity @ 25°C	10-30 mPa.s (cP)
Specific Gravity	1.09

Typical Curing Properties

Maximum gap fill	0.12 mm 0.005 in
Maximum thread size	M10 ½"
Handling time* (steel)	8 minutes
Full strength	24 hours

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

Strength Development

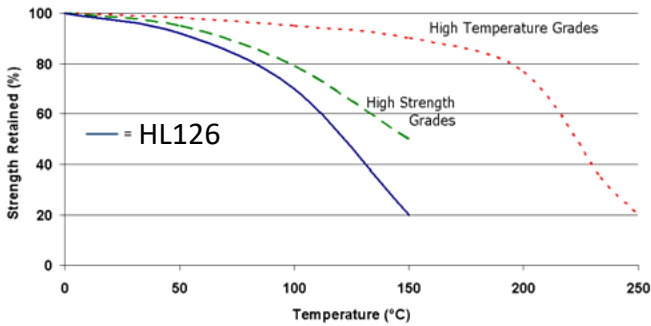


*Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond® A905, ASC10, or heat can be considered.

Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO10964)	Break 14 N·m 125 in.lb Prevail 34 N·m 300 in.lb
Shear strength (steel collar & pin ISO10123)	10 MPa 1500 psi
Coefficient of thermal expansion	90 x 10 ⁻⁶ in/in/°C
Thermal Conductivity	0.19 W/mK
Dielectric strength	11 kV/mm
Electrical Resistance	10 ¹⁷ Ω

Temperature Resistance



"Hot strength" shear strength tests performed on mild steel. 24hr cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

HL126 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed. The minimum temperature the cured adhesive can be exposed to is -55°C (-65°F) depending on the materials being bonded.

Chemical Resistance

340 Hour immersion	Temperature, °C (°F)	% Strength retained
Water	75 (168)	100
Butyl alcohol	75 (168)	100
Toluene	75 (168)	99
Motor oil	75 (168)	99
Hydrocarbon test fluid	75 (168)	100
JP4-Jet fuel	75 (168)	93
JP5-Jet fuel	75 (168)	100
Ethylene glycol	75 (168)	99

This product is not recommended for use in contact with oxygen, oxygen rich systems and other strong oxidizing materials. This product may adversely affect some thermoplastics and users must check compatibility of the product with such substrates before using.

Surface Preparation

Though anaerobic adhesives and sealants will tolerate a slight degree of surface contamination, best results are obtained on clean, dry and grease free surfaces. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended.

In general, roughened surfaces (~25µm) give higher bond strengths than polished or ground surfaces.

To reduce the curing time, especially on inactive surfaces (such as zinc, aluminium and stainless steel), the use of Permabond® A905 or ASC10 can be considered.

Directions for Use for Threadlocking

- 1) Prevent the tip from touching metal surfaces during application.
- 2) When working with through holes, dispense a bead of material across the contact length of the threads.
- 3) When working with blind holes, apply several drops down the threads to the bottom of the hole.
- 4) Assemble and torque the parts as necessary.
- 5) Replace lid to bottle to avoid contamination of remaining liquid adhesive.

Directions for Use for Threadlocking Post Assembly

- 1) Assemble and torque the parts as necessary.
- 2) Prevent the tip from touching metal surfaces during application.
- 3) Dispense HL126 over fastener. The HL126 will wick into the joint to lock set screws against vibration loosening or to act as a tamper-proof agent.

Directions for Use for Weld Sealing

- 1) Expose the weld. Remove dirt, rust, scale, and/or paint from the weld area to expose the metal surface.
- 2) Bleed the system of all water and pressure to allow the HL126 to wick into the porosities.
- 3) Heat the area to 50°C – 100°C (120°F-300°F). Using heat will expand and activate the metal as well as evaporate any water. HEAT SHOULD NOT BE USED WITH A CHEMICAL SYSTEM. Consult the MSDS for information on the flash point, flammability and heat stability of the chemicals involved.
- 4) Apply HL126 to the warm welds with a brush, swab or clean rag. Wet the area thoroughly with the product so that it can wick into all the open areas within the metal and form a new seal.
- 5) If the porosity is large or there are several pin-holes in the same area, several applications may be necessary to maximize the amount of HL126 that wicks into the voids to assure a permanent seal.
- 6) Within five to ten minutes the product should cure with the capability of handling a low pressure. Within an hour it should be able to handle 200psi to 500psi of pressure. Recharging of a sprinkler system can be done after that period.
- 7) After an hour wipe away any surface residue.

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Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene. Full information can be obtained from the Material Safety Data Sheet.	

Other Products Available

Anaerobics

- Toughened
- Gas & water approved
- High temperature resistance
- Flexible

Cyanoacrylates

- Low bloom / low odour
- Flexible
- High temperature resistance

Epoxies

- Fast cure
- Toughened
- Flexible grades

Toughened Acrylics

- Rapid cure
- Low odour
- Pre-mixed
- Gap filling

UV Light Cured

- Glass / plastic bonding
- Optically clear
- Non-yellowing
- Tack-free coatings

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