PERMABOND® HM129

Anaerobic Threadlocker

Technical Datasheet

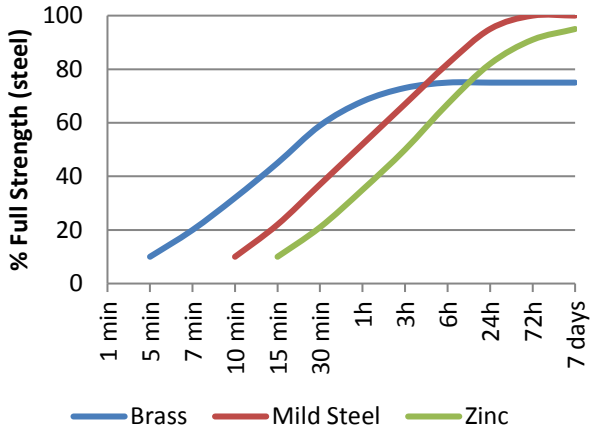
Features & Benefits

- Oil tolerant*
- Vibration resistant
- Lubricates threads for easier assembly
- Provides corrosion protection
- Solvent free

Permabond® HM129 is a high strength medium viscosity anaerobic threadlocker and sealant. This material cures in the absence of air between tight fitting metal parts. Cure is fast and reliable on steel, cadmium, zinc and other plated fasteners. It is used for locking and sealing bolts, nuts and screws that require permanent assembly. When cured, the material prevents loosening and leakage.

**Permabond still recommends carrying out normal surface preparation to ensure consistent results. However, HM129 can provide superior performance compared with other sealing methods where there is presence of oil on surfaces.*

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.*

Physical Properties of Uncured Adhesive

Chemical composition	Acrylic
Appearance	Red
Viscosity @ 25°C	500 mPa.s *(cP)*
Specific Gravity	1.1
UV fluorescence	Yes

Typical Curing Properties

Maximum gap fill Maximum thread size	0.15 mm *0.006 in* M20 *¾"*
Time taken to reach handling strength (M10 steel) @23°C	10 minutes*
Time taken to reach working strength (M10 steel) @23°C	1-3 hours
Full strength (M10 steel) @23°C	24 hours

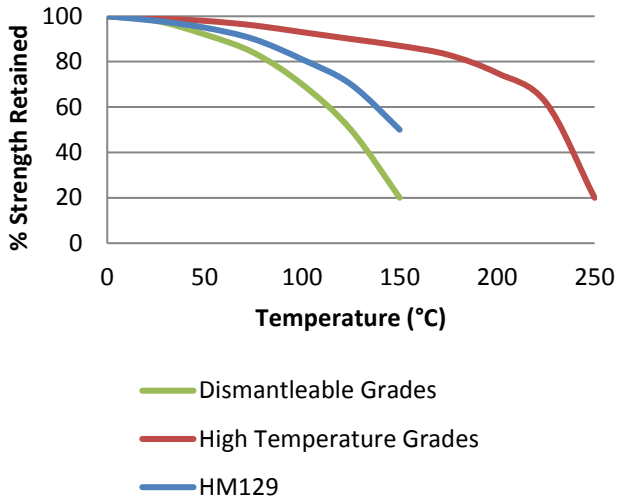
**Handling time at 23°C / 73°F. Copper and its alloys will make the adhesive cure more quickly, while oxidised or passivated surfaces (like stainless steel) will reduce cure speed. To reduce curing time, use Permabond activator A905 or ASC10. Alternatively, increasing the curing temperature will reduce curing time.*

Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO10964)	Break 33 N·m *290 in.lb* Prevail 58 N·m *520 in.lb*
Shear strength (steel collar & pin ISO10123)	17 MPa *2500 psi*
Coefficient of thermal expansion	90 x 10^{-6} mm/mm/°C
Dielectric strength	11 kV/mm
Thermal conductivity	0.19 W/(m.K)

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Hot Strength



"Hot strength" Breakaway strength on M10 Zinc plated bolts according to ISO 10964. Cured at 23°C for 24 hours then conditioned for 30 minutes at testing temperature.

HM129 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

Immersion (1000 hours)	Temperature (°C)	Strength Retention (%)
Engine Oil	125	75
Water/Glycol	75	85
Leaded Petrol	23	100
Unleaded Petrol	23	95
Diesel	23	100
Brake Fluid	23	95
99% IMS	23	95
Acetone	23	95

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 the anaerobic adhesives 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

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.

Video Link

Threadlocker directions for use:
https://youtu.be/7144nHEDYI8

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 Safety Data Sheet.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

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