

### Features & Benefits

- Prevents vibration loosening
- Controlled off-torque
- Full cure at room temperature
- Lubricates threads for easier assembly
- Provides corrosion protections
- Non-drip thixotropic
- Environmentally friendly – 100% solids

### Description

Permabond® MM115 Threadlocker is an excellent general purpose threadlocker and sealant. It is used for locking metal bolts, nuts and screws that may require disassembly for service and maintenance. Its medium strength allows disassembly with ordinary tools. Cure is fast and reliable on steel, cadmium, zinc and other plated fasteners. Major use areas include machinery and equipment manufacturing.

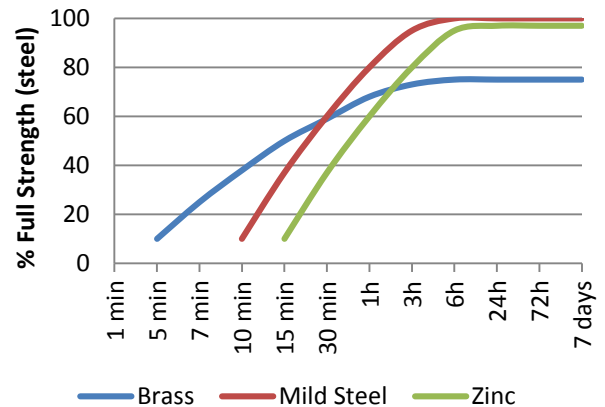
MIL-S-46163A Type II Grade N  
MIL-S-22473E Grade CVV

Each lot of MM115 is tested to the lot requirements of these specifications.

ASTM D5363 AN 0143 Group 01 Class 4 Grade 3  
ASTM D5363 AN 0321 Group 03 Class 2 Grade 1

Each lot of MM115 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

### Strength Development



\*Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidized 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	Methacrylate esters
Appearance	Blue
Viscosity @ 25°C	20 rpm: 1,300 mPa.s (cP) Thixotropic
Specific gravity	1.1
UV fluorescence	Yes

### Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO10964)	Break 16 N·m <b>140 in.lb</b> Prevail 7 N·m <b>60 in.lb</b>
Compressive shear strength (steel collar & pin ISO10123)	10 MPa <b>1450 psi</b>
Coefficient of thermal expansion	90 x 10 <sup>-6</sup> mm/mm/°C
Dielectric strength	11 kV/mm
Thermal conductivity	0.19 W/(m.K)

### Typical Curing Properties

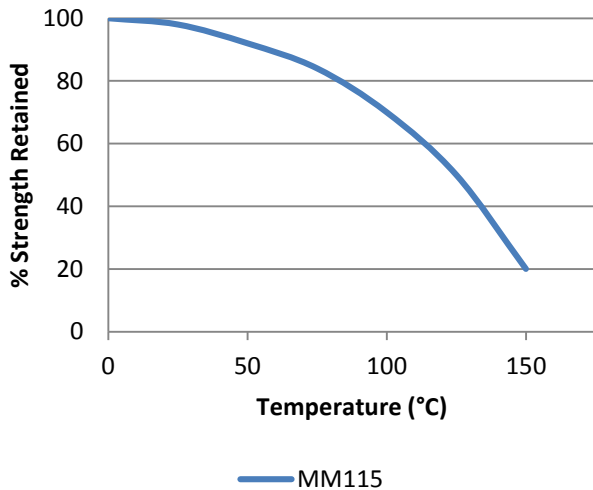
Maximum gap fill	0.15 mm <b>0.006 in</b>
Time taken to reach handling strength (M10 steel) @23°C	10 minutes*
Full strength (M10 steel) @23°C	24 hours

\*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.

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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.*

MM115 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 (340 hours)	Temperature °C (°F)	Strength Retention (%)
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 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, aluminum 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.

## Storage & Handling

Storage Temperature	5 to 25°C (41 to 77°F)
Shelf Life Stored in original unopened containers	12 months
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.	

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