

Features & Benefits

- 💧 Excellent chemical resistance
- 💧 Does not shred or dry out
- 💧 Pressure seal to burst rating of pipe
- 💧 No loose particles to clog valves
- 💧 Approved for use with gaseous oxygen

Description

PERMABOND MH052 is ideal for the sealing of threaded joints. It is approved for use with gas for working pressure up to 26 bar and also for gaseous oxygen up to 10 bar and 60°C. MH052 seals against gas, water, LPG, hydrocarbons, oils and other chemicals. Unlike PTFE tape or hemp, Permabond MH052 will not shred or dry out, so it will provide a durable seal, helping to extend the life of the components.

Physical Properties of Uncured Adhesive

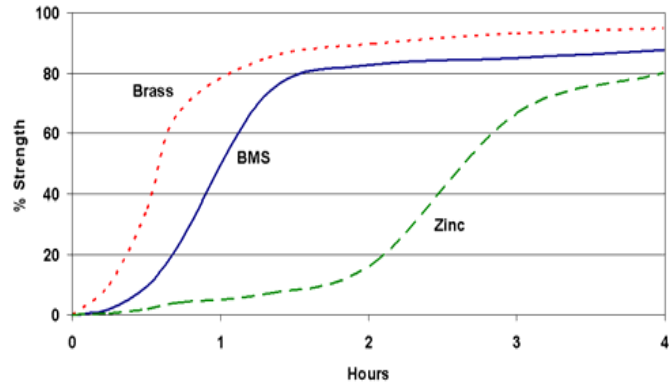
| | |
|----------------------|-------------------------------|
| Chemical composition | Acrylic |
| Appearance | Yellow |
| Viscosity @ 25°C | 50,000 mPa.s (cP) Thixotropic |
| Density | 1.1 |
| UV fluorescence | Yes |

Typical Curing Properties

| | |
|---------------------------|-----------------------|
| Maximum gap fill | 0.5 mm 0.02 in |
| Maximum thread size | M56 2 in |
| Handling strength (steel) | 15 minutes |
| Working strength | 1-3 hours |
| Full strength | 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.*

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.

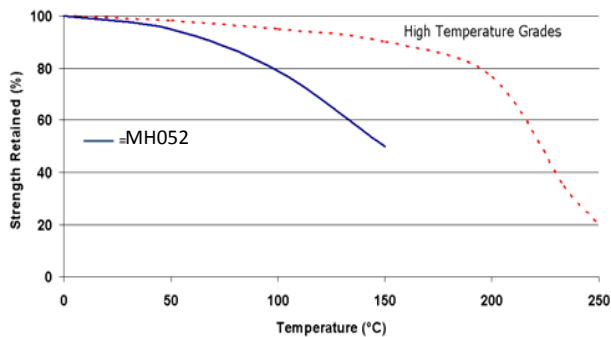
Typical Performance of Cured Adhesive

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|--|--|
| Torque strength (M10 Zn plated ISO10964) | Break 20 Nm 180 in.lb Prevail 11 Nm 100 in.lb |
| Shear strength (steel collar & pin) | 10 MPa 1400 psi |
| Coefficient of thermal expansion | 90 x 10 ⁻⁶ mm/mm/°C |
| Dielectric strength | 11 mV/mm |
| Thermal conductivity | 0.19 W/(m.K) |

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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.

MH052 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

This product is not recommended for use in contact with steam, strong oxidizing materials and polar solvents although will withstand a solvent wash without any bond strength deterioration.

| Immersion (1,000 Hours) | Temperature (°C) | Strength Retention (%) |
|-------------------------|------------------|------------------------|
| Engine Oil | 125 | 100 |
| Water/Glycol | 85 | 90 |
| Unleaded Petrol | 23 | 100 |
| Brake Fluid | 23 | 95 |
| 99% IMS | 23 | 95 |
| Acetone | 23 | 65 |

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) Apply a continuous bead circumferentially 1-2 threads from the leading edge.
- 2) Ensure sufficient is applied to give a complete seal.
- 3) For taper/parallel threads ensure adhesive is positioned where the threads will engage fully. Gaps, and therefore cure times, may be greater than expected with this joint configuration.
- 4) Tighten with normal tools.

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. | |

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