

# Technical data sheet



Product: A1044

Manufacturer: PERMABOND ENGINEERING ADHESIVES

Product group: KLEBSTOFF

Article group: ANAEROB

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## PERMABOND A1044

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## Features & Benefits

- Instant low pressure seal
- Does not shred or dry out
- Excellent chemical resistance
- Good high pressure resistance
- WRAS listed for contact with wholesome (potable) water

## Description

**Permabond® A1044** is a rapid curing sealant designed to lock and seal metal pipe connections, offering very good resistance to even the most aggressive chemicals. Permabond A1044 can be used to seal against most gases and liquids and can provide an instant pressure seal, minimising down time and speeding up production processes. Unlike PTFE tape or hemp, Permabond A1044 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

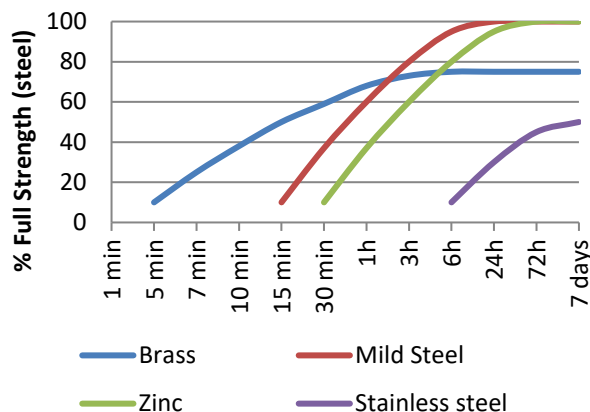
|                      |  |
|----------------------|--|
| Chemical composition | Acrylic  |
| Appearance           | White  |
| Viscosity @ 25°C     | 2rpm: 70,000 mPa.s (cP)<br>20rpm: 9,000 mPa.s (cP) |
| Specific Gravity     | 1.1  |
| UV fluorescence      | Yes  |

## Typical Curing Properties

|   |                       |
|---|-----------------------|
| Maximum gap fill  | 0.5 mm <b>0.02 in</b> |
| Maximum thread size                                     | M56 <b>2 in</b>       |
| Time taken to reach handling strength (M10 steel) @23°C | 15 minutes*           |
| Time taken to reach working strength (M10 steel) @23°C  | 1 hour                |
| 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.

## 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.

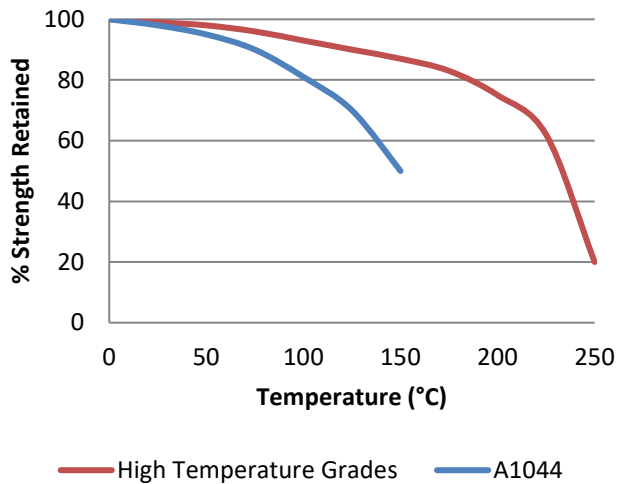
## Typical Performance of Cured Adhesive

|  |  |
|--|--|
| Torque strength (M10 steel ISO10964)         | Break 20 N·m <b>180 in.lb</b><br>Prevail 10 N·m <b>90 in.lb</b>  |
| Torque strength (M10 zinc ISO10964)          | Break 24 N·m <b>210 in.lb</b><br>Prevail 12 N·m <b>105 in.lb</b> |
| Shear strength (steel collar & pin ISO10123) | 17 MPa <b>2500 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)   |

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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.

A1044 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              | 100                    |
| Water/Glycol           | 75               | 93                     |
| Leaded Petrol          | 23               | 100                    |
| Unleaded Petrol        | 23               | 100                    |
| Diesel                 | 23               | 98                     |
| Brake Fluid            | 23               | 95                     |
| 99% IMS                | 23               | 95                     |
| Acetone                | 23               | 60                     |

*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

Best results are obtained on bare metal surfaces. Remove paint, hemp fibres, PTFE tape or any other surface contamination from the bond area that could inhibit the cure. The use of a suitable solvent-based cleaner (such as acetone or isopropanol) is recommended to remove oil, grease, and other contaminants. Allow the solvent to evaporate before applying the adhesive.

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 around the circumference of the male thread (normally 1-2 threads back from the leading edge).
- 2) For taper/parallel threads ensure adhesive is positioned where the threads will engage fully. Gaps and cure times may be greater than expected with this joint configuration.
- 3) Ensure sufficient adhesive is applied to give a complete seal.
- 4) Tighten the components with suitable tools. Do not adjust. Allow the product to fully cure before using the part (lower temperatures or large gaps will extend the cure time).

NB: Adhesive outside of a closed joint (i.e., excess material) will remain uncured due to air contact. Adhesive inside the joint will cure solid. Ensure the adhesive viscosity is suitable for your thread size.

## Video Link

Threadsealant directions for use:  
<https://youtu.be/6Db9pLS7WCA>



## 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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