PERMABOND® A1024

Anaerobic Retainer

Technical Datasheet

Features & Benefits

- UV fluorescent under UV black light
- Can be applied post-assembly
- Excellent chemical resistance
- Ideal for munitions applications – NATO approved. Patented technology.

Description

Permabond® A1024 is designed specifically for bullet-sealing applications where the adhesive can be post applied to wick down between bullet and cartridge casing. Its low surface tension and low viscosity allows joints to be sealed rapidly, even when the adhesive is applied after the joint has been assembled.

Physical Properties of Uncured Adhesive

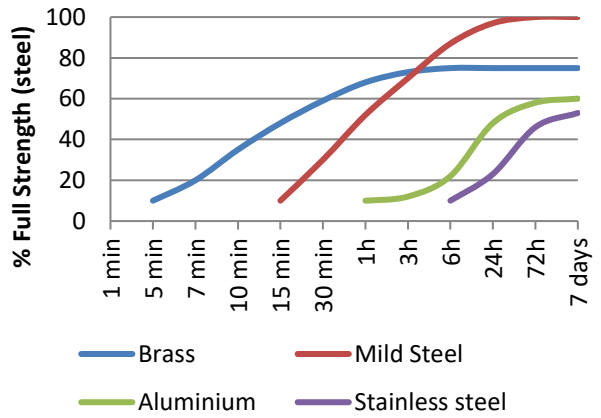
Chemical composition	Acrylic
Appearance	Yellow
Viscosity @ 25°C	<10 mPa.s *(cP)*
Specific Gravity	1.0
UV fluorescence	Yes

Typical Curing Properties

Maximum gap fill Maximum thread size	0.05 mm *0.001 in* M10 *½"*
Time taken to reach handling strength @23°C	Steel: <20 minutes* Copper: <5 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 (1/2" brass ISO10964)	>50 N·m *>450 in.lb*
Shear strength (steel collar & pin ISO10123)	21 MPa *3000 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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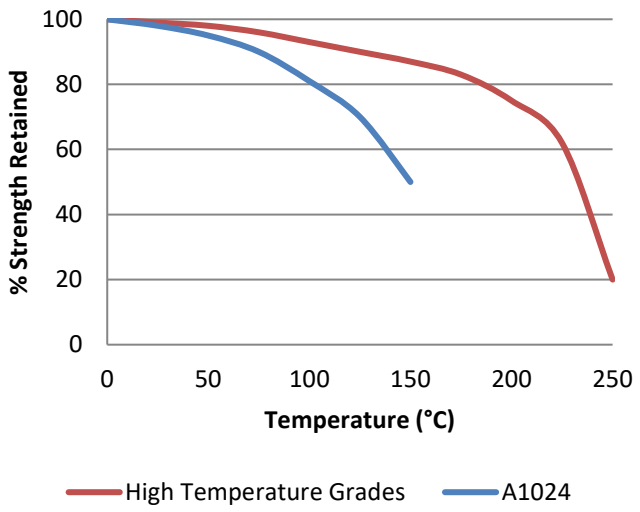
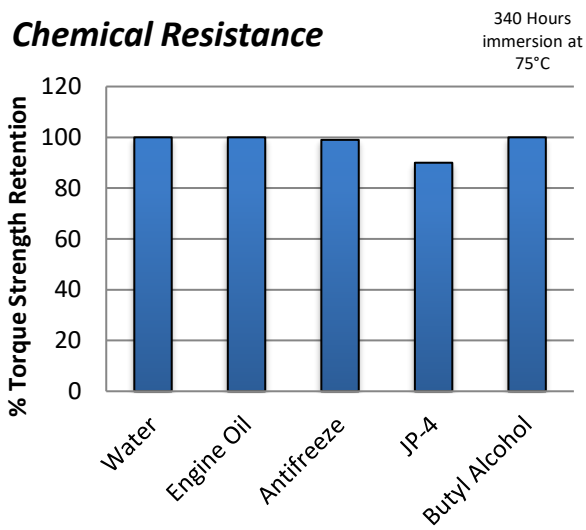
Hot Strength



"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.

A1024 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 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.

Directions for Use

1) Cartridge case is presented in vertical position with open end at top.
2) The projectile (bullet) is then pressed about 2mm into the cartridge case to establish concentricity between case and bullet.
3) The bullet is then pressed to its full engagement.
4) Permabond A1024 is then accurately dispensed to the edge of the case where it penetrates around the joint in less than 10 seconds. (NB. Typical quantities of adhesive are 0.002 – 0.005ml depending on bullet size, so precision dispensing is required). The dispensing equipment employs a valve fitted with a hypodermic needle which actually touches the joint; the air actuated valve controls the adhesive quantity dispensed. The time from pressing home the bullet to adhesive application is importation, as the air pressure inside the case must be allowed to equalize before the adhesive starts to cure. Failure to allow for this could result in leak paths developing in the joint.
5) A low-powered inspection UV 375nm lamp can be used to check presence of adhesive.
6) After inspection, bullets can be packed into boxes.

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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