PERMABOND® A1046
Anaerobic Retainer
Technical Datasheet

Features & Benefits

- Toughened
- Rapid cure
- Ideal when bonding dissimilar materials
- Improved fatigue life

Approvals

DVGW Approval for Gas / KTW-BWGL Drinking Water Compliant

Description

PERMABOND® A1046 is a rapid curing adhesive designed to provide permanent locking and sealing of metal parts such as bearings, gears, pulleys and threaded components. It exhibits high strength and excellent durability, even under the most arduous conditions. Permabond® A1046 helps joints resist vibration, fatigue and fretting corrosion, which allows machining tolerances to be relaxed and mechanical locking devices to be eliminated. Permabond® A1046 will help reduce processing costs.

Typical Physical Properties of Uncured Adhesive

Chemical composition	Acrylic
Appearance	Green
Viscosity @ 25°C	2rpm: 9,000 mPa.s ***(cP)*** 20rpm: 2,500 mPa.s ***(cP)***
Specific Gravity	1.1
UV fluorescence	Yes

Typical Curing Properties

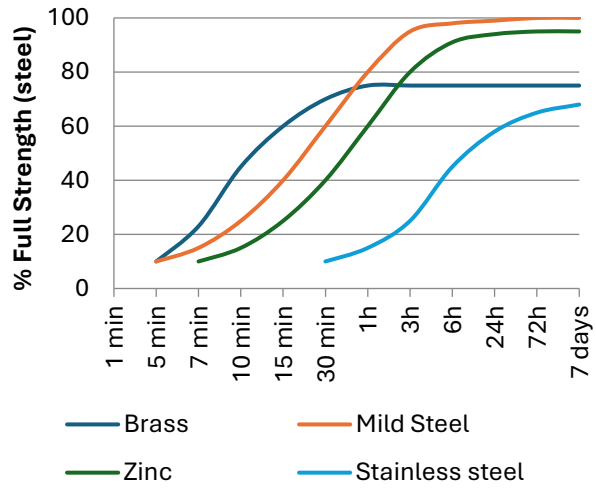
Maximum gap fill	0.25 mm ***0.01 in***
Maximum thread size	M30 ***¾ in***
Time taken to reach handling strength (M10 steel) @23°C*	5-10 minutes
Time taken to reach working strength (M10 steel) @23°C	30 minutes
Full strength (M10 steel) @23°C	24-hours

**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.*

Typical Performance of Cured Adhesive

Torque strength (M10 steel ISO 10964)	Break 30 N·m ***270 in.lb*** Prevail 50 N·m ***450 in.lb***
Shear strength (Steel collar & pin ISO 10123)	25 MPa ***3600 psi***
Coefficient of thermal expansion	90 x 10^{-6} mm/mm/°C
Dielectric strength	11 kV/mm
Thermal conductivity	0.19 W/(m.K)

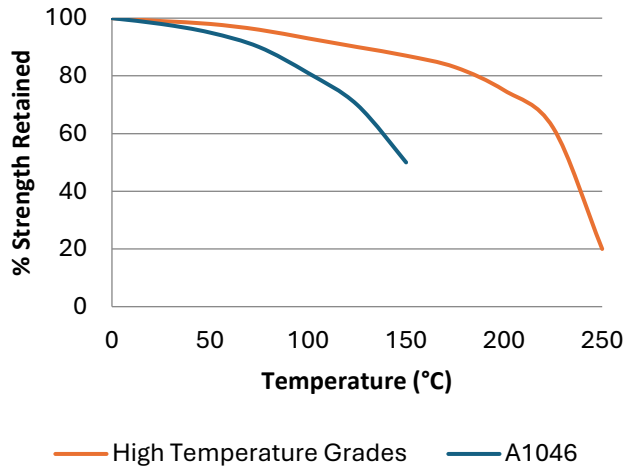
Strength Development



**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.*

FOR PROFESSIONAL OR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN

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.*

Permabond® A1046 can withstand higher temperatures for brief periods (such as for paint-baking and wave soldering processes) provided the joint is not unduly stressed.

Chemical Resistance

Immersion (1000 hours)	Temperature (°C)	Strength Retention (%)
Engine Oil	125	235
Water/Glycol	75	100
Leaded Petrol	23	175
Unleaded Petrol	23	175
Diesel	23	160
Brake Fluid	23	180
99% IMS	23	175
Acetone	23	160

Except under the conditions stated on the description section, 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) Apply a circumferential bead; preferentially to the female component. Assemble with a twisting action.
2) For larger components use thixotropic products to prevent run off.
3) Take care to ensure adhesive does not enter ball races or other mechanisms.

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

Retaining compound directions for use:
https://youtu.be/MUODE5ZfrZ8

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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