

Features & Benefits

- 💧 Toughened
- 💧 Very high strength
- 💧 Ideal for bonding or sealing dissimilar materials
- 💧 Improved fatigue life

Approvals

KIWA Gastec Approval QA (EN751-1 compliant) /
KIWA Hydrogen Approval (KE214) /
KTW-BWGL Drinking Water Compliant /
WRAS Drinking Water Approval

Description

PERMABOND® F201HV is an anaerobic adhesive which has been developed to give excellent resistance to peel and impact forces. It is capable of resisting the thermal stresses that may be generated when bonding dissimilar metals where differential thermal expansion and contraction could be an issue. F201HV is certified for use with hydrogen, making it ideal for sealing hydrogen pipelines, valves, couplings and other coaxial and threaded fixtures.

Typical Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate ester
Appearance	Brown
Viscosity @ 25°C	2rpm: 35,000 mPa.s (cP) 20rpm: 5,000 mPa.s (cP)
Specific Gravity	1.0
UV fluorescence	No

Typical Curing Properties

Maximum gap fill	0.3 mm 0.012 in
Maximum thread size	M50 1.5 in
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.

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No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

Typical Performance of Cured Adhesive

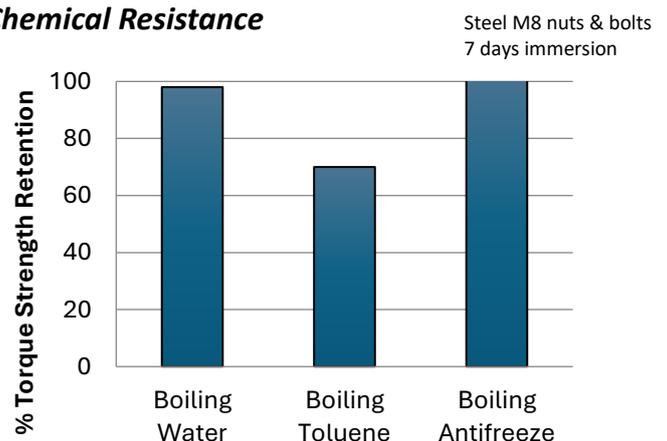
Torque strength (M10 zinc ISO 10964)	Break 28 N·m 250 in.lb Prevail 30 N·m 260 in.lb
Shear strength (Steel collar & pin ISO 10123)	30 MPa 4400 psi
Coefficient of thermal expansion	90 x 10 ⁻⁶ mm/mm/°C
Dielectric strength	11 kV/mm

Strength Development

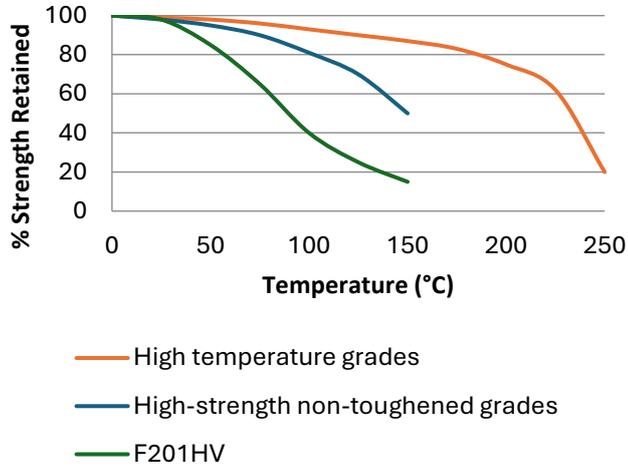


*Cure times are typical at 23°C. Copper and its alloys will follow the faster cure while oxidised or passivated surfaces like stainless steel will tend towards the slower curve. Lower temperatures or large gaps will tend to extend the cure time. To reduce the cure time the use of Permabond® A905, ASC10, or heat can be considered.

Chemical Resistance



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® F201HV can withstand higher temperatures for brief periods (such as for paint-baking and wave soldering processes) provided the joint is not unduly stressed.

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.

Video Link

Threadsealant directions for use:

<https://youtu.be/6Db9pLS7WCA>



Directions for Use

- 1) Using a generous quantity of adhesive, apply a continuous bead around the circumference of the male thread (normally 2-3 threads back from the leading edge) to maximise contact.
- 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 or may result in an incomplete cure).

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.

Time to cure for use with wholesome (potable) water:

- Brass, copper and cast iron: 24 hours @21.1°C
- Stainless steel and aluminium: 7 days @21.1°C

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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