

Features & Benefits

- Adhesion to a wide variety of substrates
- Fast cure at room temperature
- High shear and peel strength
- Good impact strength
- Good chemical resistance

Description

PERMABOND® TA4810 is a 2-part, 1:1 toughened methacrylate adhesive designed for bonding thermoplastics, thermosets, metals and composites. TA4810 has excellent adhesion to as received metal surfaces, forming high strength bonds without surface preparation. It provides excellent durability and resistance to many common industrial solvents and fuels, as well as harsh environmental conditions. It cures rapidly at room temperature and its thixotropic properties allow for easy dispensing through static mixing nozzles, while maintaining good gap-filling and non-sag properties.

Physical Properties of Uncured Adhesive

	TA4810 A	TA4810 B
Chemical composition	Methyl methacrylate	Methyl methacrylate
Colour	Off-white	Amber
Mixed colour	Cream	
Viscosity @ 25°C	150,000-230,000 mPa.s (cP)	120,000-200,000 mPa.s (cP)
Specific gravity	1.0	1.0

Typical Curing Properties

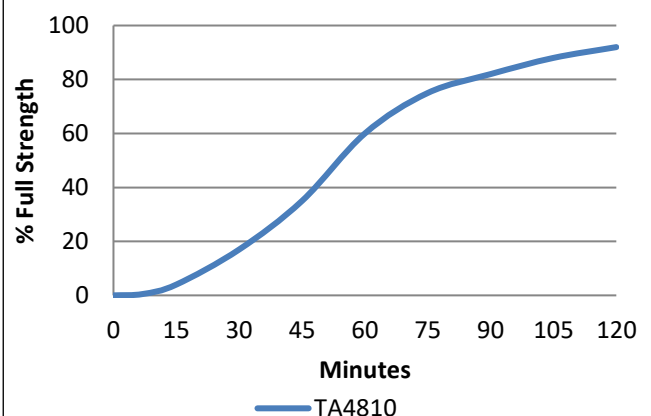
Ratio of use	1 : 1
Maximum gap fill	2 mm (0.08 in)
Pot life (10g+10g) @23°C	4-6 minutes
Fixture time @23°C	10-15 minutes
Handling time (0.3 N/mm ² shear strength is achieved) @23°C	20-30 minutes
Working strength @23°C	50-60 minutes
Full cure @23°C	24 hours

Typical Performance of Cured Adhesive

Shear strength* (ISO4587)	Steel: 21-28 N/mm ² (3000-4000 psi) Aluminium: 14-22 N/mm ² (2000-3200 psi) PPO to HIPS: Substrate failure PVC to PVC: Substrate failure SMC to SMC: Substrate failure Fiber glass to Fiber glass: >12 N/mm ² (1700 psi)
Tensile strength (ISO37)	29 N/mm ² (4200 psi)
Peel strength (ISO 4578)	70-90 N/25mm (15-20 PIW)
Elongation (ISO37)	15-20%
Coefficient of thermal expansion (ASTM D-696)	80 x 10 ⁻⁶ 1/K
Thermal conductivity (ASTM C-177)	0.1 W/(m.K)
Dielectric constant (ASTM D-150)	4.6 MHz
Dielectric strength (ASTM D-149)	30-50 kV/mm
Volume resistivity (ASTM D-257)	2 x 10 ¹³ Ohm.cm

*Strength results will vary depending on the level of surface preparation and gap.

Strength Development

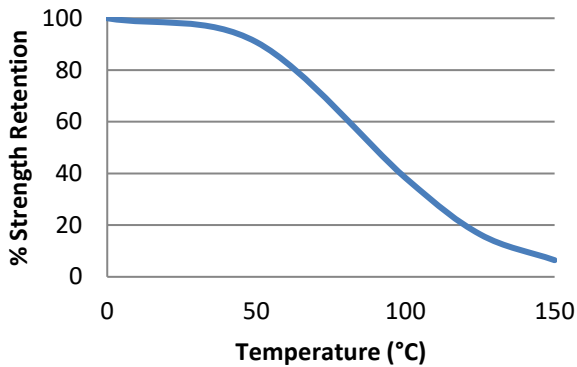


Graph shows typical strength development of bonded components at 23°C. Curing at higher or lower temperatures may affect cure speed.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

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.

Hot Strength



TA4810 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 -40°C (-40°F) depending on the materials being bonded.

Additional Information

This product is not recommended for use in contact with strong oxidizing materials. This product may affect some thermoplastics and users must check compatibility of the product with such substrates.

Information regarding the safe handling of this material may be obtained from the safety data sheet (SDS). Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

This Technical Datasheet (TDS) offers guideline information and does not constitute a specification.

Storage & Handling

Storage Temperature	2 to 25°C (35 to 77°F)
---------------------	------------------------

Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Permabond Cleaner A is recommended for the degreasing of most surfaces. Some metals such as aluminium, copper and its alloys will benefit from light abrasion with emery cloth (or similar), to remove the oxide layer.

Directions for Use

- 1) Surfaces must be clean, dry and grease-free prior to bonding.
- 2) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
- 3) Assemble components and clamp.
- 4) Maintain pressure until handling strength is achieved. The time required will vary according to the joint design and surfaces being bonded.
- 5) Allow 24 hours for adhesive to fully cure.

Video Links

Surface preparation:

<https://youtu.be/8CMOMP7hXjU>



Structural acrylic directions for use:

<https://youtu.be/xrDNwj2sdkM>



www.permabond.com

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

info.europe@permabond.com

info.americas@permabond.com

info.asia@permabond.com

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

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.