

## 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, fuels as well as environmental conditions. It cures rapidly at room temperature and has very good thixotropic properties allowing for easy dispensing through static mixers while maintaining good gap filling and non-sag properties.

## Physical Properties of Uncured Adhesive

|                            | TA4810 A            | TA4810 B            |
|----------------------------|---------------------|---------------------|
| Chemical composition       | Methyl methacrylate | Methyl methacrylate |
| Appearance                 | Off-white           | Amber               |
| Viscosity @ 25°C, cP       | 40,000 – 60,000     | 40,000 – 60,000     |
| Density, g/cm <sup>3</sup> | 1.02                | 1.04                |

## Typical Curing Properties

|                            |                  |
|----------------------------|------------------|
| Mixed viscosity @ 25°C, cP | 90,000 – 100,000 |
| Mix Ratio                  | 1 : 1            |
| Maximum gap fill, mm (in.) | 2 (0.079 in)     |
| Working time, minutes      | 4 – 6            |
| Fixture time, minutes      | 10 – 15          |
| Full cure, hours           | 24               |

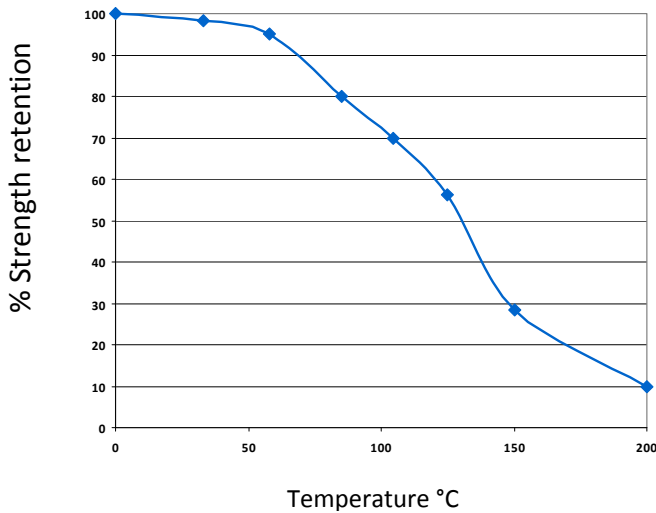
## Typical Performance of Cured Adhesive

|  |                           |
|--|---------------------------|
| Shear strength (steel), psi (ASTM D 1002)        | 3,500 – 4,500             |
| Shear strength (Al), psi (ASTM D 1002)           | 3,000 – 4,000             |
| Shear strength PPO to HIPS, psi                  | Substrate failure         |
| Shear strength (PVC to PVC), psi                 | Substrate failure         |
| Shear strength (SMC to SMC), psi                 | Substrate failure         |
| Shear strength (Fiber glass to fiber glass), psi | >1,700                    |
| Tensile strength, psi (DIN53283)                 | 4,200                     |
| Peel Strength, pli                               | 15 – 20                   |
| % elongation                                     | 15 – 20                   |
| Coefficient of thermal expansion (ASTM D 696)    | 80 x 10 <sup>-6</sup> 1/K |
| Thermal conductivity, W/m.K (ASTM C 177)         | 0.1                       |
| Dielectric constant, 10 MHz (ASTM D 150)         | 4.6                       |
| Dielectric strength, Kv/mm (ASTM D 149)          | 30-50                     |
| Volume resistivity, Ω.cm (ASTM D 257)            | 2 x 10 <sup>13</sup>      |

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.

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## Temperature Resistance



TA4810 can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed.

## 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 material safety data sheet (MSDS).

Users are reminded that all materials, whether innocuous or not, should be handled in accordance with the principles of good industrial hygiene.

## Surface Preparation

Surfaces should be clean, dry and grease-free before applying the adhesive. Some metals such as aluminum, 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/ fixture time 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. Accelerated cure times may be achieved by heating.

## Storage & Handling

|  |   |
|--|---|
| Storage Temperature. °C (°F)                         | 5 to 25 (41 to 77)  |
| Shelf Life<br>Stored in original unopened containers | 6 months, 12 months<br>if refrigerated at<br>2 – 7 °C (35 – 45°F) |

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