PERMABOND® TA4522
Toughened Acrylic Adhesive
Provisional Technical Datasheet

Features & Benefits

- Excellent adhesion to plastics
- Fast cure at room temperature
- Easy to dispense
- High shear and peel strength
- Low odour
- Low viscosity
- Non-flammable

Description

PERMABOND® TA4522 is a low-odour 2-part, 1:1 toughened acrylic adhesive. It can be used to bond a wide variety of materials including plastics, GRP, ceramics, wood, metal and other substrates. It is convenient to use in an easy-to-dispense cartridge with mixing nozzle or can be applied bead-on-bead* without static mixer. This product’s non-aggressive formulation helps minimize the chance of stress cracking in sensitive plastics.

Physical Properties of Uncured Adhesive

<table>
<thead>
<tr>
<th></th>
<th>TA4522 A</th>
<th>TA4522 B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical composition</td>
<td>Urethane methacrylate</td>
<td>Urethane methacrylate</td>
</tr>
<tr>
<td>Colour</td>
<td>White</td>
<td>Green/Blue</td>
</tr>
<tr>
<td>Mixed colour</td>
<td>Green</td>
<td></td>
</tr>
<tr>
<td>Viscosity @ 25°C</td>
<td>20 rpm: 3,000-6,000 mPa.s (cP)</td>
<td>20 rpm: 3,000-6,000 mPa.s (cP)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.1</td>
<td>1.1</td>
</tr>
</tbody>
</table>

Typical Curing Properties

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of use</td>
<td>1:1</td>
</tr>
<tr>
<td>Maximum gap fill</td>
<td>0.5 mm (0.02 in) with nozzle</td>
</tr>
<tr>
<td></td>
<td>0.2 mm (0.008 in) bead on bead</td>
</tr>
<tr>
<td>Nozzle life @ 23°C</td>
<td>4-7 minutes</td>
</tr>
<tr>
<td>Fixture / handling time</td>
<td>10-15 minutes*</td>
</tr>
<tr>
<td>Tack free time**</td>
<td>&lt;12 hours</td>
</tr>
<tr>
<td>Full cure @ 23°C</td>
<td>24-48 hours</td>
</tr>
</tbody>
</table>

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

Graph shows typical strength development of bonded components at 23°C. An increase of 8°C in temperature will halve the cure time. Lower temperatures will result in a slower cure time.

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.

Permabond TA4522
Global TDS Revision 6
3 November 2015
Page 1/2
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” shear strength tests performed on mild steel. Product fully cured at room temperature and conditioned to pull temperature for 30 minutes before testing. TA4522 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.

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.

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. 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.
2) Either:
   a) Apply a thin bead of adhesive pre-mixed through a static mixer nozzle.
   b) Alternatively, apply bead on bead – one bead of adhesive on top of the other
   c) Or, apply A component to one side and B component to the other

Applying adhesive side by side is not advisable as this may not achieve adequate mixing.
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 24-48 hours for adhesive to fully cure.

Storage & Handling

| Storage Temperature | 5 to 25°C (41 to 77°F) |

Contact Permabond:
• Americas +1 732 868 1372
• US 800-640-7599
• Asia + 86 21 5773 4913
• Europe +44 (0) 1962 711661
• UK 0800 975 9800
• Deutschland 0800 111 388
• France 0805 111 388
info.americas@permabond.com
info.europe@permabond.com
info.asia@permabond.com

Permabond TA4522 Global TDS Revision 6 3 November 2015 Page 2/2