

## Features & Benefits

- Cure on demand
- Can be cured with a low-powered lamp
- Crystal clear
- 100% solids, no solvents
- Good resistance against sunlight yellowing

## Description

**PERMABOND® UV612** is a high strength adhesive which cures on exposure to UV light. Its excellent optical clarity and resistance to yellowing make it ideal for bonding glass and crystal for a high quality finish. Its stability under ambient fluorescent lighting makes it suitable for use on glass bevels where some clean-up may be required after bonding.

## Physical Properties of Uncured Adhesive

|                      |                                     |
|----------------------|-------------------------------------|
| Chemical composition | Methacrylate ester                  |
| Appearance           | Colourless                          |
| Viscosity @ 25°C     | 20 rpm: 450-650 mPa.s ( <i>cP</i> ) |
| Specific gravity     | 0.95                                |

## Typical Curing Properties

|                       |                                                                                                                                                     |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Typical fixture time* | Low power 4mW/cm <sup>2</sup> battery lamp: 10-15 secs<br>LED 100mW/cm <sup>2</sup> lamp: 2-3 secs<br>UV light guide 30W/cm <sup>2</sup> : 1-2 secs |
| Cure wavelength       | 365 - 400 nm                                                                                                                                        |

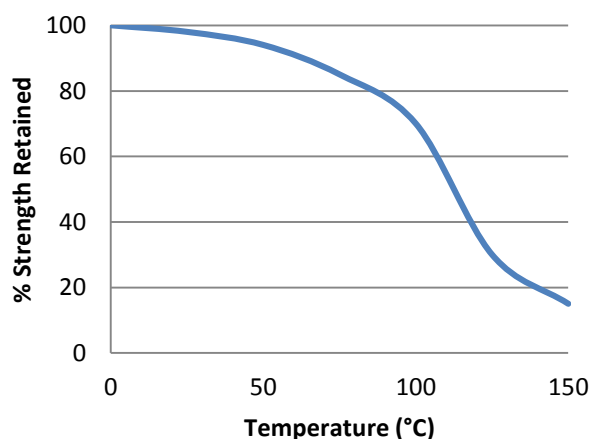
\*The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates.

## Typical Performance of Cured Adhesive

|                                                   |                                           |
|---------------------------------------------------|-------------------------------------------|
| Tensile strength (ASTM D-2095-69) steel to glass* | 8-12 N/mm <sup>2</sup><br>(1200-1700 psi) |
| Tensile strength (ISO37)                          | >5 N/mm <sup>2</sup> (>725 psi)           |
| Refractive index (cured)                          | >1.490                                    |
| Elongation (ISO37)                                | >50%                                      |
| Hardness (ISO868)                                 | 30-40 Shore D                             |
| Dielectric strength                               | 12 KV/mm                                  |
| Dielectric constant 1MHz@25°C                     | 4                                         |
| Water absorption (ISO62) 2 hours in boiling water | <2%                                       |

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

## Hot Strength



"Hot strength" shear strength tests performed on glass to mild steel. Fully cured specimens conditioned to pull temperature for 30 minutes before testing at temperature.

UV612 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 (-67°F) depending on the materials being bonded.

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## Additional Information

This product is not recommended for use in contact with strong oxidizing materials.

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. Particular care should be taken to remove silicone based cleaning agents which may have been used previously to clean glass.

Some metals such as aluminium, copper and its alloys, will benefit from light abrasion with emery cloth (or similar) to remove the oxide layer.

Isopropanol can be used to degrease most surfaces.

Where thermoplastic surfaces are involved we recommend tests are done to ensure compatibility, mold release agents may affect bond strength.

## Directions for Use

- 1) Adhesive can either be applied directly from the bottle or dispensed via automated dispensing equipment for more accurate dosing. Minimise exposure of product to ambient light.
- 2) It is important to try to prevent air entrapment within the joint as this could be detrimental to the finished appearance of the adhesive.
- 3) Parts should be firmly held and not disturbed during cure. Expose the joint to ultra-violet light for the appropriate time to ensure full cure. Cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates.
- 4) For help selecting a suitable lamp and/or dispensing equipment, please contact the Permabond technical helpline.

## Storage & Handling

|                                             |                        |
|---------------------------------------------|------------------------|
| Storage Temperature                         | 5 to 25°C (41 to 77°F) |
| Protect liquid adhesive from room lighting. |                        |

## Other Products Available

### Anaerobics

- Thread lockers
- Thread sealants
- Gasket makers
- Sealants / retainers

### Cyanoacrylates

- Instant adhesives
- For rapid bonding of metals, plastics, rubber and many other materials

### Epoxies

- Two-part room temperature cure adhesives
  - Single-part heat cure adhesives
- Modified Technology (MT) flexible grades available

### MS-Polymers

- Single-part, moisture-curing, flexible sealants

### Polyurethanes

- Two-part room temperature curing adhesives

### Toughened Acrylics

- Rapid curing, high strength structural adhesives

### UV Light Cured Adhesives

- Glass / plastic bonding
  - Optically clear
  - Non-yellowing

## 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](mailto:info.americas@permabond.com)

[info.europe@permabond.com](mailto:info.europe@permabond.com)

[info.asia@permabond.com](mailto:info.asia@permabond.com)

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