






## Features & Benefits

-  Cure on demand
-  Low viscosity for good coverage
-  Tack free
-  Fast curing with low-power lamps
-  100% solids, no solvents

## Description

**PERMABOND® UV681** has been developed for use as a coating. It is ideal for coating electronics (such as conformal coating) to protect against environmental and vibrational damage. The optically clear / tack free formulation also makes this product particularly suitable for coating smart card microchips amongst various other applications. Its low viscosity ensures an even, bubble-free coating and high temperature resistance allows it to resist wave-soldering.

## Physical Properties of Uncured Adhesive

Chemical composition	Acrylate
Appearance	Colourless
Viscosity @ 25°C	80-120 mPa.s (cP)
Specific gravity	1.1

## Typical Curing Properties

Typical fixture time*	Low power 4mW/cm <sup>2</sup> battery lamp: 7 secs LED 100mW/cm <sup>2</sup> lamp: 2 secs UV light guide 30W/cm <sup>2</sup> : 1 sec
Tack free time	Low power 4mW/cm <sup>2</sup> battery lamp: 15 secs LED 100mW/cm <sup>2</sup> lamp: 5 secs UV light guide 30W/cm <sup>2</sup> : 1-2 secs
Cure wavelength	320 - 420 nm

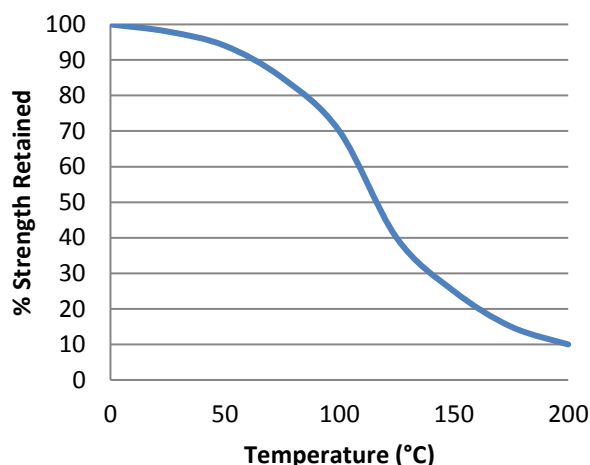
\*The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates.

## Typical Performance of Cured Adhesive

Tensile strength (ISO37)	10-12 N/mm <sup>2</sup> (1450-1700psi)
Light transmittance	>98%
Refractive index	>1.490
Elongation at break (ISO37)	>50%
Hardness (ISO868)	50-65 Shore D
Water absorption (ISO62) 2 hours in boiling water	<2%
Glass transition (T <sub>g</sub> ) DSC 20°C/min rate	+55°C

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

## Hot Strength



UV681 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.

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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## 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.

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

## 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 in the coating or within the joint as this could be detrimental to the finished appearance of the adhesive.
- 3) Dip or apply as an even layer allowing material to spread outwards. Alternatively, material can be applied as a bead. Using a spreader or roller can help to spread the adhesive but may result in entrapment of air bubbles.
- 4) For help selecting a suitable lamp and/or dispensing equipment, please contact the Permabond technical helpline.

## Video Link

UV adhesive directions for use:

<https://youtu.be/hPUoSocmEW4>



## 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

## Storage & Handling

Storage Temperature	2 to 7°C (35 to 45°F)
Protect liquid adhesive from room lighting.	

[www.permabond.com](http://www.permabond.com)

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