PERMABOND® UV605

UV-Curable Adhesive

Provisional Technical Datasheet

Features & Benefits

- Low viscosity
- High shear strength
- Fast curing with low power lamps
- 100% solids, no solvents
- Excellent adhesion to metal and glass

Description

PERMABOND® UV605 is a very low viscosity, 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. The low viscosity results in excellent capillary action making it suitable for application after the components have been assembled.

Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate ester
Appearance	Colourless
Viscosity @ 25°C	20 rpm: 50-100 mPa.s *(cP)*
Specific gravity	1.0

Typical Curing Properties

Typical fixture time*	Low power 4mW/cm² battery lamp: 15 secs LED 100mW/cm² lamp: 4 secs UV light guide 30W/cm²: 3 secs
Cure wavelength	365 - 400 nm

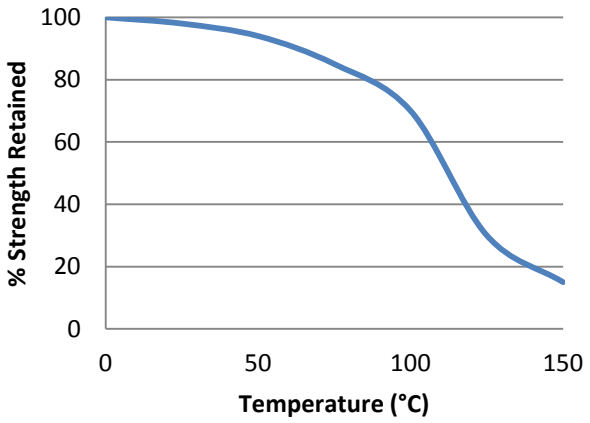
**The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates. The cure time quoted here was determined using a low power, hand held lamp. Most industrial UV lamps would give faster cure rate.*

Typical Performance of Cured Adhesive

Tensile strength (ASTM D-2095-69) steel to glass*	10-14 N/mm² *(1450 psi – 2000 psi)*
Tensile strength (ISO37)	14 N/mm² *(2000 psi)*
Refractive index (cured)	>1.490
Elongation (ISO37)	90%
Hardness (ISO868)	65-75 Shore D
Dielectric strength	12 KV/mm
Dielectric constant 1MHz@25°C	4
Water absorbtion (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.

UV605 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.

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
info.europe@permabond.com
info.asia@permabond.com