

PERMABOND® UV630

UV-Curable Adhesive

Technical Datasheet

Features & Benefits

- Cure on demand
- High shear strength
- Fast curing with low-power lamps
- 100% solids, no solvents
- Excellent adhesion to plastics

Biocompatibility

ISO 10993-5 Cytotoxicity

Description

PERMABOND[®] UV630 is a single part, fast setting, and UV curable adhesive designed specifically for bonding plastics. This material has excellent adhesion to a variety of plastics including polycarbonate. Permabond UV630 has very high shear strength, elongation and impact resistance making it ideal for applications that require substrates with different coefficients of thermal expansion.

Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate ester
Appearance	Colourless, clear
Viscosity @ 25°C	20rpm: 200-300 mPa.s <i>(cP)</i>
Specific gravity	1.1

Typical Curing Properties

Typical	Low power 4mW/cm ² battery lamp: 10secs
fixture time	LED 100mW/cm ² lamp: 4 secs
(acrylic)*	UV light guide 30W/cm ² : 2 secs
Cure wavelength	365 - 420 nm**

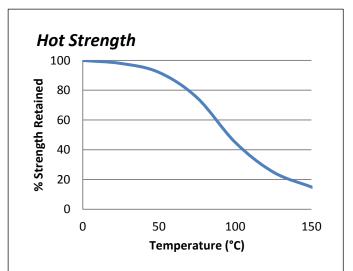
*The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates.

**LED UV lamps have a narrow range of spectral output. It is important to check suitability with Permabond in order to match the LED lamp's peak wavelength with that of the adhesive's photoinitiator to ensure optimal adhesive cure.

Typical Performance of Cured Adhesive

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Overlap shear	Polycarbonate: >9 N/mm ² * (>1300 psi)
strength (ISO4587)	Acrylic: >1.5 N/mm ² (>220 psi)
Tensile strength (ISO37)	14 N/mm² <i>(2000 psi)</i>
Refractive index	>1.490
Elongation at break (ISO37)	110%
Hardness (ISO868)	60 Shore D
Dielectric strength	25-30 KV/mm
Dielectric constant 1MHz@25°C	4
Water absorbtion (ISO62) 2 hours in boiling water	<3.5%
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*Substrate failure was observed



"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.

UV630 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.

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 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.

Video Link

UV adhesive directions for use: https://youtu.be/Y9q0FGFhdvc



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-vellowing

Storage & Handling

Storage Temperature

5 to 25°C (41 to 77°F)

Protect liquid adhesive from room lighting.

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