PERMABOND® UV6302

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
- Capillary action

Description

PERMABOND® UV6302 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 UV6302** has very low viscosity for good capillary action; this makes it ideal for close fitting components with tight gaps and for post assembly application.

Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate ester
Appearance	Clear, colourless
Viscosity @ 25°C	50-100 mPa s *(cP)*
Specific gravity	1.10

Typical Curing Properties

Fixture time (low power 3-5 mW/cm² lamp)	Polycarbonate: 25-30 s Rigid PVC: 5-7 s PMMA: 4-5 s
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. The cure time quoted here was determined using a low power, hand held lamp. Most industrial UV lamps would give faster cure rate.*

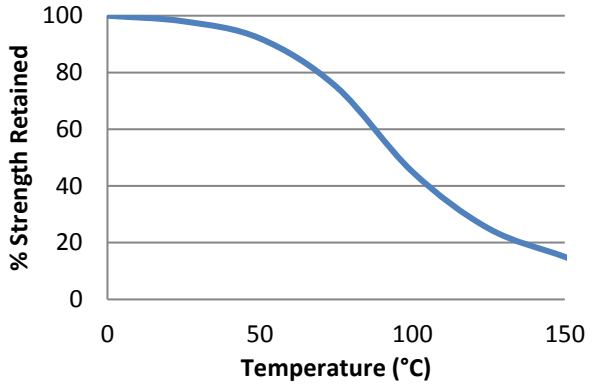
***LED UV lamps have a narrow range of spectral output. It is important to check suitability with Permabond in order to match the LED lamp's peak wavelength with that of the adhesive's photoinitiator to ensure optimal adhesive cure.*

Typical Performance of Cured Adhesive

Shear strength (ISO 4587)	Polycarbonate: >7N/mm² *(>1000 psi)** Rigid PVC: >2N/mm² *(>300 psi)** PMMA: 1.5-2N/mm² *(200-300psi)*
Tensile strength (DIN 53504)	15 - 20 N/mm² *(2200 psi)*
Elongation (DIN 53504)	100 - 150%
Hardness (ISO868)	50-65 Shore D
Refractive index	1.474

**Substrate failure was observed*

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.

UV6302 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

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

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