PERMABOND UV640

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

Description

PERMABOND UV640 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 UV640** 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	Clear, colourless
Viscosity @ 25°C	3,000-4,000 mPa.s (cP)
Density	1.1

Typical Curing Properties

Fixture time (low power 4mW lamp)*	7 seconds
Maximum gap fill	0.4 mm ***0.016 in***
Cure wavelength	365 - 420 nm

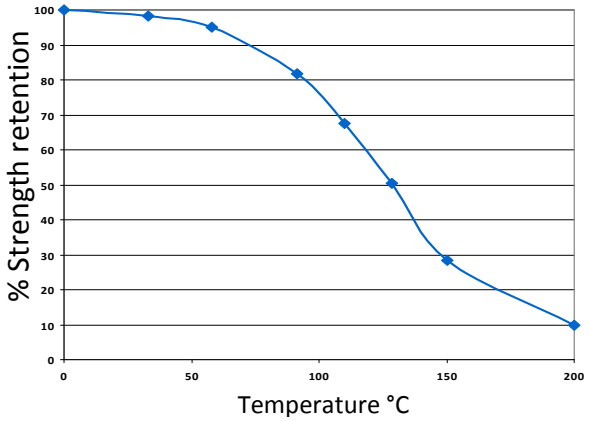
**The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates. The cure time quoted here was determined using a low power, hand held lamp. Most industrial UV lamps would give faster cure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

Typical Performance of Cured Adhesive

Shear strength polycarbonate	>9N/mm² ***(>1300 psi)****
Tensile strength ASTM D-2095	13 N/mm² ***(1900 psi)***
Refractive index	1.47
Elongation	110%
Shore D hardness	60
Dielectric strength	12 KV/mm
Dielectric constant 1MHz@25°C	4

**Substrate failure was observed*

Temperature Resistance



UV640 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 material safety data sheet (MSDS).

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.
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.
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)***
Shelf Life Stored in original unopened containers	12 months

Other Products Available

Anaerobics

Toughened
Gas & water approved
High temperature resistance
Flexible

Cyanoacrylates

Low bloom / low odour
Flexible
High temperature resistance

Epoxies

Fast cure
Toughened
Flexible grades

Toughened Acrylics

Rapid cure
Low odour
Pre-mixed
Gap filling

UV Light Cured

Glass / plastic bonding
Optically clear
Non-yellowing

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