PERMABOND® UV7138

Dual Cure UV- Adhesive

Technical Datasheet

Features & Benefits

- Cures in shadow areas
- High shear strength
- Excellent environmental resistance
- 100% solids, no solvents
- Excellent adhesion to metal and glass

Description

PERMABOND® UV7138 is a UV-curable adhesive with a secondary anaerobic cure mechanism. This makes it ideal for bonding materials where UV-light cannot penetrate to provide full cure in shadow areas. It is particularly suitable for bonding coil windings. The dual cure mechanism helps speed up production rates. The UV cure tacks the components in place in seconds, reducing the need for jigging. The bulk of the adhesive then cures more slowly to produce optimum performance.

Physical Properties of Uncured Adhesive

Chemical composition	Methacrylate ester
Appearance	Colourless, clear
Viscosity @ 25°C	20rpm: 700-1000 mPa.s *(cP)*
Specific gravity	1.1

Typical Curing Properties

Typical fixture time*	Low power 4mW/cm² battery lamp: <10 sec. LED 100mW/cm² lamp: 2-5 sec. UV light guide 30W/cm²: 1-3 sec.
Cure wavelength	365-420nm
Anaerobic handling time (zinc) @23°C	<10 minutes
Anaerobic working strength (zinc) @23°C	2-4 hours

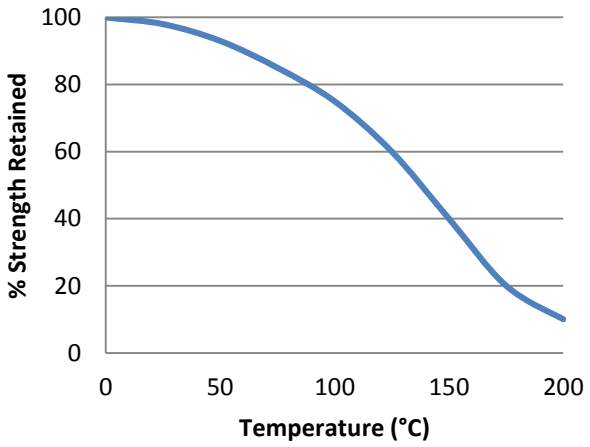
**The cure time depends on the power of the UV lamp, its spectral output, the distance between the lamp and the components, and the transmission characteristics of the substrates.*

Typical Performance of Cured Adhesive

Tensile strength (ASTM D-2095-69)	>15 N/mm² *(> 2200 psi)*
Elongation (ISO37)	>50%
Hardness (ISO868)	65-75 Shore D
Dielectric strength	10-12 KV/mm
Dielectric constant 1MHz@25°C	4
Coefficient of thermal expansion	85 x 10^{-6} mm/mm/°C

**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.

UV7138 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) For assemblies where neither component is metallic and where UV-light cannot reach the adhesive, apply Permabond A905 or ASC-10 to one component.
3) It is important to try to prevent air entrapment within the joint as this could be detrimental to the finished appearance of the adhesive.
4) 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.
5) 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

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