PERMABOND® 135UV

Light Cure Cyanoacrylate (Dual Cure)

Provisional Technical Datasheet

Features & Benefits

- Cures in shadow areas
- Good adhesion to metals and plastics
- Tack-free in seconds using a UV light source
- Reduced odour and bloom
- Good open time for accurate alignment
- Transparent in a thin layer
- Excellent environmental resistance
- Low hazard SDS
- Passes 85°C/85% RH

Description

PERMABOND® 135UV is a low viscosity, solvent-free, light cure cyanoacrylate adhesive that fluoresces under UV light. It has been developed for applications where fast bonding between opaque substrates and tack-free fillets are needed. The UV light cure facilitates the curing, minimising the blooming effect, and allowing rapid bonding through transparent parts. When used as a UV cured adhesive or coating, the moisture cure provides polymerisation in small shadow areas.

Physical Properties of Uncured Adhesive

Chemical composition	Ethyl cyanoacrylate
Appearance	Yellow before cure Clear in a thin bondline
Viscosity @ 25°C	800 mPa.s ***(cP)***
Specific gravity	1.1

Typical Curing Properties

Open time (moisture cure only [22°C/50% RH])	NBR	3s	Nylon 6	20s
	EPDM	20s	ABS	10s
	Stainless Steel	30s	PC	40s
		30s	PMMA	80s
	Aluminium	30s	PET-G	55s
Tack-free time (UV cure)*	≤1s (spot LED, 150 mW/cm², 405 nm) ≤5s (spot LED, 25 mW/cm², 405 nm)			

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

Biocompatibility

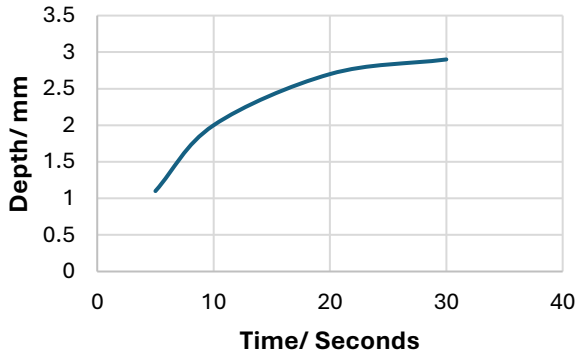
ISO 10993-5 Cytotoxicity

Typical Performance of Cured Adhesive

Shear strength* (ISO 4587)	Abraded Mild Steel	12-17 N/mm² ***(1740-2465 psi)***
	Stainless Steel	14-19 N/mm² ***(2030-2755 psi)***
	Aluminium	5-9 N/mm² ***(725-1305 psi)***
	Polycarbonate	6-10 N/mm² ***(870-1450 psi)***
	PMMA	7-11 N/mm² ***(1015-1595 psi)***
	Nylon 6	7-11 N/mm² ***(1015-1595 psi***
	PVC	8-12 N/mm² ***(1160-1740 psi)***
	ABS	6-10 N/mm² ***(870-1450 psi)***
Hardness (ISO 868)	70-80 Shore D	

**24-hour moisture cure only. Higher strengths can be obtained on clear substrates using UV light secondary cure. Strength results will vary depending on the level of surface preparation and gap.*

Depth of Cure



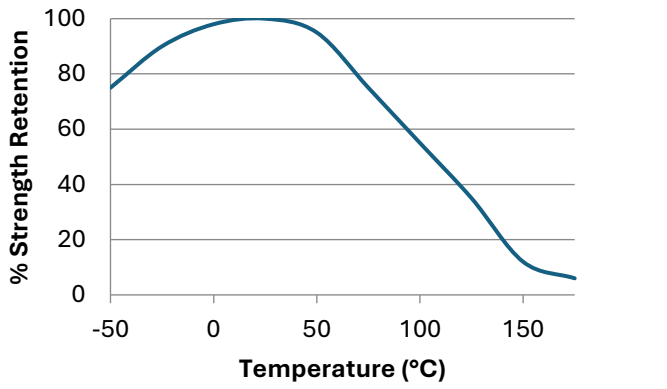
Depth of cure at 25 mW/cm² and 405 nm. The depth of cure will depend on the power of the UV lamp, its spectral output, the distance between the lamp and substrates and the transmission characteristics of the substrates.

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.

FOR PROFESSIONAL OR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN

Hot Strength



"Hot strength" shear strength tests performed on mild steel. 24-hour cure at room temperature and conditioned to pull temperature for 30 minutes before testing.

135UV can withstand higher temperatures for brief periods (such as for paint baking and wave soldering processes) providing the joint is not unduly stressed.

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 an 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 – mould 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. Apply the adhesive sparingly to one surface.
   Minimise exposure of the product to ambient light.
2) Bring the components together quickly and correctly aligned. 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) Apply sufficient pressure to ensure the adhesive spreads into a thin film. 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	2 to 7°C ***(35 to 45°F)***
Protect liquid adhesive from room lighting.	

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

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