

Features & Benefits

- 💧 Excellent environmental resistance
- 💧 Resistant to humidity
- 💧 100% solids, no solvents
- 💧 Bonds glass filled PBT
- 💧 Low water absorption

Description

PERMABOND[®] UV7220 is a low viscosity Dual Cure (UV-Heat Curing) cationic adhesive. It is suitable for bonding plastics such as Polycarbonate and glass filled PBT. UV7220 is self-levelling, suitable for sealing or potting applications. It is formulated to have good resistance to humidity and thermal cycles.

Physical Properties of Uncured Adhesive

Chemical composition	Epoxy resin
Appearance	Black
Viscosity @ 25°C	700 – 1,300 mPa.s (cP)
Thixotropy index	3.7
Rewarming time from storage temperature	50ml: 50 minutes at 25°C 160ml: 90 minutes at 25°C
Operation time	3 days at 25°C
Specific gravity	1.14

Typical Curing Properties

Typical fixture time	LED 150mW/cm ² lamp: 4s*
Cure wavelength	325 - 365 nm***
Maximum curing thickness (60s: 365nm, 150 mW/cm ²)	0.75 mm (0.03 in)
Alternative heat cure**	80°C (176°F): 50 mins 100°C (212°F): 25 mins 130°C (266°F): 10 mins

*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.

**Once cured, leave the components for 24 hours at 24°C to complete the polymerization.

***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* (ISO4587)	Mild Steel (Heat cured): 15 N/mm ² (2175 psi) PETG: >3 N/mm ² (>435 psi)** Polycarbonate/PETG: >3 N/mm ² (>435 psi)** ABS: 2-4 N/mm ² (300-580 psi) PBT (Glass filled): 2-5 N/mm ² (300-725 psi) PETG / Stainless steel: >3 N/mm ² (>435 psi)**
Elongation (ISO37)	>5%
Glass transition temperature Tg	145-160°C (293-320°F)
Operating temperature	-40 to 150°C (-40 to 302°F)
Volumetric shrinkage	1.6%
Water absorption 24h at 25°C (ASTM D 570)	0.8%
Hardness (ISO868)	70-90 Shore D

*Strength results will vary depending on the level of surface preparation and gap.

**Substrate failure was observed (PETG)

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.

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.

Storage & Handling

Storage Temperature	-18°C to 0°C (-0.4 to 32°F)
Protect liquid adhesive from room lighting.	

Directions for Use

1. Adhesive can either be applied directly from the bottle or dispensed via automated dispensing equipment for more accurate dosing.
2. Apply the adhesive to one surface and assemble. Avoid entrapping air.
3. Parts should be firmly held and not disturbed during cure. Expose the joint to ultra-violet light for the appropriate time to ensure the components are fixed. 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.
Alternatively, the components can be cured with heat. Use a jig / clamp to prevent parts moving during cure and expose to the appropriate heating conditions.
4. Once cured, leave the polymerized product for 24 hours at 23°C in order to complete the cationic polymerization.

www.permabond.com

• UK: 0800 975 9800

• General Enquiries: +44 (0)1962 711661

• US: 732-868-1372

• Asia: + 86 21 5773 4913

info.europe@permabond.com

info.americas@permabond.com

info.asia@permabond.com

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full-scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purpose under their own operating conditions. THE PRODUCTS DISCLOSED HEREIN ARE SOLD WITHOUT ANY WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED.

No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the non-existence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.