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Frequently Asked Questions

3M™ Single Bond Universal Adhesive



What is the pH of 3M™ Single Bond Universal Adhesive?

2.7

Why is Single Bond Universal adhesive indicated for use on uncut enamel with a sealant, but not in other restorations?

- a. Etching is used to maximize longevity and esthetics of the restoration. Direct restorations have higher esthetic demands and experience greater forces than sealants, and the pH is not high enough to properly etch the enamel to withstand these forces.
- b. With sealants, you could get wear on the surface, but it is still bonded to the fissures where sealants are most necessary.

Is the silane in Single Bond Universal adhesive stable?

Yes. Silane is stable in a solution with alcohol, filler and a moderately acidic pH. Single Bond Universal adhesive meets all of these conditions.

If I wanted to use a dual cure veneer cement, would the 3M™ Single Bond Universal Adhesive DCA Dual Cure Activator discolor the veneer?

- a. No, in actuality, any discoloration would come from the dual cure component (amine) in the veneer cement.
- b. If you use 3M™ RelyX™ Veneer Cement you do not need the activator since it is light cured.

If I used the dual cure activator, would it accelerate the setting of the cement?

If the Instructions for Use are followed properly (including light curing of the adhesive—activator mixture before placement of the cement), there should not be a noticeable acceleration. This might be different if the cement is actively mixed with a thick layer of uncured adhesive—activator mixture.

Can I use the self-etch method when bonding a veneer?

Since veneers are predominantly bonded to enamel and can be subject to high forces when biting into hard food, we recommend to etch in order to maximize enamel bond strength.

Does this material have a hydrophobic overcoat?

Technically, no. However, a properly applied, air dried and light cured layer of Single Bond Universal adhesive is highly hydrophobic.

What is the benefit of going from a hydrophilic material to a hydrophobic material?

- a. Single Bond Universal adhesive is hydrophilic before light curing. This hydrophilicity allows for the adhesive to properly wet out the tooth surface and penetrate the dentin tubules.
- b. Single Bond Universal adhesive is hydrophobic after light curing. This hydrophobicity leads to better marginal integrity and longer term bond strength.

How many applications are in a vial?

5 mL = 200 drops of 0.025 mL.

How much material is in a unit dose?

0.11 mL = 0.12 g, or approximately 4 drops.

What is the film thickness?

The electron microscopy images by Dr. Bart Van Meerbeek that you can find in the Technical Product Profile show the adhesive film thickness to be in the range of 5–10 microns.

Is the product radiopaque?

No. Radiopacity is not as important with a film thickness of 10 microns.

Does this material require refrigeration?

No. It can be stored between 36–77 F°.

Does this material require shaking before use?

No, just like 3M™ Adper™ Easy Bond Self-Etch Adhesive and 3M™ Adper™ Single Bond Plus Adhesive, the nanosilica filler particles of Single Bond Universal adhesive do not settle out of dispersion.

What are the advantages of MDP over MHP?

- a. MDP maintains self-etch effectiveness without refrigeration.
- b. MDP provides greater enamel bond strength.
- c. MDP enables the bonding to zirconia, alumina and metal.

What components contribute to achieving virtually no post-op sensitivity for total-etch?

The combination of proprietary 3M™ Vitrebond™ Copolymer, HEMA and water.

What is the product shelf life?

2 years

How can it be effective in both total- and self-etch techniques?

- a. Total Etch: The combination of proprietary 3M™ Vitrebond™ Copolymer, HEMA and water makes the adhesive more forgiving on various moisture levels. Because it is based off the 3M™ Adper™ Single Bond Plus total-etch platform, it works with total-etch techniques.
- b. Self Etch: In addition to Vitrebond Copolymer, HEMA and water, 3M™ Single Bond Universal Adhesive also contains MDP for a more effective self-etch. Because of 3M's careful chemistry management there are no concerns with self-etch techniques.

What are the advantages of the new bottle?

The proprietary translucent vial allows the practitioner to see remaining volume in the vial while protecting the photoinitiator in the adhesive. The vial has a flip top delivery for one-hand operation; it has a unique nozzle design for dispensing control.

What is the curing time of this material with a high-intensity light?

To overcome any deficiencies in curing light outputs and to accommodate for varying distances from the tooth surface, it is recommended to light cure for 10 seconds. If a dentist wishes to use a plasma arc light, they should refer to the Instructions for Use specific to the light.

Does the protective varnish application limit the fluoride uptake on a glass ionomer?

The protective varnish coat might slow down the initial fluoride release from the surface of the restoration to some extent, leading to a longer capability of fluoride release. It will not interfere with fluoride release at the tooth/restoration interface.

Does Single Bond Universal adhesive bond to amalgam?

Bonding to amalgam is a bit misleading. Bond strength of amalgam to a cured methacrylate-based formulation is very low—that is why amalgam fillings still have to be placed in a retentive cavity preparation, regardless if the cavity has been treated with an adhesive or not. Single Bond Universal adhesive is not indicated for bonding amalgam; however, it is indicated for sealing the cavity prior to placing amalgam. Sealing the cavity with an adhesive before amalgam placement makes sense in order to prevent post-operative sensitivities.

Is 3M™ Single Bond Universal Adhesive DCA Dual Cure Activator a primer?

No, the Dual Cure Activator is intended to be mixed with the adhesive, which then allows for self-cure. The Single Bond Universal adhesive DCA dual cure activator consists of sodium toluene sulfinate and ethanol. When the activator is mixed with Single Bond Universal adhesive, it allows for bonding to self- and dual-curing core build-up, composite and cement materials that rely on the self-cure mechanism for polymerizing the material.

What third party studies do we have?

Please refer to the technical product profile.

What can I use to clean/disinfect the preparation?

The Instructions for Use advise against the use of substances such as desensitizers, hydrogen peroxide, etc. (with the exception of chlorhexidine solutions) after the final cleaning. The reason for this is that hydrogen peroxide forms radicals that interfere with the cure of methacrylates.

What happens if I overdry the preparation or the adhesive?

The carefully balanced formula of Single Bond Universal adhesive containing the Vitrebond Copolymer, HEMA and water allows for high and consistent bonding to etched dentin surfaces, even if the dentin surface is accidentally dried. Numerous adhesion studies have been conducted to support this, as well as SEM/TEM studies show—that there is a uniform hybrid layer and no indication of collapsed collagen unimpregnated with resin on moist or dry etched dentin. Together, with the high moisture tolerance and robustness and its high degree of polymerization at the tooth interface, Single Bond Universal adhesive leads to virtually no post-operative sensitivity in self-etch and total-etch modes.

How long do I have to scrub Single Bond Universal adhesive into the tooth?

The recommended scrubbing time is 20 seconds. This allows for proper etching effects to take place and for the adhesive to penetrate the dentin tubules.

What are the key advantages of the new etchant?

The viscosity and distinct blue color allow for easy, consistent and controlled placement of the etchant out of the delivery syringe. The blue color also aids in confirmation of complete rinsing of the etchant from the tooth surface. The viscosity of the phosphoric acid gel etchant is modified with fumed silica and a water soluble polymer.

Do you have to use the 3M™ Single Bond Universal Etchant with this adhesive?

No, any phosphoric acid etchant may be used.



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