Your Techniques, Your Patients: 

ONE ADHESIVE
Currently, adhesives fit into two main categories, total-etch (etch-and-rinse) or self-etch. As the chemistry of adhesives has advanced, the goal has been fewer procedural steps and greater efficiency, without compromising bond strength. Unfortunately, 5th generation (2-step total-etch) bonding became more technique sensitive, as over-etching and over-drying contributed to postoperative sensitivity. As adhesive gurus always remind us, when you combine chemistry, it doesn’t always work out the way you plan.

The belief that phosphoric acid etching contributed to sensitivity ushered in the use of self-etch bonding systems: adhesive and primer combinations with a lower pH, so the acidity of the material could dissolve the smear layer to some degree, without the use of separate phosphoric acid.

Depending on their opinion of adhesive chemistry and phosphoric acid, most practitioners probably fall into one of those two categories: etch-and-rinse (total) or self-etch. Because dentists prefer simpler procedures and robust materials, the stage was set for the next development: one adhesive to satisfy both camps. The question was: could we combine chemistries into one bonding system that could be used in most applications, with whatever etching mode the dentist prefers?

**KEY FEATURES OF A TRULY UNIVERSAL ADHESIVE**
- For all direct and indirect restorations
- For all etching techniques: self-etch, etch-and-rinse, and selective enamel etching
- Low film thickness
- Virtually no postoperative sensitivity
- High bond strength

**THE BEST OF BOTH WORLDS**
You can have the best of both worlds—advanced adhesion and marginal seal on enamel with phosphoric etching, along with reduced risk of postoperative sensitivity by not etching the dentin. This “selective enamel etching” is possible with universal adhesives that can be applied with and without etching. On the other hand, etch-and-rinse adhesives won’t work if the dentin is not etched. And with pure self-etch products, when etching the enamel, there is always the risk that some etchant gets on parts of the dentin, resulting in performance decrease and postoperative sensitivity.
Every procedure is different, and with Prime&Bond elect Universal Dental Adhesive, you can use your preferred method.

A universal adhesive is beneficial to your practice in many ways, as it can replace separate bonding systems that need to be managed through inventory, impacting your cash flow and work flow.

In addition, with so many systems on the market, each having different directions, it’s complicated to keep track of them in a daily practice - and it becomes even more complex when you switch techniques. These details are extremely important with some adhesives, and you need to understand exactly how to use them. The more systems you use, the harder it is to remember and follow detailed directions.

The true benefit of consolidating inventory and streamlining your approach is that you will know the product inside and out, exactly how to use it to achieve the best results. Simplifying your adhesion is a true benefit not only to a practitioner, but also to the entire team placing restorations. Having everyone know exactly how to use a product makes a difference.

THE CHALLENGE WITH ETCHING

Another benefit of a universal adhesive is the prevention of postoperative sensitivity. The challenge with phosphoric acid is that it affects enamel and dentin at different rates. Etchant exposure on enamel is typically recommended to be at least 15 seconds, whereas etchant exposure to dentin should not exceed 15 seconds. This is where the beauty of universal adhesives comes in - the doctor can treat both the dentin and enamel appropriately by choosing when and where to etch, while only stocking a single adhesive in the office.

FACTORS IN POSTOPERATIVE SENSITIVITY

- Over-etching dentin
- Over-drying dentin
- Solvents not removed during drying step
- Incomplete material coverage
- Under curing
Selective-Etch with PRECISION

Universal adhesives were created to give the doctor the opportunity to obtain a strong bond to enamel while reducing the chance of postoperative sensitivity by not placing phosphoric acid on the dentin. The advantages of selective-etching are most realized when the prep exposes the dentin, but enamel margins are also available.

Application of the etchant to the enamel margins (but not to the dentin) will give a “self-etch” user additional confidence, as etching the enamel only will not increase the probability of sensitivity but will strengthen the bond at a vulnerable interface. The total-etch user gains confidence by not sacrificing enamel bond but reducing the chance of postop sensitivity by avoiding over-etching or over-drying of the dentin.

When selective etching, the ideal phosphoric acid is one that is higher in viscosity. This will allow the clinician to trace the available enamel margins with the phosphoric acid, while minimizing the chance that it drips or slumps onto undesired areas like the dentin. Some self-etch products on the market contraindicate exposing the dentin to phosphoric acid, because this contamination then leads to over-etching of the dentin areas that are etched twice.

CLINICAL SITUATIONS FOR SELECTIVE-ETCH

| Direct Restorations (Class I, II, and V) | Uninstrumented Enamel | Indirect Inlay/Onlay Cementation |

TECHNIQUE TIPS

Selective etch with Prime&Bond elect to ensure a great bond to both dentin and enamel.

Click on the Prime&Bond elect Selective-Etch Mode video.
Traditionally, the self-etch technique is appropriate when the prep is mostly in dentin, with little or no available enamel margins to etch with the goal of minimizing the probability of postoperative sensitivity.

Both self-etch and universal adhesives contain acidic monomers that achieve adequate demineralization of the dentin for successful bonding; therefore, no separate phosphoric acid etching step is required.

Using Prime&Bond elect in this technique is commonly used to help avoid postoperative sensitivity by eliminating the possibility of over-etching or over-drying the dentin, as the smear layer is not entirely removed. It is instead incorporated into the hybrid layer upon curing of the adhesive.

CLINICAL SITUATIONS FOR SELF-ETCH

- Indirect Full-Coverage
- Crown
- Endodontics Post
- Cementation

TECHNIQUE TIPS

Prime&Bond elect provides the perfect bond strength to the dentin layer.
Total-Etch with STRENGTH

It may be beneficial to utilize a total etch technique when a large percentage of the substrate being adhered to is enamel. Bonding to etched enamel is the most durable bond we can form in the mouth.

In this technique, the phosphoric acid etchant is applied to the entire preparation, then rinsed thoroughly, and dried until there is no pooling of water, leaving a moist, glistening surface.

TECHNIQUE TIPS
Achieve consistently high bond strengths with no sensitivity using Prime&Bond elect.

CLINICAL SITUATIONS FOR TOTAL ETCH

| Indirect Veneer Cementation | Small or Shallow Direct Restorations | Direct Veneers | Class III and IV Restorations |

Your Techniques, Your Patients: One Adhesive
What’s better—a thick bonding agent or thin bonding agent? This is a confusing topic and somewhat controversial. Some dentists prefer a thicker material, believing it results in better coverage. However, thick bonding systems can be technique sensitive: they need to be aggressively thinned out. Otherwise, there can be pooling or voids where there is too much bonding agent and not enough filling material. These adhesive pools show up as translucent areas on the radiograph, which can easily be misdiagnosed as a void, gap, or secondary decay—causing the clinician to consider removing the restoration.

A thin agent (if it can perform as well as other products) results in very low film thickness, which can prevent pooling and provide tight margins with no gaps. When these restorations are viewed on the radiograph, there are good interfaces between tooth and restoration, with no adhesive lines.

Some clinicians think that thick bonding agents act as a shock absorber in direct restorations; however, that has not been established in the literature. Instead, when using Prime&Bond elect, a bulk-fill low shrinkage stress composite (such as SureFil SDR flow+) can act as a shock absorber, rather than the bonding system.

For indirect restorations, low film thickness is essential. With a rise in esthetic restorations and increased milling accuracy, the film thickness of the adhesive layer is becoming more critical to allow passive seating of the crown. Today’s crowns and inlays and onlays fit very intimately into the tooth preparation, and with a thick bonding agent, the restoration may not fit anymore.

A very thin system that provides excellent bond strength and doesn’t interfere with the fit of the indirect restoration is critical to success. It is the best of both worlds: not having to work with a thick agent, and achieving high performing bond with thin film thickness. Even if my technique is not perfect, it would still not interfere with the seating of the crown.
Control - **NOT COMPROMISE**

Prime&Bond elect is a one-bottle dental adhesive suitable for all adhesive modes: total-etch, self-etch, and selective-etch.

### WHAT YOU GET
- Can be used in all direct and indirect procedures and in all 3 etching methods for these direct and indirect procedures
- Allows resins to penetrate deep into the dentinal tubules
- Consistently strong bond
- Reduced microleakage and sensitivity
- Micromechanical and chemical bonding for long-term security
- A unique combination of acetone and PENTA (dipentaerythritol penta acrylate monophosphate) monomer technology
- Confidence from dependable long-term clinical results
- Cures clear—no impact on esthetics of the final restoration

### FEATURES
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<th>BENEFITS</th>
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<tr>
<td><strong>UNIVERSAL ADHESIVE</strong></td>
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<td>Gives you the ability to decide which etching technique is appropriate chairsider and it streamlines inventory by providing technique flexibility in a single bottle.</td>
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<td><strong>LOW FILM THICKNESS</strong></td>
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<td>Less tendency to pool in the corners of the proximal box of a Class II. Thick adhesives that pool show up as translucent areas on the radiograph, which can easily be misdiagnosed as a void, gap, or secondary decay, causing you to question whether you should redo the restoration.</td>
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<td><strong>HIGH AND CONSISTENT BOND STRENGTHS</strong></td>
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<td>Confidence that regardless of the etching technique you choose, the performance of the material will not be compromised</td>
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"Prime&Bond elect was created to perform exceptionally well even in less-than-ideal situations”

- Goodchild
The universal adhesive that’s more than strong.

Prime&Bond elect®
Universal Dental Adhesive

Think beyond the bond. Prime&Bond elect® universal dental adhesive with clinically proven PENTA (dipentaerythritol penta acrylic monophosphate) resin technology chases away water, enabling a strong bond with less sensitivity.

- All indications, all etching methods
- Low film thickness
- Spreads evenly
- Cures clear
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See How Prime&Bond Elect’s Solvent Performs