

### 53-10 Syntac SC Dentin Bonding Agent (Project 97-06) (10/97)

Syntac SC bonding agent is a light-activated, multi-use, "single-component" dentin bonding agent recommended by Vivadent for "bonding composite and compomers to dentin." Specifically, Vivadent lists the following indications for its use: bonding of direct restorations; bonding composite to enamel, dentin, base metals, silanized porcelain, amalgam, composite; and bonding compomers to enamel, dentin, and compomer repair. The kit contains one 5-g bottle of Sytac SC, one 2-g syringe of 37% phosphoric acid etchant, syringe tips, a plastic brush handle, disposable brush tips, and instruction cards. According to Vivadent, Syntac SC is water based, and, therefore, does not have to be used specifically with a wet technique because the bonding agent itself moistens the tooth structure. According to the manufacturer, Syntac SC contains (by weight) 43.6% hydroxyethyl methacrylate (HEMA), 46% deionized water, 6% modified polyacrylic acid, 3% maleic acid, 1.3% catalysts and stabilizers, and 0.1% fluoride.



To use the product for routine direct composite bonding, the etchant is applied for 15 seconds to enamel and dentin. It is then removed by thorough rinsing and the tooth structure is lightly dried but not desiccated. A brush is used to scrub the bonding agent into the dentin for 10 seconds. The bonding agent is left undisturbed for 20 seconds, then dried lightly with air around the periphery of the bonded surface. When the material has visibly thickened, a strong blast of air is directed onto the surface to disperse the remaining adhesive. The material is then light cured for 20 seconds. A second coat of Syntac SC is applied, immediately dried, and light activated for 20 seconds. After placement of the second coat, the treated dentin should appear shiny. If it appears dull, another coat of the bonding agent is applied.

#### **Manufacturer:**

Ivoclar North America, Inc.  
175 Pineview Drive  
Amherst, NY 14228  
(800) 533-6825  
(716) 691-0010  
(716) 691-2285 FAX

#### **Suggested Retail Price:**

\$89.00 Syntac Single-Component, Introductory Package.  
one 5-g bottle of Sytac Single-Component.  
one 2-g syringe of 37% phosphoric acid etchant.  
disposable syringe tips.  
one plastic brush handle.  
disposable brush tips.  
instruction cards.

#### **Government Price:**

\$38.00 Syntac Single-Component, Introductory Package (product contents as listed above).

#### **ADVANTAGES:**

- + Bond strength measured by DIS compares favorably with multi-component bonding agents.
- + Product bonds as effectively to moist dentin as to dry (but not desiccated) dentin.
- + Expiration date and lot number are stamped on each component in kit.
- + Recommended temperature range for storage is listed on outside of box.
- + Etchant is used to simultaneously condition enamel and dentin, which simplifies the etching process.
- + Is provided with Material Safety Data Sheets (MSDS).
- + Is provided with a user-friendly, laminated instruction card and booklet that is almost entirely graphics based.

- + Odor not offensive to patients.
- + Excellent packaging configuration.
- + Easy to use dispensing system.
- + Simple and straightforward application process.

**DISADVANTAGES:**

- Is not an all-inclusive bonding product; does not contain hydrofluoric acid, opaquer, and silane solution discussed in product instructions for porcelain repair.
- For routine enamel/dentin bonding, the product takes longer to apply than many currently- available "one-component" and multi-component bonding agents.
- Written instructions can be confusing because of poor syntax and lack of detail.
- May not contain adequate number of syringe tips and applicator brushes.

**SUMMARY AND CONCLUSIONS:**

Syntac SC is a one-bottle bonding product that clinicians found straightforward to use. Although it is advertised as a "Single-Component" bonding agent, its application requires enamel and dentin etching with a 37% phosphoric acid prior to placement. The Syntac SC Adhesive, however, does simplify the application process because it is both primer and adhesive in one bottle. The product has a wide range of clinical uses and comes with a booklet of summarized instructions that is complete. Although the bond strength measured in this evaluation for Syntac SC (16.1 MPa) was slightly lower than values reported by Vivadent (18 MPa, 22.1 MPa), it was acceptable and, in fact was comparable to values measured for other bonding products. Because the product can be used on dry dentin and on moist dentin without adverse effect on its bond strength, clinicians have a choice in this regard. One of the main shortcomings of Syntac SC is that it is not an all-inclusive product. Although Vivadent recommends it for a wide range of bonding procedures, it does not contain all components necessary for all of its clinical usage. Another shortcoming identified with Syntac SC is that application time is not only longer than other one-bottle systems but also many multi-component dentin bonding systems. Syntac SC is comparable in cost to other currently-popular bonding products. **Syntac Single-Component** is rated **Acceptable** for use by the federal dental services.