

THE DENTAL ADVISORTM

"Improved Patient Care Through Research"



Photography by John W. Farah, D.D.S., Ph.D., Ann Arbor, Michigan

Esthetic Resin Cements for All-ceramic Restorations

Dentists offering all-ceramic veneers, crowns, and bridges to patients are faced with many cementation options. Although the newer high-strength ceramic restorations can be cemented with traditional cements, many all-ceramic restorations require bonding with esthetic or adhesive resin cements. Esthetic resin cements are tooth-colored or translucent and are based on diacrylate resin. They require a bonding agent for adhesion to tooth structure and separate primers for bonding to ceramic substrates.

This issue of THE DENTAL ADVISOR discusses and rates 12 esthetic resin cements for all-ceramic restorations and gives clinical tips for using these cements.

2005

Vol. 22, No. 10
December

ESTHETIC RESIN CEMENTS FOR ALL-CERAMIC RESTORATIONS 2

CLINICAL EVALUATIONS

EXACTA Cement XTRA 6
(Temporary cement)

GRADIA DIRECT LoFlo 6
(Flowable composite)

O-Bite 7
(Bite registration material)

Lines 8
(Waterline disinfectant)

PulpOut Bur 8

SYNERGY Nano Formula 9
(Nano-hybrid composite)

TempoSIL 10
(Temporary cement)

The Wedge 10
(Interdental wedge)

EDITORS' CHOICE

EQUIPMENT
G-Light 11
(LED curing light)

PRODUCT
Oraqix 12
(Topical anesthetic)

EDITORIAL

THE DENTAL ADVISOR Vision 4

Ratings

Excellent	+++++
Very Good	++++
Good	+++

EDITORS

John W. Farah, D.D.S., Ph.D.
John M. Powers, Ph.D.

ASSOCIATE EDITORS

William A. Gregory, D.D.S., M.S.
Peter Yaman, D.D.S., M.S.
Lori K. Brown, D.D.S.
Santine E. Anderson, D.D.S.
Charles I. McLaren, D.D.S., M.S.
John D. McLaren, D.D.S., M.S.
Larissa K. Bishop, D.D.S.

ASSISTANT EDITORS

Kenneth Stoffers, D.M.D., M.S.
Mert N. Aksu, D.D.S., J.D., M.H.S.A.
Mark T. Waranowicz, D.D.S., M.S.
Darren R. Marsh, D.D.S.
William T. Stevenson, D.D.S.
Robert Stevenson, D.D.S.
Nizar Mansour, D.D.S.

ADVISORY BOARD

John O. Burgess, D.D.S., M.S.
Gerard Kugel, D.M.D., M.S.
Karl F. Leinfelder, D.D.S., M.S.
John A. Molinari, Ph.D.
Frederick A. Rueggeberg, D.D.S., M.S.
Edward J. Swift, Jr., D.M.D., M.S.
Charles W. Wakefield, D.D.S.

CREATIVE DIRECTOR

Lynn St. Pierre

EDITORIAL GROUP MANAGERS

Annette M. Frederick
Stephanie D. Farquhar

ADMINISTRATIVE STAFF

Kathryn L. Jackson
Tricia G. Price
Samantha Baker

PUBLISHER

Dental Consultants, Inc.

SUBSCRIPTION INFORMATION

\$99 one year/10 issues
\$187 two years/20 issues
\$258 three years/30 issues
Canada add \$10 per year
Airmail overseas add \$20 per year

Please send inquiries and address changes to: **THE DENTAL ADVISOR**, 3100 W. Liberty, Suite B, Ann Arbor, MI 48103

Call: 800.347.1330 • 734.665.2020
Fax: 734.665.1648
Email: info@dentaladvisor.com
Website: www.dentaladvisor.com

No unauthorized duplication or reprints may be made. Inquiries concerning duplication may be directed to the publisher. Copyright ©2005, Dental Consultants, Inc. All rights reserved. Printed in the U.S.A. (ISSN 0748-4666) by University Lithoprinters.

Esthetic Resin Cements for All-ceramic Restorations

The selection of cement for an all-ceramic restoration depends on many factors, including the type of restoration, the type of ceramic, its translucency, its ability to be etched, and the required strength of the luting agent.

Esthetic resin cements are tooth-colored or translucent and are available in many shades. These cements may be packaged in auto-dispensed syringes or standard syringes. Some may be dual-cured cements with catalysts. Among the dual-cured cements, the light- and dual-cured modes typically are stronger and more rigid than the self-cured mode (*see Table on page 4*). Many of the esthetic resin cement kits include try-in pastes that are precisely formulated to match the corresponding shade of cement.

Definitions

Traditional all-ceramic restorations (*Cerpress SL/Leach & Dillon, IPS Empress/ Ivoclar Vivadent*) – traditional porcelain or translucent all-ceramic materials; easily etched; must be bonded with silane primer, bonding agent and resin cement

High-strength all-ceramic restorations (3G/Zahn, 3M ESPE Lava Crowns and Bridges) – cores made of zirconia or alumina, typically not etchable and cannot be bonded; cemented with traditional crown and bridge or dual-or self-cured resin cements

Ideal Kit Contents

- 3-5 shades, clear and opaque shades
- Viscosity – low and medium-high
- Try-in pastes with matching shades
- Etchant – hydrofluoric acid gel
- Bonding agent
- Silane primer

Clinically Relevant Properties of Esthetic Resin Cements

Viscosity – low viscosity is desirable for bonding of crowns, inlays and onlays; medium viscosity is desirable for veneers.

Working time – important for multiple units, light-cured mode provides more working time.

Bonding to enamel and dentin – separate 4th- or 5th-generation bonding agent required.

Color change on curing – no shade shift after curing is ideal.

Color stability – ideally material should not become darker or more chromatic with aging.

Flexural strength – high strength (>100 MPa) provides better retention than traditional cements.

Flexural modulus – high rigidity (>6 GPa) minimizes flexing and debonding of bridges.

Film thickness – value between 5 and 25 μm is desirable, excessive film thickness can affect the fit and occlusion of well-fitting restorations.

Solubility – low solubility in oral fluids desirable.

Water sorption – low water sorption minimizes expansion of cement and possible cracking of all-ceramic crowns.

continued on page 4

Product	Company	Bonding Agent	Type of Cure	Delivery System	Working Time, min	Shades	Flexural Strength, MPa	Flexural Modulus, GPa	Cost per ml	Clinical Rating
3M ESPE RelyX Veneer	3M ESPE	3M ESPE Adper Single Bond Plus	LC	Syringe	unlimited without light	A1, A3, A5, B0.5, translucent, white opaque	120	6.6	Kit: \$48.78/ml, Refill: \$32.20/ml	98%
Bistite II DC	Tokuyama Dental/J. Morita	Primer 1 A & B, Primer 2	LC/DC	Dual-barreled syringe – paste/paste	4 .0	Clear, dentin, ivory	DC-91, SC-56	DC-10, SC-7.1	Kit: \$48.42/ml, Refill: \$22.82/ml	91%
Calibra	DENTSPLY Caulk	Prime & Bond NT Dual Cure System	DC/LC/SC	Syringe – paste/paste	2.5	Dark, light medium, opaque, translucent	DC-114, LC-114, SC-102	DC-7.3, LC-5.1, SC-6.4	Complete Kit: \$58.86/ml; Operator Kit: \$51.64/ml; Refill Base: \$42.32/ml; Refill Catalyst: \$42.32/ml	91%
Choice	Bisco	One-Step Plus	DC/LC	Syringe – paste/paste	4.0	A1, A2, A3, B1, B3, C2, D2, opaque, translucent	nt	nt	Kit: \$10.14/ml; Refill Base: \$9.67/ml; Refill Catalyst Paste: \$9.67/ml; Refill Catalyst Liquid: \$5.33/ml	na
Illusion	Bisco	One-Step Plus	DC/LC/SC	Syringe – paste/paste	2.0	Clear, milky, opaque	DC-105, LC-91, SC-94	DC-8.5, LC-5.5, SC-7.4	Kit: \$20.98/ml; Refill Base: \$12.59/ml; Refill Catalyst: \$12.59/ml	90%
Insure	Cosmedent	PowerBond	DC	Syringe – paste/paste	8.5-10	Clear, grey lite, pink opaque, white opaque, yellow opaque, yellow-red lite, yellow-red universal	nt	nt	Regular Kit: \$28.74/ml; Refill Base: \$31.96/ml; Refill Catalyst: \$31.96/ml	91%
Lute-It! Esthetic Luting System	Pentron Clinical Technologies	Bond-1	DC/LC/SC	Syringe – paste/paste	2.5	Clear, dark, dark yellow, grey, light, light yellow, opaceous universal, opaceous white, universal	DC-104, LC-102, SC-104	DC-7.6, LC-4.3, SC-7.1	Kit: \$10.00/ml; Refill Base: \$8.38/ml; Refill Catalyst: \$8.38/ml	97%
Nexus2 Universal Dual Syringe	SDS Kerr	Optibond Solo Plus	DC/SC	Auto-mix syringe with mixing tip	3.5	Clear	DC-155, SC-127	DC-6.8, SC-6.0	Kit: \$19.26/ml; Refill: \$25.35/ml	92%
Nexus2 Universal Luting System	SDS Kerr	Optibond Solo Plus	DC/LC/SC	Syringe – paste/paste	3.5	Brown, clear, white, white opaque, yellow	nt	nt	Kit: \$33.58/ml; Refill Base: \$40.92/ml; Refill Catalyst: \$40.92/ml	96%
Variolink II	Ivoclar Vivadent	Excite	DC/LC	Syringe – paste/paste	3.5	Bleach XL, brown, transparent, white, white opaque, yellow	DC-122, LC-129, SC-104	DC-8.3, LC-8.2, SC-6.6	Esthetic Kit: \$33.23/ml; Standard Kit: \$23.74/ml; Refill Base: \$49.92/ml; Refill Catalyst – \$49.92/ml	96%
Variolink Veneer*	Ivoclar Vivadent	Excite DSC	LC	Syringe	2.0-3.0	7 values: HV+1, HV+2, HV+3, Med V, LV-1, LV-2, LV-3	63	4.3	Kit: \$56.66/ml; Refill Cement: \$45.33/ml	97%
Vitique	Zenith Dental/DMG	Contax	DC/LC	Auto-mix syringe with mixing tip or ribbon tip	2.0	A1, A2.5, A4, B1, bleach light, pink, transparent, white	nt	nt	Intro Kit: \$30.80/ml; Starter Kit: \$40.36/ml; Refill Base: \$33.48/ml; Refill HV Catalyst: \$81.38/ml; Refill LV Catalyst: \$89.95/ml	ce

*Previously sold as **Appeal Anterior**
DC = dual-cured, LC = light-cured, SC = self-cured
na = not available, nt = not tested, ce = currently evaluating

EDITORS' NOTES: Only products evaluated by THE DENTAL ADVISOR will have a rating listed, and are eligible for listing as a recommended product. Some table information provided by manufacturers. Costs are listed for comparison only and are not used to calculate the ratings.

Clinical Hints

Cementation Procedure

- Select the shade using a cured cement or matched try-in paste.
- Follow manufacturer's recommendations for etching, bonding and cementation.
- Bonding requires strict isolation to avoid contamination.
- Do not overdry the tooth – moisten with water if needed.
- Thin the bonding agent with a stream of air to remove the solvent and to minimize pooling. Solvent left in the bonding agent can inhibit setting and affect the bond strength of the resin cement. Excess bonding agent may cause restoration to seat poorly or fracture.
- Quick light curing at the margins allows easy removal of excess.

Ceramic Inlays, Onlays, Full Crowns

- Must use dual- or self-cured resin cements to ensure complete cure; bonding agent must be compatible with a dual- or self-cured system.
- Silane primer is a wetting/coupling agent that maximizes the bond between the ceramic and resin cement. Note – silane products mixed by the dentist have a limited shelf life. Stabilized silane primers are premixed and have a long shelf life.
- Etch internal surface of traditional all-ceramic restorations with hydrofluoric acid (laboratory); internal surface of high-strength ceramic restorations cannot be etched.

Flexural Strength (MPa) of Dual-cured Resin Cements

Cement	Light-cured	Dual-cured	Self-cured
Bistite II DC	—	91	56
Calibra	114	114	102
Illusion	91	105	94
Lute-It! Esthetic Luting System	102	104	104
Nexus2 Universal Dual Syringe	—	155	127
Variolink II	129	122	104

Ceramic Veneers

- Can use either light- or dual-cured resin cement.
- Must use a ceramic primer (silane).
- Etch internal surface of veneer with hydrofluoric acid (laboratory).
- Try-in pastes can be removed with water or alcohol without affecting bond strength of cement to veneer.
- For veneers thinner than 1.25 mm, light cure bonding agent and resin cement at the same time. For veneers thicker than 1.25 mm, light cure the bonding agent before applying the resin cement.

Adjuncts to Cementation

- **Optura Gate/Ivoclar Vivadent** – use to provide improved access to preparation
- Serrated strips – **CeriSaw/Den-Mat** – use to remove excess set cement
- **Odyssey Diode Soft Tissue Laser/Ivoclar Vivadent** – use uninitiated mode to stop bleeding instead of packing, if area is small

THE DENTAL ADVISOR Recommends:

3M ESPE RelyX Veneer (98%), Lute-It! Esthetic Luting System (97%), Variolink Veneer (97%), Nexus2 Universal Luting System (96%), Variolink II (96%)



3M ESPE RelyX Veneer
(3M ESPE)



Variolink Veneer
(Ivoclar Vivadent)



Variolink II
(Ivoclar Vivadent)

Cementation Steps for All-ceramic Restorations

- Anesthetize.
- Remove temporary and clean tooth – do not pumice unless preparation is stained.
- Isolate – pack #00 cord when needed.
- Try in restoration – use try-in paste for improved retention. If satisfied with fit and esthetics, rinse vigorously and dry internal surface of restoration. Cleaning the internal surface of the restoration with phosphoric acid will dissolve any impurities.
- Apply silane primer to the restoration, then gently air dry.

- Apply to the restoration a thin layer of bonding agent. Gently air dry. Light cure unless using a dual-cured bonding agent.
- Etch tooth as recommended by the manufacturer of the bonding agent – current bonding agents bond best to a moist tooth surface.
- Apply bonding agent to tooth, thin with air and light cure – if using a dual-cured bonding agent, do not light cure until the restoration is cemented.
- Mix dual-cured resin cement, load restoration and seat.
- Light cure for 5-10 seconds, remove excess cement, then post cure for 20-40 seconds from different directions.
- Check occlusion, finish and polish. ■



The editors and staff of **THE DENTAL ADVISOR** are pleased to inform you about our new **Education Center**, scheduled to open in January 2006. This unique resource will meet the needs of dental professionals and dental manufacturers and allow us to expand our mission of **“Improved Patient Care Through Research”** by including *In-house Research* and *Education*.

We have made a commitment to offer dental professionals from around the world opportunities to

expand their knowledge and obtain continuing education credit through lectures and hands-on courses. We have designed the space to accommodate up to 30 attendees, for a more intimate and comfortable classroom experience. Our broad spectrum of high-quality programs will cover the latest topics, answer questions and offer helpful insights into today’s dental materials. Courses will be instructed by a roster of speakers, considered experts in their field.

Manufacturers and vendors in the dental industry can utilize our **Education Center** for regional meetings, focus groups and specialized training of sales representatives. There will be opportunities to sponsor and/or co-sponsor educational courses on a wide variety of topics. The facility will also be made available to professional groups and study clubs.

For more information, please contact **Annette M. Frederick, Director of Education**, at annette@dentaladvisor.com.

EXACTA Cement XTRA + + + + 1/2

Exacta Dental
800.474.7665
www.exactadental.com

Description

EXACTA Cement XTRA is a eugenol-free provisional crown and bridge cement with calcium hydroxide to support the preservation of tooth vitality. It is supplied in either an 11-g auto-mix syringe with 10 mixing tips, which was evaluated in this study, or a 120-g cartridge (fits standard 1:1 dispensing guns) with 25 mixing tips. The material has a working time of 1-1.5 minutes and final set will take place in 2-3 minutes. **EXACTA Cement XTRA** should be stored at or below 24° C (75° F). Twenty-two consultants used **EXACTA Cement XTRA** in over 250 procedures. This product received an 93% clinical rating.

Suggested Retail Cost

- \$24.95/11-g auto-mix syringe kit
- \$95.95/120-g cartridge kit



Consultants' Comments

- ▶ *"This is the best new product I have tried in a long time."*
- ▶ *"Easy to dispense and clean up."*
- ▶ *"The viscosity is perfect for temporary cement, great for implant cases."*
- ▶ *"The setting time is very fast for multiple units."*
- ▶ *"The mixing tips seem to waste quite a bit of material."*
- ▶ *"The plunger fits loosely and falls out of the syringe barrel."*
- ▶ *"Need more mixing tips in the package."*

Product Features

The 11-g dispensing system is small and fits conveniently in a drawer or on a tray. The material flows easily through the smaller tips of the auto-mix syringe with moderate pressure during dispensing. The set cement is firm with no oily residue. The non-eugenol formulation does not affect the setting of resin-based luting and provisional materials. Consultants liked the auto-mix dispenser, easy clean up, and the successful retention of provisional restorations. Ninety-six percent of consultants rated **EXACTA Cement XTRA** equivalent to or better than their current temporary cement. Seventy-three percent of consultants would switch to **EXACTA Cement XTRA** and 82% would recommend it to colleagues.

Clinical Tip

- Before use, express a small amount of both catalyst and base from the auto-mix syringe; then attach a mixing tip to ensure proper dispensing of material. ■

O-Bite + + + + 1/2

Zenith Dental/DMG
800.662.6383 • 201.894.5500
www.zenithdental.com

Description

O-Bite is a vinyl polysiloxane bite registration material. It is designed to be firm for easy trimming but has flexibility to resist locking into undercuts. The material is dispensed from a 50-ml, dual-barreled cartridge for use with a standard Type 50, 1:1 dispensing gun. Auto-mix tips included in the standard kit are designed to reduce material waste. Working time is 30 seconds, with a 90-second set time in the mouth. **O-Bite** is available in an orange color and scent and has a neutral taste. Each kit contains four, 50-ml cartridges of material plus 15 mixing tips. Twenty-nine consultants evaluated **O-Bite** for 315 procedures. This product received a 92% clinical rating.

Suggested Retail Cost

- \$96.00/kit

Product Features

O-Bite received very good ratings in all categories evaluated. In particular, the most-liked features included the ease of application, the pleasant scent



Consultants' Comments

- ▶ *"Easy placement on teeth compared with other bite registration materials."*
- ▶ *"Good detail and easy removal."*
- ▶ *"Working time is good, but I would prefer a faster set time."*
- ▶ *"Brittle-thin sections break apart."*

and lack of taste, the rigidity, and the detail of the bite impression. The viscosity of the material was also well-received. The material stays on the teeth when dispensed and is not runny. Ease of removal of the set material was found to be excellent. Material rigidity and tear resistance received high marks. Working time was reported as excellent. Additionally, most consultants appreciated the moderate setting time, although some preferred a faster-setting material. Overall, 90% of the consultants found **O-Bite** to be equivalent to or better than their current bite registration material. Fifty-four percent indicated that they would switch to **O-Bite**, and 81% would recommend the product to a colleague. ■

GRADIA DIRECT LoFlo + + + + 1/2

GC America, Inc.
800.323.7069 • 708.597.0900
www.gcamerica.com

Description

GRADIA DIRECT LoFlo is a high-viscosity, low-shrinkage flowable composite. The material is also a radiopaque, light-cured, micro-hybrid composite that contains fluoride. Utilizing high-density, pre-polymerized filler technology,



Consultants' Comments

- ▶ *"Easy to polish and makes restoring Class V restorations much faster."*
- ▶ *"Stays exactly where you place it."*
- ▶ *"Composite adapts well to the tooth, enhancing blending and esthetics."*
- ▶ *"Excellent for small Class I restorations."*
- ▶ *"Ideal for restoring primary teeth."*
- ▶ *"Requires more pressure to express material from the syringe."*

GRADIA DIRECT LoFlo is designed to have increased durability, polishability, radiopacity, and reduced shrinkage as compared to other flowable composites. **GRADIA DIRECT LoFlo** is a multi-purpose composite, indicated for use in many situations, including restoration of small Class I and shallow Class V restorations. It is also indicated for restoration of deciduous teeth, due to its resistance to wear. Each kit includes two, 1.3-g syringes of composite with four applicator tips, in any of seven shades - A1, A2, A3, A3.5,

A03 (opaque dentin), CV (cervical shade), and BW (bleach white). Twenty-five consultants evaluated **GRADIA DIRECT LoFlo** in over 500 uses. This product received a 95% clinical rating.

Suggested Retail Cost

- \$37.00/kit

Product Features

Consultants found **GRADIA DIRECT LoFlo** to be useful for select applications because of its high viscosity, and they rated the stackability and viscosity as excellent. Many emphasized the benefit of using this material in Class V restorations because of its shade match and its ability to stay where placed. The higher viscosity of **GRADIA DIRECT LoFlo**, as compared to other flowable composites, allows the material to maintain its position in proximal boxes and

on facial surfaces. Many consultants commented that this material would be a great adjunct along with more traditional flowable composites. Eighty-four percent of consultants would recommend **GRADIA DIRECT LoFlo** to a colleague, while 88% rated it equivalent to or better than their current flowable composite.

Clinical Tips

- The increased stackability and fluoride release of **GRADIA DIRECT LoFlo** make it excellent for placement in proximal boxes of Class II restorations.
- Use it to repair provisional restorations. ■

Editors' Note: **GRADIA DIRECT Flow** is available for use in applications requiring a less viscous flowable composite.

SENIOR CLINICAL CONSULTANTS

E. Alpert, CT
R. Anthony, OH
K. Baker, TX
R. Ciccone, MI
P. Esmond, NY
M. Evans, TN
R. Fisher, OH
G. Franco, NY
P. Grandsire, NY
K. Hamlett, TX
G. Hart, OH
R. Kaprielian, NJ
E. Katkow, MD
L. Katkow, MD
C. Kehr, MI
E. Maitland, NJ
E. Mosso, PA
G. Mosso, PA
D. Peterson, MD
V. Plaisted, NY
W. Powell, TX
G. Poy, MI
G. Sayre, TX
K. Schwartz, FL
B. Shumaker, NJ
B. Sims, NY
A.M. Thompson, NY
R. Trushkowsky, NY
L. Wee, MI

CLINICAL CONSULTANTS

A. Abate, MI
M. Aksu, MI
A. Alexander, PA
J. Allen, MI
J. Amara, CT
R.M. Arnett, MI
R. Averbach, CO
A. Azrak, NY
M. Bannan, MI
D. Barnes, MD
F. Berman, PA
M. Beyramian, MI
L. Bishop, MI
J. Bostic, OH
D. Bowen, MI
E. Bowser, PA
H. Bowser-Sletten, PA
R. Bozell, MI
M. Braverman, NY
L. Brinhall, MT
M. Briskin, NY
C. Brown, LA
W. Browncombe, MI
H. Buckwald, NJ
J. Bush, PA
H. Cadorette, MI
Z. Campbell, MI
P. Campo, NY
M. Chaben, MI
D. Chacko, TN
S. Cheff, TX
R. Cherry, FL
P. Chiaravalli, MI
T. Chuang, NJ
A. Colarusso, NY
M. Conrad, PA
M. Cooks, MI
K. Dancy, GA
M. Danner, IL
J. Dingman, WI
J. DiPonziano, NJ
R. Donelli, NY
R. Dost, VA
J. Doueck, NY
M. Dwoskin, MI
M. Eannaccone, NY
B. Eggart, AR
R. Engle, IL
K. Fairbanks, MI
T. Faiver, MI
R. Fay, TX
N. Fehmi, MI

Lines + + + + 1/2

Zenith Dental Products/DMG
800.662.6383 • 201.894.5500
www.zenithdental.com

Description

Lines is a chlorhexidine (0.12%)- and ethyl alcohol (8.5%)-based solution for disinfection and reduction of biofilm in dental unit water lines. The solution is blue in color and has a light-mint scent. **Lines** can be used full-strength once a week or continuously during hygiene scaling and all other dental procedures. The ready-to-use, half-liter bottle can be attached directly to the self-contained water systems of most dental units. The solution will not corrode dental units or stain or clog valves. **Lines** does not interfere with bonding and contains no caustic or carcinogenic agents. **Lines** is available in cases of 10, 500-ml bottles or a 6-liter “Bag in a Box” dispenser. Twenty-five consultants evaluated **Lines** over a one-month period. This product received a 92% clinical rating.

Suggested Retail Cost
• \$103.25/case of 10 bottles

Product Features

Lines is a unique, ready-to-use solution for dental line disinfection or for continuous disinfection during dental treatment. The product was highly rated for its ease of use and pleasant scent. The packaging earned the consultants’ highest rating, and **Lines** ready-to-use, screw-on bottles were easy to incorporate into the consultants’ office routines.



Consultants’ Comments

- ▶ “Easy to use – just screw on to the dental unit.”
- ▶ “Pleasant scent and tastes good.”
- ▶ “Does not cause staining like chlorhexidine mouthwashes.”
- ▶ “Can be used continuously in dental waterlines.”
- ▶ “Directions on bottle are difficult to read.”

Several consultants reported difficulty attaching the bottle directly onto their self-contained water system, although removal of the safety band under the bottle cap helped with this problem. Ten of the 25 consultants would switch and 16 would recommend **Lines**. Eighty percent of the consultants responding reported that **Lines** was equivalent to or better than their current product.

Clinical Tips

- If using **Lines** during scaling procedures, reduce the flow rate to 1/3 of the normal water flow rate.
- Remove the safety collar under the cap before attaching to the dental unit.
- If the **Lines** bottle does not fit onto the dental unit, pour the solution into the unit’s water bottle.
- Avoid use as a rinse in patients on medications (Antabuse/Disulfiram, Metronidazole) that interact with alcohol. ■

SYNERGY Nano Formula + + + + 1/2

Coltène/Whaledent, Inc.
800.221.3046 • 330.916.8800
www.coltenewhaledent.com

Description

SYNERGY Nano Formula is an all-purpose, nano-hybrid resin composite for direct placement of esthetic restorations. It is 59% filled by volume with a particle range of 0.04-2.5 µm. Each **Duo Shade** blends two Vita shades in a single selection to satisfy a wide range of tooth colors with fewer composite shades. The material is packable and has enhanced gloss after polishing. It is available in both 0.25-g single-use capsules and 4-g syringe packaging. **Duo Shade** may be used for teeth requiring either of two colors as measured on a VITA shade guide: A1/D2, A2/B2, A3/D3, A3.5/B3, A4/M5, and C2/C3. A **SYNERGY Nano Formula** shade guide is provided and marked for shade selection. Curing time with a halogen light for 2-mm thick layers is 30-40 seconds, depending upon the shade. The compact set evaluated contains 40, 0.25-g capsules and a shade guide.

Consultants’ Comments

- ▶ “Very user-friendly system.”
- ▶ “Good shade combinations 90% of the time.”
- ▶ “Shade range and packability are highlights of SYNERGY Nano Formula.”
- ▶ “Color-code the unit-dose capsules for easy identification.”

Twenty-seven clinical consultants evaluated **SYNERGY Nano Formula**, placing over 550 restorations. This product received a 91% clinical rating.

Suggested Retail Cost
• \$157.92/compact set

Product Features

SYNERGY Nano Formula worked well in a variety of restorative situations. Characteristics consultants liked most included shade and vitality, packability and final polish. Translucency satisfied many, whereas others felt the material was too opaque for anterior restorations. Handling qualities were good with consultants noting that the material did not slump and sculpted nicely. A difference in the firmness between the syringe composite and that of the unit-dose was noted, with the syringe composite being softer and somewhat stickier. Sixty-eight percent of consultants stated that **SYNERGY Nano Formula** was equivalent to or better than their current product. Forty-six percent of consultants would switch to **SYNERGY Nano Formula**, while 80% would recommend it to colleagues.

Clinical Tips

- Protect open syringes from ambient light.
- Composite from syringes is less firm – more appropriate for anterior use. ■

PulpOut Bur + + +

Essential Dental Systems
201.487.9090
www.edsdental.com

Description

PulpOut Bur is designed to aid in initial endodontic access-opening procedures. The bur is a friction-grip #4 round carbide with a plastic stop fixed at 7 mm. This length has been determined to be a “critical depth” from the cusp tip to the pulp chamber that allows access to the pulp chamber without perforation of the furcation. Included with the **PulpOut Bur** is a diamond shaper bur for widening of the access opening.

Consultants’ Comments

- ▶ “Useful for endodontic access in a tooth with a crown present, as the crown may obscure the anatomy of the tooth.”
- ▶ “Great set-up for one inexperienced with endodontics.”
- ▶ “Make the stopper clear. Right now it blocks my vision of the access.”
- ▶ “The stopper is easily abraded if it touches the surface of the tooth.”

The diamond is non-end cutting in a cylindrical shape in extra-coarse grit. This bur permits rapid removal of tooth structure to enable straight-line access to canals, while preventing cutting, ditching and grooving of the pulp chamber floor. Each introductory kit includes four **PulpOut Burs** and one diamond shaper bur. The refill kit contains 16 **PulpOut Burs** and four diamond shaper burs. Twenty-

three consultants, consisting of both general dentists and endodontists, evaluated the **PulpOut Bur** during 102 uses. This product received a 77% rating.

Suggested Retail Cost
• \$30.00/introductory kit
• \$110.00/refill kit

Product Features

PulpOut Bur efficiently cuts through enamel and dentin. Consultants rated the effectiveness of tooth reduction for both burs as very good. The **PulpOut Bur** working length is often too short and does not achieve access into the pulp chamber, especially in teeth that are highly calcified. Consultants noted that the stopper obstructed the view of the tooth during preparation. A transparent stopper was suggested to improve visibility of the access opening during use.

Seventeen percent of consultants would switch to **PulpOut Bur** while 52% would recommend it to a colleague.

Clinical Tip

- Do not allow shaper bur to prepare the floor of the chamber because it will make subsequent glide paths more difficult to establish. ■

CLINICAL CONSULTANTS

M. Feinberg, NY
L. Feldman, NJ
J. Fine, NJ
K. Fischer, IN
S. Galster, ND
D. Garber, CA
N. Garlisi, OH
L. Gee, OK
A. Giovanardi, MI
J. Glick, MI
B. Goldsmith, NY
I. Goldstein, NJ
K. Goodman, MI
S. Graber, IL
A. Gray, MI
D. Griggs, OH
J. Grover, MI
B. Gursky, MI
E. Gutman, NY
D. Haas, Canada
H. Hamerink, MI
S. Harden, GA
B. Hermann, CA
R. Herwig, KS
M. Hewko, OH
S. Hoekman, MI
S. Hondrum, GA
J. Hoste, MI
M. Hovel, WI
S. Hutt, NJ
P. Indianer, MI
G. Isaacson, NJ
S. Isaacson, NJ
J. Jacobs, NY
J. Jaghab, MI
I.F. Jarjoura, MI
N. Johnson, MN
T. Jowett, KS
C. Kamin, OH
J. Kaminski, MI
T. Kaminsky, PA
D. Kaplan, NY
M. Kastner, OH
S. Kelly, OH
D. Keren, NY
J. Kim, NY
B. Klym, MI
J. Kostohryz, TX
J. Kotapish, OH
J. Kotnour, WI
M. Kruscke, MI
M. LaMarche, WA
F. Leal, VA
M. LeVasseur, MI
S. Lever, MD
I. Levine, NY
R. Lezell, MI
R. Lieder, MI
M. Livernois, FL
J. Lockwood, MI
M. Lodge, MI
M. Man, NY
B. Manne, FL
N. Mansour, MI
N. Markarian, CA
D. Marsh, MI
M. Mason, NY
R. Mason, NY
W. Mason, MI
J. Mayer, OH
J.R. Meagher, NY
J. Mikesell, IL
C. Miller, PA
S. Miller, NV
R. Mizrahi, NY
L. Montes, NY
D. Montgomery, CA
P. Moratto, MD
M. Morin, MI
S. Munro, WI
W. Nagy, TX
J. Nash, MI
A. Nazarian, MI
N. Nealis, IL

TempoSIL + + + +

Coltène/Whaledent, Inc.
800.221.3046 • 330.916.8800
www.coltenewhaledent.com

Description

TempoSIL is an addition-cured, silicone-based temporary cement with zinc oxide and silane, which is intended to improve retention and marginal integrity. The cement is supplied in a 5-ml auto-mix syringe for direct placement into the provisional restoration. Working time is 50 seconds, and setting time is two minutes. **TempoSIL** remains slightly elastic when set, which eases removal of residual cement. Twenty-seven consultants used **TempoSIL** in over 300 procedures. This product received an 86% clinical rating.



Consultants' Comments

- ▶ *"Easy to use and great to clean up."*
- ▶ *"Good for multiple crown and bridge units."*
- ▶ *"Accelerate setting time and increase retention."*

1. Directly applied into provisional.
2. Excess is easily peeled off provisional and tissue.
3. Old cement is easily removed for re-cementation.

Suggested Retail Cost
• \$29.95

Product Features

Consultants reported that the most remarkable feature of **TempoSIL** was the easy clean-up. The silicone-based material leaves no residue on the tooth after removal of the provisional restoration. The non-eugenol formula was also a highly-rated feature; 65% of consultants preferred non-eugenol temporary cement such as **TempoSIL** for its compatibility with resin-based cores and cements. The convenient auto-mix syringe provides fast, neat dispensing. Setting time was noted to be longer than desirable. Retention of provisional restorations cemented with **TempoSIL** was inconsistent with ratings from good to excellent. Sixty-nine percent of consultants found **TempoSIL** equivalent to, or better than, their current temporary cement. Fifty-four percent would switch and 72% would recommend it to a colleague.

Clinical Tips

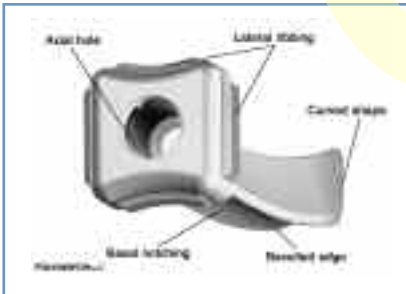
- Leave the used mixing tip on the syringe during storage.
- Bleed the syringe upon initial use.
- **TempoSIL** may be dispensed on a mixing pad and hand-mixed for 20 seconds if desired. ■

The Wedge + + + +

POLYDENTIA SA
+41.91.946.2948
www.polydentia.com

Description

The Wedge is a disposable, interdental wedge for use during restorative procedures. It is compatible with various matrix systems. The translucent plastic wedges are available in four sizes which are color coded by size: extra small (blue), small (green), medium (yellow), and large (white). The assortment box contains 30 each of the extra-small and small wedges and 20 each of the medium and large wedges. The head of the wedge



Consultants' Comments

- ▶ *"Easy to use."*
- ▶ *"I liked the color-coding and size selection."*
- ▶ *"The translucency allows for some light transmission through the wedge."*
- ▶ *"There is a learning curve to proper wedge selection at placement."*

is square with an axial hole and lateral ribbing for gripping. The parallel shape with basal notching is designed to ensure maximum wedging effect. Twenty-three consultants evaluated **The Wedge**. This product received an 88% clinical rating.



G-Light + + + + 1/2

GC America, Inc.
800.323.7063 • 708.597.0900
www.gcamerica.com

Description

G-Light is a rechargeable, cordless, LED curing light. It emits light in the 390-550-nm range, with peaks at 465-475 and 400-420 nm. Light output is reported at 1200 mW/cm2. The unit is the first cordless LED to emit light that can cure materials containing both CQ- and PPD-based photo-initiators. **G-Light** is silent and fanless. It features continuous and 5-, 10-, 20-second timing options on the back of the unit. A battery life display is also found on the back. If not used for more than two minutes, the power source automatically switches off. Normal charging time for the battery is two hours. In an emergency, a five-minute charge will produce 13, 10-second irradiations and a 10-minute charge will produce 35, 10-second irradiations. The unit evaluated includes one battery, a battery charger with power cord and five anti-glare cones. A protective light shield and a handpiece cradle are optional. The cradle has a sturdy metal base with an ergonomic sling-shaped design. Fifteen consultants used and evaluated **G-Light** over a three-month period for their complete light-curing needs. This product received a 92% clinical rating.

Suggested Retail Cost
• \$1,350

Suggested Retail Cost
• \$22.00/assortment box of 100 wedges

Product Features

The Wedge received good to excellent overall ratings in all categories evaluated. Color-coding makes it easy to identify wedges by size. The square head and axial hole of the wedge make it easy to grasp with cotton pliers. The smooth surface and anatomical design allow for easy insertion between the teeth. The shape provides good cervical adaptation of the matrix band. As some consultants had difficulty with **The Wedge** slipping, it is essential that the proper size be



Consultants' Comments

- ▶ *"Easy to activate and very quiet."*
- ▶ *"Cures all of my materials."*
- ▶ *"Light stands on the counter when not in the cradle."*
- ▶ *"Battery is easy to change."*
- ▶ *"It can be difficult to get to some posterior areas."*
- ▶ *"The hand grip is long and heavy."*
- ▶ *"Include a second battery."*

Equipment Features

Approximately two-thirds of consultants who evaluated **G-Light** were using an LED light in their office. They rated quality of cure as excellent for all bonding agents, composites, sealants and cements used. **G-Light** is convenient to disinfect and is easily portable from operator to operator. Although the unit only comes with one battery, an additional battery pack is available for purchase. The most-liked features of **G-Light** were the portability, quiet operation, ease of activation, and accessibility of the buttons. The least-liked feature was the limited access for curing materials in posterior areas of the mouth. The unit is slightly heavier than many other LED lights, yet is well balanced. Sixty-seven percent of consultants found **G-Light** to be equivalent to or better than their current curing light. Sixty-four percent indicated that they would switch to **G-Light** from their current curing light and 77% would recommend it to a colleague. ■

selected to avoid movement of the wedge. Excellent contacts were achieved using **The Wedge**. Sixty-eight percent of consultants rated **The Wedge** equivalent to or better than the wedge they were currently using. Fifty-three percent would recommend **The Wedge** to a colleague.

Clinical Tip

- The wedge has to show a noticeable resistance, when placed. ■

CLINICAL CONSULTANTS

L. Neuberger, ND
C.J. Noe, MD
E. Odenweller, OH
R. Oshrain, NY
J. Paris, TX
D. Parris, GA
D. Parsons, NY
M. Patel, MI
T. Paumier, OH
L. Perratto, NY
S. Picazio, NJ
T. Pieper, WY
D. Pietz, NC
W. Piskrowski, MI
D. Pitak, MI
S. Pomerance, MI
D. Powers, MI
L. Pozarny, NY
C. Price, TX
D. Qualliotine, NC
G. Raichelson, Canada
S. Ratner, NY
R. Reichl, NC
G. Reskakis, NY
C. Rice, MA
J. Riggs, MI
R. Ritter, FL
M. Rogers, PA
W. Roper, TX
F. Ross, WI
K. Ross, MI
K. Rowan, MO
R. Sambuchi, MI
A. Sandak-Albright, NY
P. Sandvick, WI
D. Schimmel, PA
G. Schultz, PA
J. Sedlock, WI
R. Shah, MI
M. Shapiro, MI
J. Shea, MO
J. Sinkwits, MI
T. Slade, MI
R. Smith, NY
S. Smith, FL
M. Sonne, MI
J. Spingarn, FL
D. Stutman, NY
K. Swearingen, OH
M. Sylvester, CA
P. Symeonides, NY
J. Tabash, MO
H. Tetelman, OH
F. Tom, MA
R. Tonelli, WI
G. Trompeter, MI
C. Trubschenck, CA
P. Tu, CA
S. Ura, NH
J. Utess, MI
H. Vann, MS
J. Van Tiem, MI
W. Walcott, MI
L. Walsh, MI
M. Waranowicz, MI
M. Warshanna, MD
R. Wilkie, MI
S. Williams, MO
R.G. Willis, SC
K. Wilson, MI
R. Wolf, IN
F. Wood, PA
H. Yeung, CA
D. Young, MI
S. Young, NY
M. Zahn, MI
P. Zanetti, MI
G. Zann, FL
S. Zimmer, MI

LABORATORY CONSULTANTS

Alpha Dental Studio, MI
Nellmar Laboratory, LLC, MI

DENTSPLY Pharmaceutical
800.225.2787
www.oraqix.com

Description

Oraqix is a 2.5% lidocaine/2.5% prilocaine anesthetic solution designed for use in periodontal pockets during scaling and/or root planing.

Oraqix is not an injectable anesthetic; rather, it is applied into gingival sulci and pockets by a custom *Oraqix™ Dispenser* with a blunt applicator tip. The low-viscosity, clear solution becomes an elastic gel at body temperature. **Oraqix** should be applied initially onto gingival margins, followed by direct application within the sulci, after which anesthesia is effective in 30 seconds. Each application is intended to provide 20 minutes of anesthesia. A single cartridge may provide anesthesia for one quadrant. The dispenser should be autoclaved between uses. The starter kit includes 20, 1.7-g cartridges and applicator tips and a dispenser. Twenty-nine consultants and hygienists evaluated the **Oraqix** starter kit in 207 applications. This product received a 91% clinical rating.

Suggested Retail Cost

- \$119.95/starter kit
- \$99.95/20 refill cartridges

Product Features

Oraqix is a unique product in the anesthetic spectrum, occupying a position between the topical anesthetic and the injectable local anesthetic. Most consultants found **Oraqix** to be a useful adjunct to periodontal therapy and to address an important need in localized soft-tissue



Consultants' Comments

- ▶ *"Very useful for a periodontal practice."*
- ▶ *"Taste is not bitter like injectable anesthetics."*
- ▶ *"Longer lasting than standard topical anesthetics."*
- ▶ *"Make the liquid more viscous."*
- ▶ *"Dispenser is cumbersome. It is difficult to find a comfortable hand position while using the dispenser."*

anesthesia. Instructions for use and the ease of introducing the product to patients and incorporating it into practice were highly rated. Placement of the material around teeth and into sulci is easy, although some consultants found the dispenser to be bulky. The dispenser clicks for each incremental application, but does not allow visualization of the remaining amount of solution. Overall, patients were highly accepting of **Oraqix**. Comfort during solution placement and the quality of anesthesia are both very good. Taste was rated as good, although some patients found the flavor of the solution to be objectionable. Ninety-seven percent of consultants found **Oraqix** to be equivalent to or better than the current product they use for localized anesthesia of gingival tissues. Nine out of every ten evaluators indicated that they would switch to and recommend **Oraqix** to a colleague.

Clinical Tips

- Bend the applicator tip 45 degrees for better access into the sulcus.
- Use only for adults.
- **Oraqix** may be reapplied, if needed, up to a maximum of five cartridges. ■

Chicago Midwinter Meeting
February 24-26, 2006

THE DENTAL ADVISOR invites you to join us at the Chicago Dental Society's 141st Midwinter Meeting, February 24-26, 2006. Visit us in booth #1415 and take advantage of our show discount to renew your subscription at 30% off the regular price. Speak directly to our knowledgeable staff about our 2005 Preferred Product List; upcoming features; new products; and upcoming seminars, lectures and meetings. Also, learn about our new state-of-the-art facility that includes THE DENTAL ADVISOR Biomaterials Research Center, led by John M. Powers, Ph.D.; THE DENTAL ADVISOR Education Center; and new administrative offices. Our growth will increase our ability to combine results from clinical and laboratory research in order to better educate dental professionals. We are looking forward to seeing you!