

THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”



Photography by Chris Brown

All-Ceramic Restorations

The demand for improved esthetics and concerns with the biocompatibility of metal have caused a revolution in the area of all-ceramic restorations. Recent advances in the mechanical properties of glass and oxide ceramics, fabrication methods, and adhesive technology have led to a wide array of treatment options for the clinician. As the technology continues to evolve so does the confusion about the ceramic systems.

This issue of THE DENTAL ADVISOR identifies the differences among ceramic systems, assists clinicians on material selection based on esthetics and strength, and addresses some of the confusion about zirconia.

June 2011

Vol. 28, No. 05

MAIN TOPIC

ALL-CERAMIC RESTORATIONS 2

CLINICAL EVALUATIONS

Twist Prophyl Angles..... 6
(Disposable Prophyl Angle)

3M ESPE Filtek Supreme Ultra..... 7
Flowable Restorative (Composite)

Cranberry Curve Fitted Nitrile..... 8
Powder Free Exam Gloves

FRESH BOLD VPS Impression..... 10
Material

Azenic DHP..... 11
(Disposable high-speed handpiece)

WedgeGuard 13

ALGINATOR..... 16
(Alginate mixer)

EDITORS' CHOICE



Moist SURE™ Lotion Soap..... 8
(Hand soap)

DEFEND+PLUS Sterilization 9
Pouches

Estelite Sigma Quick 12
2- year clinical performance
(Composite)

G-aenial Universal Flo 14
(Composite)

G-aenial Bond 15
(7th-generation bonding agent)

RATINGS

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

EDITORS

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

CLINICAL EDITOR

Sabiha S. Bunek, D.D.S.

EDITORIAL BOARD

John A. Molinari, Ph.D.
Peter Yaman, D.D.S., M.S.
William A. Gregory, D.D.S., M.S.
Santine Anderson, D.D.S.
Julius E. Bunek, D.D.S., M.S.
Sabiha S. Bunek, D.D.S.
Lori K. Brown, D.D.S.
Marie Fluent, D.D.S.
Brent Kolb, D.D.S.
Nizar Mansour, D.D.S.
Charles I. McLaren, D.D.S., M.S.
Kathy O'Keefe, D.D.S., M.S.
Thomas Poirier, D.D.S.
William T. Stevenson, D.D.S.
Robert J. Stevenson, D.D.S.
Gytis Udrys, D.D.S.

CONTRIBUTING AUTHOR

Sabiha S. Bunek, D.D.S.

EXECUTIVE TEAM

Jackie Farah, M.A.Ed.
Heidi L. Graber
Jennifer Kalasz
Pari Karani, M.S.
Craig Macfarlane
John A. Molinari, Ph.D.
Tricia G. Price
Joelle Prose, M.B.S.
Nelson Williams, M.S.
Mary E. Yakas, B.A., CMC
Ron Yapp, M.S.

PUBLISHER

Dental Consultants, Inc.

Please send inquiries and address changes to:

THE DENTAL ADVISOR,
3110 West Liberty, 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 ©2011, Dental Consultants, Inc. All rights reserved. Printed in the U.S.A. (ISSN 0748-4666) by Print-Tech, Inc.

This publication is printed on paper that is 50% recycled and has 25% post-consumer content.

All-Ceramic Restorations

Understanding the composition of ceramics is critical for proper material selection. This issue will focus on classifying ceramics based on their glass and/or crystal content. High glass content provides excellent esthetics while high crystalline content provides superior strength.

Category 1: High Esthetics/Low Strength Ceramics (High Glass)

Category 2: Moderate- High Esthetics/Moderate Strength Ceramics (Low Glass)

Category 3: High Strength/Low-Moderate Esthetic Ceramics (Polycrystalline, No Glass)

I. High Esthetics/Low Strength Ceramics (High Glass)

A. Feldspathic Ceramics

- **Features:** Highly esthetic, high translucency, lowest flexural strength
- **Indications:** Overlay porcelain on metal and ceramic copings /frameworks
- **Technique:** Powder-liquid slurry "layered" onto metal or ceramic

B. Leucite-Reinforced Ceramics

Small amounts of filler (45% leucite crystal) are added to the glass matrix to improve mechanical properties. Low flexural strength limits use in load-bearing areas.

- **Features:** Excellent esthetics and translucency
- **Indications:** Veneers, inlays/onlays, anterior crowns
- **Technique:** Pressed (lost wax) or Machine Milled (CAD/CAM)

*Can be surface stained or cut back layered with feldspathic porcelain.



Cerpress SL

(American Dental Supply)

II. Moderate-High Esthetics/Moderate Strength Ceramics (Low Glass)

Lithium Disilicate

Glass matrix filled with 70% lithium disilicate crystals.

Lithium disilicate crystals have low refractive index; therefore, material is relatively translucent and strong.

- **Features:** Translucent, moderate strength, can be monolithic or veneered
- **Indications:** Veneers, inlays/onlays, anterior/posterior crowns
- **Technique:** Pressed (lost wax) or Machine Milled (CAD/CAM)

*All copings/frameworks overlaid with feldspathic porcelain.

III. High Strength/Low-Moderate Esthetic Ceramics (Polycrystalline, No Glass)

Zirconia

High amount of crystalline phase gives strength to ceramic but also leads to opacity.

- **Features:** Highest strength ceramic, High fracture toughness, Opaque
- **Indications:** Anterior / Posterior crowns, 3-6-unit bridges, Maryland bridges, and Implant abutments
- **Technique:** Machine Milled (CAD/CAM)

*All copings/frameworks overlaid with leucite-reinforced ceramic.

Classifying All-Ceramic Restorations

Glass Content	Filler Material	Fabrication Process	Tradename	Flexural Strength (MPa)	Indications	Recommended Cement
High Esthetics/ Low Strength (High Glass Ceramics)	Feldspathic	Layering	Various Manufacturers (Vident, Jensen Dental, GC America, etc.)	<100	Veneering Porcelain only	Adhesive Resin with Silane
		CAD/CAM	CEREC Bloc (Sirona Dental Systems) VITABLOCS Mark II (Vident)	140	Inlays, Onlays, Veneers, & Anterior Crowns	
	Leucite-Reinforced	Pressed	Avante (Pentron Ceramics/Zahn Dental) Cerpress SL (American Dental Supply) Finesse (DENTSPLY Ceramco) IPS Empress Esthetic (Ivoclar Vivadent) Prestige (Pentron Ceramics/Zahn Dental)	120-180	Inlays, Onlays, Veneers, & Anterior Crowns	Adhesive Resin with Silane
		CAD/CAM	IPS Empress Esthetic CAD (Ivoclar Vivadent) Paradigm C (3M ESPE) HD17 CAM Blocks (Benco Dental)			
Mod-High Esthetics/ Mod Strength Ceramics (Low Glass)	Lithium Disilicate	Pressed	3G All Ceramic System (Pentron Ceramics/Zahn Dental) IPS e.max Press (Ivoclar Vivadent)	360-400	Inlays, Onlays, Veneers, Anterior / Posterior crowns	Self-adhesive, or Adhesive Resin with Silane
		CAD/CAM	IPS e.max CAD (Ivoclar Vivadent)			
High Strength/ Low-Mod Esthetic Ceramics (Polycrystalline, No Glass)	Zirconia	CAD/CAM	Lava Crowns & Bridges (3M ESPE) Lava All-Zirconia Monolithic (3M ESPE) Crystal (DLMS) IPS e.max ZirCAD (Ivoclar Vivadent)	800-1400	Anterior / Posterior crowns, 3-6-unit bridges, Maryland bridges, Implant abutments	Self-adhesive, Glass Ionomer, Adhesive Resin (use zirconia primer when needed)

Flexural Strength of Dental Ceramics (MPa)



All-Ceramic Restorations

Why Zirconia?

Zirconia, a polycrystalline material, is rapidly gaining popularity as the material of choice for all-ceramic restorations. Its outstanding physical properties make it a versatile option for most all-ceramic restorations, including bridges and implant abutments.

Important Properties of Zirconia

1. **High Flexural Strength:** Zirconia is much stronger than leucite-reinforced and lithium disilicate ceramics.
2. **High Fracture Toughness:** Fracture toughness measures the ability of a material containing a crack to resist fracture. Zirconia, unlike other ceramics, possesses a unique mechanism called “transformation toughening,” in which zirconia grains absorb energy and “transform” from a tetragonal form of crystal to a monolithic form of crystal. The latter form is slightly larger and can seal off small cracks.
3. **Inherent Opaque Color:** Compared to glass ceramics, zirconia is more opaque in color. This can be advantageous when there is a need to block out/mask a dark tooth or restoration. The opacity can be controlled by shading the zirconia framework or by varying the thickness of the core.
4. **Biocompatibility:** It is 100% biocompatible with the body; therefore, there is no need to worry about adverse reactions or allergies.

Evolution of Zirconia: Framework to Full-contour Restorations

Until recently, zirconia was used primarily as a framework for single crowns and bridges (in place of metal). Similar to the fabrication of a PFM crown, the zirconia framework is overlaid with porcelain, providing a strong and esthetic restoration.

A small percentage of clinicians have reported issues with the fracturing/chipping of the porcelain veneer with bilayered zirconia restorations. The percent reported is low and most failures can be prevented if both the dentist and laboratories follow the guidelines for preparation, fabrication, and cementation.

The success of zirconia as a strong framework under applied porcelain has led to the development of full-contour zirconia restorations. In addition to strength, fracture resistance, and biocompatibility; full contour zirconia crowns are resistant to chipping or fracture. They are milled from solid monolithic zirconia with no porcelain overlay. Some clinicians are concerned with the abrasiveness on opposing natural dentition, but research indicates that a highly polished, full contour zirconia restoration is less abrasive than conventional PFM crowns and bridges. The use of full-contour zirconia restorations is a fairly new concept, and there is still more research that needs to be done.

What's New In Ceramics and Zirconia?

The current clinical challenge with full-contour zirconia restorations is that they provide superior strength, but lack the esthetics of other more translucent materials. Newer, more translucent zirconias have recently been introduced such as **LavaPlus** (3M ESPE), **NexxZr** (Sagemax), **Prettau** (Zirconzahn USA Inc.), **Zirlux FC** (Pentron Ceramics/Zahn Dental). Laboratory technicians are also using innovative techniques and materials for staining and glazing zirconia to achieve even better esthetics.

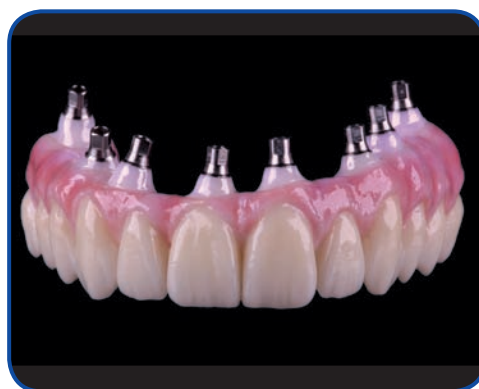
CAD-ON (Ivoclar Vivadent) and **Lava DVS** (3M ESPE) are CAD/CAM-based restorative systems where a zirconia substructure and a ceramic “super-structure” are milled separately and then fused together by a laboratory technician. These systems offer the benefit of industrially-manufactured materials, each optimized for its intended purpose and both designed in a single step on computer workstation. The substructure is extremely strong, and the superstructure, while not as strong, comes with far better esthetics.

Zirconia Frameworks and Full-contour Zirconia

Company	Zirconia Framework	Full Contour Zirconia
3M ESPE	Lava Crowns & Bridges	Lava All-Zirconia Monolithic
DENTSPLY Ceramco	Cercon ZR	N/A
DLMS	Crystal	Crystal Diamond
DOCERAM	NACERA	NACERA ZT
Glidewell Laboratories	Prismatik Clinical Zirconia	BruxZir
Noritake Dental Supply Co., Limited.	Noritake Zirprime and Katana Zirconia PS Block	N/A
Pentron Ceramics/Zahn Dental	Zirlux ZF	Zirlux FC
Sagemax	Sagemax	NexxZr
Zirkonzahn USA Inc.	ICE Translucent Zirconia	Prettau Zirconia



Zirlux FC (*Pentron Ceramics/Zahn Dental*)



Prettau Zirconia (*Zirkonzahn USA Inc.*)

Q What is the difference in strength between pressed-porcelain-to-zirconia versus traditional stacked or layered porcelain-to-zirconia?

A Both techniques should produce adequate strength if the heating and cooling temperatures encountered during processing do not create adverse thermal gradients that cause residual stresses.

Q What type of ceramic is used for the overlay material for zirconia copings?

A There are a number of zirconia-optimized ceramics available. Typically, ceramics for zirconia are leucite-reinforced ceramics. Do not use porcelains intended for PFM restorations.

Q Is preparation design of a zirconia coping important since the zirconia ceramic is so strong?

A Preparation design of the zirconia coping is very important. The thickness of unsupported porcelain should not exceed 2 mm. The zirconia coping should be as thick as needed to avoid unsupported porcelain.

Q What type of bonding material should be used with zirconia-based restorations?

A Self-adhesive resin cements and bonded resin cements bond well to both tooth structure and zirconia when increased retention is desired. Zirconia can be treated with special primers (*Z-PRIME Plus*, Bisco Dental Products; *Clearfil Ceramic Primer*, Kuraray America; *Monobond Plus*, Ivoclar Vivadent) to improve bonding of resin cements to the intaglio surface of the zirconia coping.

Twist Propphy Angles + + + 1/2

Crosstex
888.276.7783
631.582.6777
www.crosstex.com

Request a Sample:
Visit www.dentaladvisor.com to request
a sample or more information!



Description

Twist Propphy Angles are disposable, 90° reciprocating prophylaxis angles. **Twist Propphy Angles** feature an oscillating motion that eliminates splatter and frictional heat. According to the manufacturer, the design allows continuous contact and pressure on tooth surfaces for maximum stain removal. **Twist Propphy Angles** are packaged in individually sealed 100-count bags in four styles: soft cup, firm cup, flat brush, and tapered brush. The manufacturer claims include that the “lift and dab” technique is not necessary due to ergonomics of the angle design, that the product is safe for use on gingival margins and exposed dentin, and that they are ideal for applying dental medicaments and preparing teeth for etchants and whitening procedures. **Twist Propphy Angles** in soft and firm cups and tapered brush were evaluated by 31 consultants in 1394 uses. They received an 85% rating.

Suggested Retail Cost

- \$69.95/100-count bag of cups
- \$99.95/100-count bag of brushes

Product Features

Twist Propphy Angles fit onto handpieces well and performed without failure. Nearly all of the consultants liked the lack of splatter and overall design of the cups that allowed them to adapt to the tooth surface. The reciprocating motion produces some noise and a feeling of vibration or chatter. Many consultants were using handpieces for which it was not possible to monitor the speed to achieve the recommended 4000 rpm. Several consultants noted that stain removal was more dependent upon the prophylaxis paste than the prophylaxis angle being used. Twenty-six percent of consultants reported that **Twist Propphy Angles** were better than their current prophylaxis angles and 32% reported that they were equivalent. Thirty-six percent would switch to **Twist Propphy Angles** and 52% would recommend them.



Consultants' Comments

- ◆ “I liked the lack of splatter and size, shape, and ability of the prophylaxis cups to adapt to the tooth.”
- ◆ “I loved the ability of the cups to maintain contact with the tooth surface.”
- ◆ “There was too much chatter.”
- ◆ “Hard to adapt to this ‘constant contact’ technique.”

Clinical Tips

- Operate **Twist Propphy Angles** at 4000 rpm to reduce vibration.
- Maintain constant speed and use a sweeping motion with moderate pressure.
- Always operate the drive shaft of **Twist Propphy Angles** in alignment with the axis of the handpiece. Do not flex **Twist Propphy Angles** at an angle to the handpiece.

Editor's Note: The manufacturer recommends viewing their instructional video (<http://www.crosstex.com/videos/Twist.html>) as the need for “constant contact” when using **Twist Propphy Angles** is a new technique and requires a change in behavior. ■

3M ESPE Filtek Supreme Ultra Flowable Restorative + + + +

3M ESPE
800.634.2249
www.3mespe.com

Description

3M ESPE Filtek Supreme Ultra Flowable Restorative is a low-viscosity, visible-light activated, radiopaque, flowable nanocomposite. It is packaged in unit-dose capsules and syringes. It is available in shades A1, A2, A3, A3.5, A4, B1, B2 C2, D2, White, Extra White, and OA3, which were designed to coordinate with shades offered with *Filtek Supreme Ultra Universal Restorative*. **3M ESPE Filtek Supreme Ultra Flowable Restorative** is indicated for use in Class III and V restorations, for the restoration of minimally invasive cavity preparations (including small, non stress-bearing occlusal restorations), as a base/liner under direct restorations, for the repair of small defects in esthetic indirect restorations, as a pit and fissure sealant, as an undercut blockout, and for the repair of resin and acrylic temporary materials. Each package contains two, 2-g syringes with 20 dispensing tips or 20, 0.2 g unit-dose capsules. **3M ESPE Filtek Supreme Ultra Flowable Restorative** was evaluated by 34 consultants in 1511 uses. It received an 86% clinical rating.

Suggested Retail Cost

- \$76.00/ 2- 2 g syringe refill
- \$85.00/ 20-capsule refill

Product Features

3M ESPE Filtek Supreme Ultra Flowable Restorative in the syringe delivery was a familiar delivery system to the consultants. The product extrudes easily through the pre-bent metal tips. The unit-dose capsule has a thin plastic nozzle for placement into small areas. Consultants noted that dispensing from the capsules was not as smooth as the syringe; the composite came out in spurts making it hard to control volume of material. Shade selection is good but shades were too translucent, especially for some cervical



Consultants' Comments

- ◆ "Good shade selection and stacks well – easy to finish."
- ◆ "Radiopaque and less shrinkage than most flowables."
- ◆ "Material in the capsules did not extrude well, as compared to the syringe delivery."
- ◆ "Opaque shade doesn't cover metal well."
- ◆ "Too viscous for some applications."

restorations. Forty-four percent of consultants reported that **3M ESPE Filtek Supreme Ultra Flowable Restorative** was better than their current flowable composite and 44% reported that it was equivalent. Fifty-nine percent would switch to **3M ESPE Filtek Supreme Ultra Flowable Restorative** and 82% would recommend it.

Clinical Tip

- Fill preparation slowly to avoid air entrapment. ■

Sultan Healthcare
800.637.8582 - 201.871.1232
www.sultanhealthcare.com

Description

Moist SURE™ Lotion Soap is a product intended for washing hands before contact with patients under medical care or treatment. It meets the FDA proposed performance standards for a healthcare personnel hand wash and meets the CDC recommendations for mildness and user tolerance. It is dermatologist tested and hypoallergenic. The active ingredient is triclosan (0.5%). **Moist SURE Lotion Soap** meets performance criteria as a Healthcare Personnel Hand Wash, has a 15-second MRSA & VRE claim, is claimed to be as effective as a 4% CHG product, and is mild to skin. It is available as a 15-ounce pump bottle and a 33.8-ounce wall dispenser bottle. **Moist SURE Lotion Soap** was evaluated by 41 consultants in 1577 uses. It received a 92% rating.

Suggested Retail Cost

- \$11.28 15oz pump bottle
- \$13.63 33.8oz Automatic Dispenser Refill
- \$60.00 Automatic Wall Dispenser

Consultants' Comments

- ♦ "I found it to be very effective at cleaning my hands and not over drying them."
- ♦ "My hands were soft after using this product."
- ♦ "My hands feel moisturized."

Product Features

Consultants liked the moisturizing effect of **Moist SURE™ Lotion Soap** on their hands. If the soap was rinsed well, then residue was not a problem. With incomplete rinsing, a tacky residue was apparent. Skin irritation was not evident during the testing period. The clean scent and ease of donning gloves received very good ratings. Fifty-eight percent of consultants reported that **Moist SURE Lotion Soap** was better than their current lotion soap and 24% reported that it was equivalent. Seventy-one percent would switch to **Moist SURE Lotion Soap** and 78% would recommend it.

Clinical Tip

- Rinse and dry your hands well before trying to apply your gloves. ■

Cranberry Curve Fitted Nitrile Powder Free Exam Gloves + + + + 1/2

Cranberry USA
888.811.6839 - 707.553.6190
www.cranberryusa.com

Description

Cranberry Curve Fitted Nitrile Powder Free Exam Gloves are the only natural hand-curve fitted nitrile gloves with "NuComfort™" ultra-soft formulation for comfort and fit. The gloves are white in color with a micro-roughened texture. These hand-curve fitted gloves feature a rolled beaded cuff and are designed to help alleviate stress and fatigue on hands over extended use. They are available in six sizes to accommodate a wide range of different hand sizes and are packed in 100-count boxes of left/right gloves (50 pairs). Sizes available are 6, 6.5, 7, 7.5, 8, and 8.5. **Cranberry Curve Fitted Nitrile Powder Free Exam Gloves** were evaluated by 45 consultants in 1657 uses. They received a 91% rating.

Suggested Retail Cost

- \$10.49 per box (50 pairs/100 count)

Consultants' Comments

- ♦ "I liked the fit of the gloves for left and right hands. I experienced less hand fatigue."
- ♦ "Good selection of sizes."
- ♦ "They seem to be very durable and don't tear when putting them on - good tactile feel during procedures."
- ♦ "Size/dimensions of the box were awkward for our box holders on the wall."
- ♦ "Less tactile feel than latex."
- ♦ "My hands sweated more wearing these gloves."

Product Features

For consultants who regularly use nitrile gloves, **Cranberry Curve Fitted Nitrile Powder Free Exam Gloves** provided greater comfort, especially for long procedures. While tactile sense was good, consultants reported that it is less than with latex gloves. The grip with these gloves is adequate when dry, but the surfaces of the gloves tend to get slippery when wet. Many consultants

DEFEND+PLUS Sterilization Pouches – with Built-in Internal Indicator + + + + 1/2

Mydent International
800-275-0020
www.defend.com

Description

DEFEND+PLUS Sterilization Pouches feature water-based, lead-free built-in external and internal indicators that ensure the proper sterilization temperature is reached in the autoclave chamber, as well as inside the instrument compartment. There is no need for additional internal indicator strips. These pouches have triple-sealed seams with a thumb-notch for easy opening. The blue-tinted, transparent film assists in detecting tears should they occur. In addition, these pouches are constructed of durable medical grade paper and are sturdy when wet. **DEFEND+PLUS Sterilization Pouches** are available in 200-count boxes in five sizes: 2.75"x10", 3.5"x5.25", 3.5"x10", 5.25"x10" and 7.5"x13". **DEFEND+PLUS Sterilization Pouches** were evaluated by 38 consultants in 5400 uses. The product received a 92% rating.

Suggested Retail Cost

- 2.75"x10": \$13.35
- 3.5"x5.25": \$14.40
- 3.5"x10": \$13.35
- 5.25"x10": \$19.55
- 7.5"x13": \$30.85

Consultants' Comments

- ♦ "The paper on **DEFEND+PLUS Sterilization Pouch** is thick and did not rip or allow instruments to poke through."
- ♦ "Easy to seal and good choice of sizes."
- ♦ "The bag dries very fast after sterilization."
- ♦ "The internal and external indicators are a great idea!"
- ♦ "Make the color change for the indicators more defined and bold."
- ♦ "Size of 3.5"x5.25" pouches are just a bit too small for some uses."

Product Features

Consultants liked the choice of sizes and the ease of use of **DEFEND+PLUS Sterilization Pouches**. Many consultants reported that the pouches were resistant to ripping and to instrument "poke-through." The thumb notch makes it easy to peel the package open, even with gloved hands. Consultants recommended making the indicator colors more intense to aid visual confirmation at a glance. Consultants liked the presence of both internal and external indicators. Sixty percent of consultants reported that **DEFEND+PLUS Sterilization Pouches** were better than their current sterilization pouches and 34% reported that they were equivalent. Sixty percent would switch to **DEFEND+PLUS Sterilization Pouches** and 82% would recommend them. ■

Cranberry Curve Fitted Nitrile Powder Free Exam Gloves + + + + 1/2

commented that the boxes of left/right gloves did not fit in their standard glove dispensers. Fifty-eight percent of consultants reported that **Cranberry Curve Fitted Nitrile Powder Free Exam Gloves** were better than their current gloves and 31% reported that they were equivalent. Sixty-four percent would switch to **Cranberry Curve Fitted Nitrile Powder Free Exam Gloves** and 80% would recommend them.

Clinical Tips

- Make sure your hands are totally dry before putting gloves on.
- Pick the right size for best results. ■

FRESH BOLD VPS Impression Material + + + +

EXACTA Dental Products
800.474.7665 - FAX 800.204.4430
www.exactadental.com

Description

FRESH BOLD VPS Impression Material is available in eight different viscosities and two setting times to accommodate all impression techniques. New improvements to the **FRESH** impression material line are purported to include increased hydrophilic properties and tear strength in the low viscosities along with better long-term dimensional stability in the medium and high viscosities. The materials have bold colors for visual verification of detail and margins. The materials are available in 50 mL auto-mix cartridges along with 380 mL cartridges for automatic mixing machines. For the Fast Set material, working time is 1:30, setting time is 1:30, and total time is 3:00. Twenty-nine consultants evaluated Fast Set **FRESH BOLD VPS Impression Material** in Heavy Body and Light Body in two-count boxes of 50 mL cartridges with mixing tips in 568 impressions. **FRESH BOLD VPS Impression Material** was evaluated by 33 consultants in 617 uses. It received an 87% rating.

Suggested Retail Cost

- \$29.95/2-cartridge kit

Product Features

FRESH BOLD VPS Impression Material performed well for routine crown and bridge impressions. It was rated highly for color contrast and ease of reading margin detail. The quality of detail was very good, and the fast setting time was considered an advantage. Many consultants reported that they obtained clear impressions without voids or tears. Isolated incidences of voids, tearing, improper setting, and bite-through on dual-arch trays were reported. The Light Body material flowed well and was much easier to dispense than the Heavy Body material; some consultants felt the Light body material to be a bit runny. Thirty percent of consultants reported that **FRESH BOLD VPS Impression Material** was better than their current impression material and 42% reported that it was equivalent. Forty-eight percent would switch to **FRESH BOLD VPS Impression Material** and 73% would recommend it.



Consultants' Comments

- ♦ "I liked the color contrast, excellent detail and fast setting time."
- ♦ "Impressions were clear - no voids or bubbles."
- ♦ "Impressions did not tear in the critical areas."
- ♦ "Hard to dispense heavy-bodied material."
- ♦ "The label covers the cartridge and does not allow the user to see the volume of material remaining."

Clinical Tips

- The Light Body material flows easily - the Heavy Body less so. Allow assistant to load the tray most of the way before syringing the Light Body around the teeth.
- The Heavy Body material is great for border molding complete denture impressions.
- Use the Light Body material for complete denture wash impressions.
- Block out undercuts and pontics to make removal of the impression easier.

Editor's Note: Since the evaluation of this product the manufacturer has revised their labels to allow the user to easily determine contents remaining in the cartridge. ■

Azenic DHP
888-347-7576
www.azenic.com

Request a Sample:
 Visit www.dentaladvisor.com to request
 a sample or more information!



Description

Azenic DHP is an American-made, FDA-approved disposable, high-speed handpiece for single-patient use. It weighs 17 g, is ergonomically balanced, maintenance free, and available in a box of 12 individually wrapped, sterile handpieces. **Azenic DHP** contains a light pipe for light transmission from a fiberoptic source. **Azenic DHP** is engineered to have enough torque, power and cutting efficiency to perform in difficult and heavy drilling cases. **Azenic DHP** is recommended as a complement to metal handpieces, used as an economical alternative to save wear on expensive handpieces for procedures such as removing old crowns or preparing multiple teeth. It is also recommended for sectioning teeth for extraction and performing various surgical procedures, since no chip air is expelled, and as a back-up in the case of handpiece or sterilizer malfunction. Given its sterile, individually wrapped, single-patient nature, it is also marketed as an enhancement in cross-contamination prevention. Each handpiece comes with a manual push-style bur changer. **Azenic DHP** was evaluated by 32 consultants in 172 uses. It received a 76% clinical rating.

Suggested Retail Cost

- \$15.00 per handpiece

Product Features

Consultants primarily used **Azenic DHP** for cavity preparation and general crown and bridge applications. They found **Azenic DHP** had good torque and cut well but was notably louder than any of their other handpieces. Given the product uses a friction-grip chuck mechanism designed to allow multiple bur changes without bur slippage or walk-out, it is recommended the user familiarize themselves with the technique for changing burs. Manually changing burs is inconvenient and requires a very hard push to insert and remove burs. Consultants did report instances of burs becoming stuck in the chuck. The head size is large and boxy, potentially impeding visibility and access. The handpiece itself is lightweight and well balanced, thus more of the weight is on the back end when connected to the tubing. There is no chip air through the handpiece, so the delivery unit water pressure must be set to the recommended 5 psi; otherwise, the spray will not be directed at the tip but will follow gravity or be pulled into the suction tip, leaving debris at the preparation site. Forty-seven percent of consultants reported that the infection control benefit of the **Azenic DHP** was important. Forty-four percent of consultants reported that the **Azenic DHP** was a good alternative for their primary handpiece and 44% would recommend it.



Consultants' Comments

- ◆ "Handpiece is lightweight and disposable."
- ◆ "Torque was great."
- ◆ "No maintenance required."
- ◆ "The handpiece seemed to have adequate torque when sectioning a third molar for extraction, and I appreciated the fact that no air was forced into the surgical site."
- ◆ "Noise level was high - even patients commented on it."
- ◆ "Bur changing was inconvenient."
- ◆ "Improve the water spray and hose connection."

Clinical Tips

- Recognize what the product is and what the recommended uses are.
- Plan the procedure to minimize bur changes.
- Set delivery unit water pressure to the recommended 5 psi.
- Have the assistant use constant water spray when preparing a tooth. ■

Tokuyama Dental America
877.378.3548
www.tokuyama-us.com

Description

Estelite Sigma Quick is a supra-nano filled, low-shrinkage composite indicated for anterior and posterior class I-V restorations. **Estelite Sigma Quick** implements RAP technology (Radical-Amplified Photopolymerization initiator technology), which offers increased working time of 90 seconds under ambient light and decreases the curing time to 10 seconds with a halogen light. **Estelite Sigma Quick** is available in both syringes and pre-loaded tips (PLTs) in shades: A1, A2, A3, A3.5, A4, B1, B2, B3, B4, C1, C2, C3, OA1, OA2, OA3, OPA2 (opalescent), BW (bleach white), WE (white enamel), and CE (clear enamel). This product received a 99% clinical rating.

Clinical Evaluation Protocol

- 1836 **Estelite Sigma Quick** restorations were placed using a wide variety of 6th- and 7th-generation bonding agents.
- 353 restorations (molars – 47%, premolars – 27%, anterior teeth – 26%) in 163 patients were available for evaluation of clinical performance up to 24 months after placement. The distribution of restorations is shown in Figure 1.
- Restorations were evaluated on a 1-5 rating scale: 1 = poor, 2 = fair, 3 = good, 4 = very good, 5 = excellent.

Distribution of Estelite Sigma Quick Restorations Recalled at 2 Year

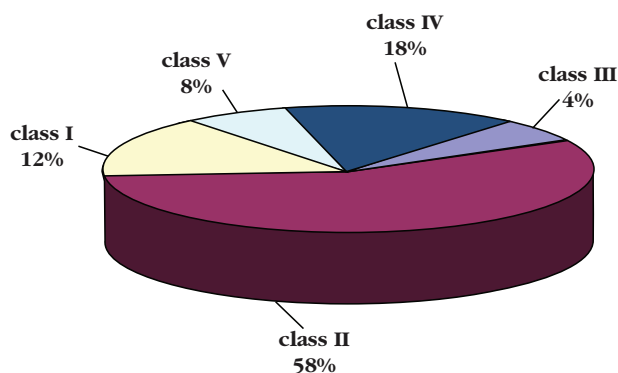


Figure 1

THE DENTAL ADVISOR

Clinical Observations

Resistance to Fracture

Estelite Sigma Quick performed very well after two years in service (Figure 2). Eleven restoration exhibited slight chipping and

Consultants' Comments

- ◆ "After two years in service, these restorations continue to retain the esthetics achieved at placement."
- ◆ "This material has exhibited excellent resistance to chipping and fracture in the anterior and posterior regions over the past two years."
- ◆ "After two years of placing this material, the excellent handling, rapid cure and esthetics continue to make this my material of choice."

none requiring replacement. There were seven debonds during the two years since placement. All of the debonds were facial/buccal restorations.

Esthetics

Estelite Sigma Quick exhibited very good esthetics both in the anterior and posterior regions after two years in service (Figure 2). The rapid cure time and excellent viscosity facilitated placement of the resin composite in all areas of the mouth. The excellent esthetics was a result of a variety of shade availability and the cameleon effect of the material.

Resistance to Marginal Discoloration

All of the **Estelite Sigma Quick** restorations were placed using self-etching bonding agents. Ninety-eight percent of the restorations had no marginal discoloration after two years (Figure 2).

Wear Resistance

Estelite Sigma Quick maintained excellent wear resistance both in the anterior and posterior regions after two years in service (Figure 2).

Triodent Corp.
800.811.3949
www.triodent.com

Description

WedgeGuard is a color-coded, two-in-one tooth guard. Its purpose is protection of the tooth and gingiva from iatrogenic damage by a bur during preparation of an adjacent tooth. **WedgeGuard** is composed of a metal guard attached to a plastic wedge that is intended to be placed prior to tooth preparation. After preparation, the protective guard is detached, leaving the wedge in place to continue restoration. **WedgeGuard** is designed to provide a cleaner, risk-free work area and save time. The wedge is contoured to promote sealing at the gingival margin. The V-shaped concavity on the underside of the wedge protects the gingival papilla and allows for insertion of another wedge from the opposite side of the embrasure. **WedgeGuard** is shaped to be self-guiding and self-locating. **WedgeGuard** can be used during Class II and III restorations, crowns, veneers and tunnel preparations. The kit contains 25 small (white), 25 medium (pink), and 25 large (purple) **WedgeGuards** in a re-closable storage container with manufacturer's instructions. **WedgeGuard** was evaluated by 22 consultants in 571 uses. It received an 88% rating.

Suggested Retail Cost

- \$89.00/Intro Kit

Product Features

Consultants reported that **WedgeGuard** was easy to place,

Consultants' Comments

- ♦ "The guard allowed me to prepare interproximally a lot faster. It also protected the tissue very well, allowing matrix placement with no tissue damage or bleeding."
- ♦ "I liked the ease of gripping and removing the guard on most teeth."
- ♦ "Easy to place and avoid tissue trauma, great contacts, and easy to remove protective metal guard."

especially when using the pin-tweezers that are recommended. It effectively protected adjacent teeth and soft tissues from trauma during cavity preparation. Several consultants reported that it saved time during cavity preparation. Instructors in academic settings were particularly enthusiastic about **WedgeGuard**. Forty-one percent of consultants reported that **WedgeGuard** was better than their current method of protecting adjacent surfaces and 27% reported that it was equivalent. Fifty percent would switch to **WedgeGuard** and 82% would recommend it.

Clinical Tips

- Place wedge from the buccal aspect if the lingual tissue is not anesthetized.
- Trim the top part of the guard with the bur if necessary for better occlusal view and access. ■



Estelite Sigma Quick 2-year Clinical Performance + + + + +

Results of Estelite Sigma Quick Recall at 2 Year

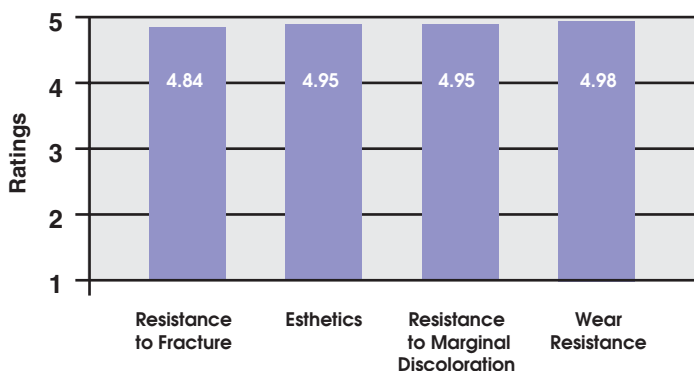


Figure 2

THE DENTAL ADVISOR

Summary

Three hundred fifty-three **Estelite Sigma Quick** restorations in 163 patients were available for recall up to two years after placement. A 2% debond rate and excellent resistance to marginal discoloration were observed when the resin composite was used with a wide variety of self-etching bonding systems. At two-year recall, the majority of restorations exhibited excellent resistance to chipping and very good esthetics. ■

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

Description

G-aenial Universal Flo is a universal light-cured composite with a flowable viscosity. Unlike other flowable composites that have limited indications, **G-aenial Universal Flo** is indicated as a direct restorative for Class I, II, III, IV, and V cavities. It may also be used as a pit and fissure sealant, for sealing hypersensitive areas, for the repair of direct esthetic restorations, as a temporary crown and bridge material, for blocking out undercuts, and as a liner or base. **G-aenial Universal Flo** is filled 69% (by weight) with 200 nm strontium glass particles and does not contain bis-GMA. This composite has a “low flow” viscosity and is syringe-delivered through a unique twist-on dispensing tip. Shades include A1, A2, A3, A3.5, A4, B1, B2, B3, C3, AO2, AO3, BW, CV, JE, and AE. **G-aenial Universal Flo** is available in 3.4-g syringes with 10 dispensing tips. Consultants evaluated shades A1, A2, A3, B1, and CV. **G-aenial Universal Flo** was evaluated by 24 consultants in 932 restorations. It received a 92% rating.

Suggested Retail Cost

- **G-aenial Bond & Universal Flo Introductory Kit:** \$156 (syringe of composite is free) Contents: 1 - **G-aenial Bond Kit** (5 mL) and 1 - **G-aenial Universal Flo Syringe** (3.4 gm) A2

Clinical Observations

Manufacturer's Instructions/ Packaging

Instructions for **G-aenial Universal Flo** are complete and easy to follow. Packaging is simple. Consultants would like a greater quantity of syringe tips in the package.

Ease of Dispensing/Use of Syringe

The dispensing tips provided are unique to this material; universal tips do not fit the **G-aenial Universal Flo** syringes. The long, narrow tips are plastic and may be bent at any point for improved access. While the flexibility for bending the tip is a benefit, there are some cases in which a more rigid tip would be an advantage. Material dispenses smoothly and does not ooze out of the tip after placement.

Viscosity/Stackability

Most consultants liked the viscosity and the ability to stack the composite, especially in larger restorations. After placement the material levels out in the tooth. For procedures involving small or narrow preparations, a more flowable composite would be advised.

Ease of Placement

Many consultants reported that the composite was sticky when moving it around in the prepared tooth. Filling the tooth and



Consultants' Comments

- ♦ “The viscosity was nice for Class V. It has the ability to stack for buildups.”
- ♦ “The shading was good with a range of shades available – good esthetics.”
- ♦ “Good radiopacity.”
- ♦ “It stays where you place it.”
- ♦ “The composite cures slightly darker than the labeled shade.”
- ♦ “The composite is sticky and pulls back.”

moving the material with the dispensing tip are recommended, and stringing is decreased if the tip is removed perpendicular to the surface of the material. There is no ability to sculpt this material.

Shade Match Before and After Curing/Final Esthetics

Esthetics rated highly, with good blending of the composite to the tooth. The material gains translucency upon curing, and shades are slightly darker than labeled.

Summary

Seventy-one percent of consultants reported that **G-aenial Universal Flo** was better than their current flowable composite when used for a final restoration. When used for purposes other than a final restoration, 38% of consultants reported that **G-aenial Universal Flo** was better than their current flowable composite and 42% reported that it was equivalent. Sixty-seven percent would switch to **G-aenial Universal Flo** and 75% would recommend it.

Clinical Tip

- The tip is flexible so it can be bent as needed to access various areas of the preparation. ■

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

Description

G-aenial Bond is a 7th-generation bonding agent designed for the selective etching technique (self-etch for dentin, etch and rinse for uncut enamel). This one-component, self-etching light-cured adhesive does not require refrigeration. It is indicated for the bonding of light-cured composites and compomers to tooth structure. It can also be used to bond dual-cured luting and core build up composites to tooth structure as long as these materials are light cured. Kit contents include a 5 ml bottle of **G-aenial Bond**, 50 disposable applicator tips, 20 disposable dispensing dishes, product literature, and IFU/instructions. **G-aenial Bond** was evaluated by 21 consultants in 792 uses. It received a 97% rating.

Suggested Retail Cost

- **G-aenial Bond & Universal Flo Introductory Kit:** \$156 (syringe of composite is free) Contents: 1 - **G-aenial Bond Kit** (5 mL) and 1 - **G-aenial Universal Flo Syringe** (3.4 gm) A2

Product Features

G-aenial Bond dispenses easily from its dropper bottle and the application technique is simple. Because this adhesive is formulated with acetone, it evaporates quickly and that can affect its application. Most consultants reported that the bonding agent wet the tooth well. Consultants appreciated that the bonding agent does not require refrigeration. Forty-three percent of consultants reported that **G-aenial Bond** was better than their current bonding agent and 48% reported that it was equivalent. Sixty-seven percent would switch to **G-aenial Bond** and 81% would recommend it.



Consultants' Comments

- ◆ "Easy to apply, good dispensing method, good viscosity."
- ◆ "Bonding agent wets the tooth well - I didn't worry about missing an area."
- ◆ "I like that this bonding agent does not require refrigeration."
- ◆ "Product is sensitive to ambient light."
- ◆ "It evaporates very quickly."

Clinical Tips

- Keep **G-aenial Bond** covered once dispensed to prevent light exposure and evaporation of solvent.
- Shake the bottle before use. ■

Introducing THE DENTAL ASSISTANT corner!

Adding to our "Corners of Information" is the **Assistant Advisor**, a place specifically for the Dental Assistant professional. Jennifer Ireland, C.D.A., R.D.A., of THE DENTAL ADVISOR Editorial Board will provide an overview of our monthly main topic from the assistant's perspective. The area will also highlight review of products to assist the assistant, answers to questions, and an opportunity for assistants to make suggestions and submit questions. Be sure to let your assistants know of the valuable information available at THE DENTAL ADVISOR Online, the **Assistant Advisor** corner is under Clinical Evaluations (<http://www.dentaladvisor.com/clinical-evaluations/assistant-advisor.shtml>)



Ask the Assistant

ALGINATOR + + + +

DUX Dental

800.833.8267 - 805.488.1122

www.duxdental.com

Description

The **ALGINATOR** is an automatic alginate and stone mixer designed to make smooth, virtually bubble-free mixes. This model offers a single speed for mixing, unlike the previous version that had a high/low speed selection. The flexible mixing bowl has a locking mechanism built into the underside which secures it to the mixing unit. One finger must hold the button down during mixing, while the spatula is held in the other hand. The **ALGINATOR** package includes the 110v unit, *Identic Dust Free Fast Set Alginate* (1 lb), gray alginate bowl, *Clean & Lube Spray* (4 oz), spatula, *Clean and Lube* wipes (sample), and manufacturer's instructions. **ALGINATOR** was evaluated by 15 consultants in 573 uses. It received an 86% rating.

Suggested Retail Cost

- \$432.20

Equipment Features

Consultants unanimously reported that mixes were smooth and consistent with no bubbles. The spray facilitates clean up. Consultants thought the mixing speed was slower than hand mixing and didn't like the several steps required to use the **ALGINATOR**, but the result was far superior to hand mixing. Forty-seven percent of consultants reported that **ALGINATOR** was better than their current alginate mixing procedure and 33% reported that it was equivalent. Sixty percent would switch to **ALGINATOR** and 67% would recommend it.



Consultants' Comments

- ◆ "The mix was smooth and consistent – no air bubbles."
- ◆ "Clean up was easy with the spray."
- ◆ "You need to place the unit in a central location or have one in each room."
- ◆ "Button is hard to press."
- ◆ "I would like to be able to switch between low and high speed."

Clinical Tips

- View the short video demonstration on the manufacturer's website for proper technique.
- Blend the alginate powder and water for several seconds before activating the mixing unit. ■

SPECIAL THANKS TO:

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 • T. Poirier, MI • 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:

• F. Ahmed, MI • M. Aksu, MI • A. Albright, NY • J. Amara, CT • S. Anderson, MI • R. Averbach, CO • S. Barth, MI • L. Bartoszewicz, MI • J. Bechtel, MI • F. Berman, PA • L. Bishop, MI • T. Bizga, OH • J. Bostic, OH • L. Brimhall, MT • M. Briskin, NY • C. Brown, LA • L. Brown, MI • W. Browncombe, MI • J. Bunek, MI • S. Bunek, MI • J. Bush, PA • H. Cadorette, MI • P. Campo, NY • D. Chacko, TN • D. Chenevert, MI • R. Cherry, FL • S. Church, MI • W. Co, MI • C. Colbert, MI • M. Conrad, PA • K. Dancy, GA • S. Dillingham, NY • J. Dingman, WI • R. Dost, VA • J. Doueck, NY • A. Dutko, MI • M. Dwoskin, MI • M. Eannaccone, NY • M. Elford, MI • D. Ellinger, MI • R. Engle, IL • F. Facchini, MI • K. Fairbanks, MI • M. Feinberg, NY • L. Feldman, NJ • K. Fischer, IN • M. Fluent, MI • M. Frankman, SD • R. Gardner, MI • N. Garlisi, OH • L. Gee, OK • K. Goodman, MI • S. Graber, IL • B. Greenwood, UT • W. Gregory, MI • P. Gronet, GA • J. Grover, MI • H. Gulati, MA • B. Gursky, MI • E. Gutman, NY • D. Haas, Canada • H. Hamerink, MI • D. Hines, MI • S. Harden, GA • A. Herrero, MI • B. Herrmann, CA • R. Herwig, KS • S. Hoekman, MI • R. Humphries, MI • P. Indianer, MI • J. Ireland, MI • S. Isaacson, NJ • C. Jaghab, MI • J. Jaghab, MI • A. Jaquey, MI • J. Kaminski, MI • D. Kapp, NY • J. Karam, MI • M. Kastner, OH • E. Kelly, GA • D. Keren, NY • B. Klym, MI • B. Kolb, MI • M. Kruscke, MI • M. La Marche, WA • R. Le, NC • J. Leitner, MI • S. Lever, MD • I. Levine, NY • R. Lezell, MI • M. Livernois, SC • J. Lockwood, MI • J. Lusby, MI • M. Man, NY • B. Manne, FL • N. Mansour, MI • K. Mantzikos, NY • F. Margolis, IL • N. Markarian, CA • D. Marsh, MI • M. Mason, NY • J. Mayer, OH • C. McLaren, MI • J. McLaren, MI • M. McMullin, MI • M. Migdal, MI • J. Mikesell, IL • R. Mizrahi, NY • J. Molinari, MI • L. Montes, NY • W. Nagy, TX • J. Nash, MI • A. Nazarian, MI • N. Nealis, IL • C.J. Noe, MD • E. Odenweller, OH • R. Oshrain, NY • J. Paris, TX • D. Parsons, NY • M. Patel, MI • T. Pieper, WY • W. Piskowski, MI • D. Pitak, MI • S. Pomerance, MI • C. Price, TX • D. Qualliotine, NC • G. Raichelson, Canada • C. Ramsey, FL • K. Rebhan, MI • C. Reed, MI • G. Reskakis, NY • A. Ridall, TX • J. Riggs, MI • P. Sandvick, WI • M. Shapiro, MI • J. Shea, MO • B. Shumaker, NJ • B. Silver, MI • S. Simpson, MI • B. Sims, NY • J. Sinkwitts, MI • J. Smith, MI • R. Smith, NY • M. Sonne, MI • J. Spingarn, FL • R. Stevenson, MI • W. Stevenson, MI • M. Sylvester, CA • P. Symeonides, NY • J. Tabash, MO • S. Tamber, MI • G. Tarantola, FL • H. Tetelman, OH • V. Thompson, MI • C. Trubschenck, CA • P. Tu, CA • G. Udry, MI • S. Ura, NH • L. Vandelaar, MI • H. Vann, MS • W. Walcott, MI • M. Waranowicz, MI • R. Wilkie, MI • S. Williams, MO • R.G. Willis, SC • K. Wilson, MI • D. Wojtowicz, MI • R. Wolf, IN • P. Yaman, MI • H. Yeung, CA • D. Young, MI • S. Young, NY • M. Zahn, MI • J. Zanetti, MI • P. Zanetti, MI • G. Zann, FL • S. Zimmer, MI

LABORATORY CONSULTANTS:

• Apex Dental Milling, MI • Bullring Dental Lab, MI • Centric Dental Laboratory, TX • Cornerstone Dental Studio, Inc., MI • David's Dental Laboratory, NY • Expertec Dental Lab, MI • Heritage Dental Laboratory, IL • Nellmar Laboratory, LLC, MI • Technique Crown and Bridge, Inc., NC