

THE DENTAL ADVISOR™

“Improving Patient Care Through Research & Education”

March 2008

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RATINGS

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



Photography by Chris Brown, Ann Arbor, Michigan

Surface Disinfectants – Update on Sprays and Wipes

Disinfection of operatory surfaces between patients is an important component of an effective infectious disease control program. The routine use of chemical disinfectants and disposable surface covers is therefore warranted in certain circumstances. Most dental care facilities use a combination of covers and liquid germicides. This issue of THE DENTAL ADVISOR reviews disinfectant sprays and wipes.

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Surface Disinfectants

Chemicals Approved as Surface Disinfectants

Alcohols

- VIRAGUARD

Quaternary ammoniums + alcohol

- CaviCide
- DisCide ULTRA
- SaniTex Plus Spray

Sodium bromide or sodium hypochlorite

- Dispatch
- Microstat 2

Tincture of Iodine

Iodophors

- IodoFive

Synthetic phenolics (water- or alcohol-based)

- Asepti-steryl Aerosol
- Citrace
- COE Spray II/COE Foam II
- ProSpray

Combinations of these agents

Cleaning vs. Pre-cleaning

Published infection control recommendations have historically attempted to provide clinicians with guidance as to what is required. For example, the CDC and ADA have reinforced this concept in numerous published guidelines (www.cdc.gov), as shown in the following representative descriptions:

Cleaning

Cleaning is the physical removal of debris.

- It results in a reduction in the number of microorganisms present.
- It removes organic matter, such as blood and tissue, and other debris, which may interfere with sterilization and disinfection. In some instances, cleaning is all that is necessary.

Dental Instrument Washing Machines

GW2050H Thermal Disinfection Washer – SMEG Instruments

GW3050HD Thermal Disinfection Washer – SMEG Instruments

Hydrim C51w – SciCan

Hydrim L110w – SciCan

Miele Dental Washer Disinfector – Miele Professional

A washer-disinfector is an automatic unit that uses a high-temperature cycle, rather than a chemical bath, to clean and thermally disinfect instruments.

Ultrasonic Cleaning Machines

Biosonic Ultrasonic Cleaning System UC95, UC300, UC100XD, and UC125 – Coltène/Whaledent

Clean & Simple Ultrasonic Cleaning System – Tuttnauer

Health Sonics T3.3C – Health Sonics

Pro Sonic 300, 600, and 1000 – Sultan Healthcare

Quantrex 140 and 310 – L & R Manufacturing

Soniclean M150, M250, and M550 – Midmark

Sonix IV Ultrasonic Cleaner SE126, SE116, SE236 – Sonix IV

Sonix IV Ultrasonic Cleaner SS192, ST144, ST136, ST126, and ST134 – Sonix IV

SweepZone Ag 200 and 310 – L & R Manufacturing

An ultrasonic cleaner uses waves of acoustic energy to loosen and break-up debris.

Pre-cleaning

- The preliminary step before sterilization or disinfection is referred to as pre-cleaning.
- Pre-cleaning is an essential step because sterilization and disinfection procedures may not be effective if items have not been cleaned first.

Disinfection

- The destruction of pathogenic and other kinds of microorganisms by physical or chemical means.
- Disinfection is less lethal than sterilization because it destroys most recognized pathogenic microorganisms, but not necessarily all microbial forms, such as bacterial spores.
- Disinfection does not ensure the margin of safety associated with the sterilization process.

Sterilization

- The use of a physical or chemical procedure to destroy all microorganisms including large numbers of resistant bacterial spores.

Spray-Wipe-Spray Technique

Infection control protocols and recommendations for environmental surface asepsis promote compliance with a basic principle: clean surfaces thoroughly before disinfection. Up until a few years ago, virtually all surface disinfectant products were used in a two-step procedure, historically termed the “spray–wipe–spray” technique. Available products were comprised of either water-based or alcohol-based antimicrobial chemical solutions.

Unfortunately, as with usage of any regulated chemical agent, problems arose in patient care facilities concerning those environmental disinfectants that were applied by spraying directly onto surfaces. Misuse or overuse of chemical preparations by certain clinical personnel was a common occurrence, in many instances because of a lack of confidence in manufacturer’s directions for use.

Helpful Hints on Using Disinfectants Correctly

- Understand the principals of cleaning and disinfection.
- Read and follow the label instructions.
- Read and keep a copy of the MSDS.
- Wear the correct protective equipment.
- Use the appropriate product for what you are cleaning and disinfecting.
- Do not use products not specifically designed and tested for dental offices.
- Do not mix products.
- Do not overspray or overuse.
- Products high in alcohol (>40%) should only be used on pre-cleaned surfaces.

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Surface Disinfectants: Sprays

Product	Company	Disinfectant Type	Packaging	Requires Dilution	Bactericidal, minutes	Fungicidal, minutes	Tuberculocidal, minutes	Virucidal, minutes	Cost per ml
Amphyl	Sultan Healthcare	Alcohol-based (Dual) Phenolic	Spray can	RTU	10	10	10	10	\$0.05
AseptiCare TB + II	Huntington Products by EcoLabs	Dual or Synergized Quaternary	Spray bottle	RTU	10	10	6	10	\$0.02
Asepti-HB	Huntington Products by EcoLabs	Dual or Synergized Quaternary	Spray bottle	RTU	10	10	6	10	\$0.02
Asepti-steryl Aerosol	Huntington Products by EcoLabs	Alcohol-based (Dual) Phenolic	Spray can	RTU	10	10	10	10	\$0.03
BIREXse	Biotrol International	Water-based (Dual) Phenolic	Powder concentrate	Mix w/water	10	10	10	10	\$0.95
CaviCide	TotalCare featuring Metrex Products (Kerr Corporation)	Dual or Synergized Quaternary	Spray bottle	RTU	3	3	3	2	\$0.01
Cetylcide II	Cetylite	Dual or Synergized Quaternary	Liquid concentrate	Mix w/water	10	5	10	10	na
Clorox Disinfecting Spray	H. J. Bosworth	Sodium Hypochlorite	Spray bottle	RTU	10	5	2	10	\$0.02
Clorox Germicidal Spray	H. J. Bosworth	Sodium Hypochlorite	Spray bottle	RTU	10	5	2	10	\$0.01
COE Foam II	GC America	Alcohol-based (Dual) Phenolic	Spray can	RTU	10	10	10	10	\$0.02
COE Foam II	GC America	Alcohol-based (Dual) Phenolic	Pump	RTU	10	10	10	10	\$0.02
DisCide Disinfectant Spray	Palmero Health Care	Alcohol-based (Dual) Phenolic	Spray can	RTU	10	10	10	10	\$0.03
DisCide Germicidal Foaming Cleaner	Palmero Health Care	Water-based (Dual) Phenolic	Spray can	RTU	10	10	10	10	\$0.01
DisCide ULTRA	Palmero Health Care	Dual or Synergized Quaternary	Spray bottle	RTU	1	1	1	1	\$0.01
DisCide V	Palmero Health Care	Dual or Synergized Quaternary	Spray bottle	RTU	10	10	10	10	\$0.01
DisCide-TB	Palmero Health Care	Water-based (Dual) Phenolic	Spray bottle	RTU	10	10	5	10	\$0.01
DISPATCH	Caltech Industries	Sodium Hypochlorite	Spray bottle	RTU	1	10	30 sec	1	\$0.02
GC Spray-Cide	GC America	Dual Quaternary	Spray bottle	RTU	10	10	6	10	\$0.01
IodoFive Surface Disinfectant/Cleaner	Certol International	Iodophors	Liquid concentrate	Mix w/water	10	10	10	10	\$0.37
Lysol I.C. Disinfectant Spray	Reckitt Benckiser (Sultan Healthcare)	Dual or Synergized Quaternary	Spray can	RTU	10	10	10	10	\$0.02
Lysol I.C. Foam	Reckitt Benckiser (Sultan Healthcare)	Ammonium Chloride	Spray can	RTU	10	10	10	10	\$0.01
Microstat 2	Septodont	Sodium Bromide and Chlorine	Tablets	Mix w/water	5	5	5	5	\$0.01

Product	Company	Disinfectant Type	Packaging	Requires Dilution	Bactericidal, minutes	Fungicidal, minutes	Tuberculocidal, minutes	Virucidal, minutes	Cost per ml
Opti-Cide-3	Micro-Scientific	Aqueous Isopropanol/ Synergistic Dual Chain Quaternary	Pump, spray bottle	RTU	3	3	3	3	\$0.01
Optim 33 TB	SciCan	Accelerated Hydrogen Peroxide	Liquid concentrate	Mix w/water	1	10	5	1	\$0.01
ProSpray	Certol International	Water-based (Dual) Phenolic	Spray bottle	RTU	10	10	10	10	\$0.01
ProSpray C-60	Certol International	Water-based (Dual) Phenolic	Liquid concentrate	Mix w/water	10	10	10	10	\$0.08
Sanitex Plus Spray	Crosstex International	Dual or Synergized Quaternary	Spray bottle	RTU	10	10	6	10	\$0.02
SURFLETS	Sultan Healthcare	Sodium Bromide and Chlorine	Concentrated tablets	Mix w/water	5	5	5	5	na
VIRAGUARD	Veridien	Isopropanol Alcohol	Spray bottle	RTU	10	10	5	10	\$0.02

RTU = Ready to use

When people were asked why they over sprayed operatory surfaces after certain types of “high risk” patients were treated, the answer usually was because they wanted to be certain that all potential pathogens were killed. At the very least, operatory surfaces became discolored or their integrity compromised from routine overexposure to harmful chemicals. More serious problems were also noted when personnel who were repeatedly exposed to chemical aerosols and sprays developed a variety of adverse clinical symptoms. Respiratory problems such as wheezing or sneezing, development of allergies, ocular irritation, and headaches were the most prominent reactions which were reported in these instances.

Effects of Overspraying Disinfectant Sprays

- Airborne allergic sensitization and reactions
- Respiratory difficulties
- Conjunctival problems
- Dermatitis on unprotected hands
- Destruction of reusable equipment (fabric, plastic or metal components)

It is also important to note here that the correct use of a liquid spray surface disinfectant is an appropriate and an effective routine infection control practice. The frequency of toxicity reactions in many practices often results in a constant re-evaluation of what disinfectant product is being used in the hope that the zealous aerosolization of chemicals by one or more employees can be minimized by selection of a less toxic liquid.

Disinfecting Wipes

The past few years have seen a rather dramatic shift in the both the marketplace and dental practices concerning the approach for environmental surface cleaning and disinfection. Disposable cloths or wipes, pre-saturated with disinfectants, have become more popular. In fact, many dental practices utilize these as a routine component of their infection control routine. When used correctly, cloth or paper disinfectant wipes are an effective alternative for sprays when cleaning and disinfecting environmental surfaces.

For those who have incorporated disposable wipes into their practice regimen, one major benefit is reported by clinical personnel. Because these products are saturated with chemical cleaners and antimicrobial agents, they decrease the amount of chemical sprayed in the environment. Many individuals who previously experienced chronic respiratory problems and/or headaches from misuse of spray products have found rapid relief from symptoms when using disinfectant wipes.

Surface Disinfectants: Wipes

Most of the originally available disinfectant wipes contained a range of isopropanol concentrations in addition to other chemical agents (i.e. quaternary ammoniums), which functioned primarily as surface cleaners. However, later marketed disposable wipe products contain other antimicrobials, which also can achieve tuberculocidal activity on treated surfaces in 1-5 minutes. Sodium hypochlorite, phenolics, and hydrogen peroxide are representative of these later generation wipes.

Even though clinical facilities have considered adoption of this new technology, a commonly encountered problem when these products were first introduced was that the liquid disinfectant they delivered evaporated quickly and was not able to keep the surfaces wet for the required tuberculocidal disinfection contact time. A number of changes were subsequently made by manufacturers to address this concern. These changes were modifications of the composition and thickness of the fabric and amount of liquid absorbed into the wipe.

Since the principle of ‘clean it first’ remains a cornerstone of environmental surface disinfection, two cloths must be used - one for cleaning and another for disinfecting the surface. This has become known as the “wipe-discard-wipe” technique. While that may seem like a logical extension of the original spray-wipe-spray approach, some time may be required before personnel feel comfortable exchanging their spray bottles for disinfectant wipes.

Note - While disinfectant cloths may be a convenient alternative to spraying chemicals to clean and disinfect surfaces, the product used in a clinical setting must meet all of the requirements of a traditional liquid disinfectant (e.g., EPA registration) and the user is ultimately responsible for ensuring that the product is used correctly.

Product	Company	Disinfectant Type	Bactericidal, minutes	Fungicidal, minutes	Tuberculocidal, minutes	Virucidal, minutes	Cost per ml
Asepti-Wipe II	Huntington Products by EcoLabs	Dual or Synergized Quaternary	10	10	6	10	\$0.07
CaviWipes Disinfecting Towelettes	TotalCare featuring Metrex Products (Kerr Corporation)	Dual or Synergized Quaternary	3	3	3	2	\$0.06
Clorox Disinfecting Wipes	H. J. Bosworth	Sodium Hypochlorite	10	5	2	10	\$0.24
Clorox Germicidal Wipes	H. J. Bosworth	Sodium Hypochlorite	10	5	2	10	\$0.23
DisCide ULTRA Disinfection Towelettes	Palmero Health Care	Dual or Synergized Quaternary	1	1	1	1	\$0.60
DISPATCH Hospital Cleaner Disinfectant Towels with Bleach	Caltech Industries	Sodium Hypochlorite	1	10	30 sec	1	\$0.32
EZ-Kill Disinfecting Wipes	HealthLink	Isopropanol Alcohol	10	10	5	10	\$0.06
ProSpray Wipes	Certol International	Water-based (Dual) Phenolic	10	10	10	10	\$0.12
Sani-Cloth HB	Professional Disposables International (PDI)	Quaternary ammonium	10	10	10	10	\$0.07
Sani-Cloth Plus Germicidal Disposable Clothes	Professional Disposables International (PDI)	Dual or Synergized Quaternary	5	5	5	5	\$0.06
Sanitex Plus Wipes	Crosstex International	Dual or Synergized Quaternary	10	10	5	10	\$0.05
Super Sani-Cloth	Professional Disposables International (PDI)	Dual or Synergized Quaternary	10	5	2	10	\$0.06
VIRAGUARD Towelettes	Veridien	Isopropanol Alcohol	10	10	5	10	\$0.06



OptiBond All-In-One + + + + +

Kerr Corporation
800.537.7123 • 714.516.7400
www.kerrdental.com

Description

OptiBond All-In-One is a 7th-generation bonding agent and is indicated for etching, priming, and bonding of enamel and dentin in a single step for both direct and indirect procedures. The manufacturer recommends the use of *Maxcem* or *NX3* with indirect restorations whenever light accessibility is limited or absent. Application requires two, 20-second surface scrubs followed by 5 seconds of a gentle air stream before a 10-second light cure. **OptiBond All-In-One** is available in a Bottle Kit with one, 5-ml bottle of adhesive; three, 0.18-ml unit-doses of adhesive; 50 applicator brushes and accessories. The unit-dose is also available in 50-count and 100-count packages. **OptiBond All-In-One** was evaluated by 27 consultants in over 1200 restorative procedures. This product received a 96% clinical rating.

Suggested Retail Cost
• \$117.00/Bottle Kit

Product Features

Consultants rated the ease of dispensing, application, and versatility of **OptiBond All-In-One** highly. The unit-dose package, viscosity and surface wetting also were rated very high. The time for a double application of bonding agent seemed long

Consultants' Comments

- ♦ “Laminated instructions are great.”
- ♦ “Very easy technique - use enough to develop a uniformly shiny bonding surface.”
- ♦ “Great all-around product.”
- ♦ “Doesn’t stick to metal matrix bands.”
- ♦ “Bottle may deliver too many drops.”

to some consultants, whereas others felt the process was faster since etching was not needed. There were no reported cases of postoperative tooth sensitivity. The solvent in **OptiBond All-In-One** includes acetone which brings some odor to the product. Eighty-one percent of consultants found **OptiBond All-In-One** equivalent to or better than their current bonding agent, 63% would switch, and 85% would recommend it to a colleague.

Clinical Tips

- Bevel enamel cavosurfaces of direct preparations whenever possible for improved etching efficacy and bond strength.
- Remove pooled solution from preparation before curing - excess material could prevent complete seating of indirect restorations.
- Use light air pressure to disperse the agent.
- Scrub the tooth surface when applying the bonding agent.

Request a sample at www.dentaladvisor.com.

Academy of Operative Dentistry: The Award of Excellence - 2008
Dr. William A. Gregory

THE DENTAL ADVISOR would like to congratulate **Dr. William A. Gregory** on being awarded the **Academy of Operative Dentistry Award of Excellence** during the 143rd Chicago Midwinter Meeting in February. This is a wonderful and deserved milestone for a man that has dedicated himself to improving dentistry during his 52 year career.

Since 1983, **Dr. Gregory** has played a critical role in the development and growth of **THE DENTAL ADVISOR**. His dedication to the field of dentistry and the people it serves has taken him from the US Navy during the Korean War to returning to the University of Michigan after 25 years of private practice to earn an advanced degree in restorative dentistry. **Dr. Gregory** then went on to teach a new generation of dental students; imparting upon them his love for dentistry and his expertise in the field.

THE DENTAL ADVISOR is honored to have **Dr. Gregory** as a founding member and integral part of our team. His dental expertise, humanitarianism, teaching excellence and dedication to the profession continues to be a gift that he shares with all of us. We are grateful to **Dr. Gregory** for his contributions to our team, and to dentistry. ***Congratulations on a most deserved honor!***



GC FujiCEM Automix + + + + 1/2

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



Description

GC FujiCEM Automix is a radiopaque, fluoride-releasing, resin-modified glass ionomer cement. The auto-mix delivery system with mixing tip allows dispensing of the cement directly into the restoration. Optionally, the cement can be dispensed onto a pad and hand mixed before placement into the restoration. The working time is 2.25 minutes from the start of the mix. Final finishing of the restoration can be done after 4.5 minutes. The cement can be used for cementation of all types of metal-, resin- and zirconia-based inlays/onlays, crowns and bridges, and metal posts. The starter kit contains two, 7.2-ml cartridges of cement; the *Paste Pak Dispenser*; and 44 mixing tips. Thirty consultants evaluated *GC FujiCEM Automix* in 520 clinical applications. This product received a 94% clinical rating.

Suggested Retail Cost
• \$205.50/starter kit

Product Features

GC FujiCEM Automix cement is the same formulation as the original *GC FujiCEM* but it includes a mixing tip to allow dispensing of the cement directly into the restoration, eliminating the need for mixing on a pad. Consultants report that the cartridge loads easily into the *Paste Pak Dispenser* and minimal pressure is required to extrude the cement through the mixing tip. The mixed cement has a creamy consistency with an excellent viscosity, but the restoration must be seated with moderate pressure before the cement begins to gel. The auto-mix feature provides sufficient working time since no hand mixing is required, resulting in completely seated restorations. The lack of postoperative sensitivity was rated as very good. Eighty-eight percent of the consultants rated *GC FujiCEM Automix* equal to



Consultants' Comments

- ♦ "I love this cement."
- ♦ "This is my cement of choice for use with implant crowns."
- ♦ "Cleanup is easy when the excess is removed at the gel stage."
- ♦ "Very convenient to dispense the cement directly into the restoration."
- ♦ "Adjust the 'stop' on the dispenser to customize the amount dispensed."

or better than the cement they were currently using, 69% would switch to this product, and 88% would recommend it.

Clinical Tips

- Remove the mixing tip after use and place the cover on the cartridge. Failure to do so will result in a tip that is difficult to remove.

View 2008 Preferred Product list at www.dentaladvisor.com.

Senior Consultant Profile: Dr. Virginia Plaisted

Dr. Virginia Plaisted graduated from Case Western Reserve University with a D.D.S. in 1981 after which she relocated to the Albany, NY area and practiced privately for 20 years. **Dr. Plaisted** has continued her education as a professional. She earned a fellowship from the Academy of General Dentistry 1998 and has been selected as one of 18 members of the Council of Innovative Dentistry. She is also an active member of the ADA, AGD, AACD, and her local dental society. **Dr. Plaisted** also lectures on topics from digital solutions to impression taking.

Currently, **Dr. Plaisted** is practicing in Delmar, NY, where she makes her home with her husband and children.



GC Fuji IX GP EXTRA + + + + 1/2

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

Description

GC Fuji IX GP EXTRA is a conventional glass ionomer restorative that chemically bonds to both enamel and dentin. The *EXTRA* designation refers to enhancements in setting time, fluoride release, strength, and translucency. The material has a high fluoride release, non-etch surface preparation, and biocompatibility. The introductory kit comes with 10 unit-dose capsules each of shades A2, A3, A3.5, B1, and B3; cavity conditioner; capsule activator/applier gun; and *GC Fuji Coat LC* light-cured protective coating. Shades A1, B2, and C4 are also available. The capsules are protected by individual foil envelopes; storage in a cool, dark place is recommended. The working time for *GC Fuji IX GP EXTRA* is 1.25 minutes from the start of the mix. Finishing can begin approximately 2.5 minutes after the start of mixing. It is recommended that *GC Fuji Coat LC* be placed immediately after placement and then again after finishing and polishing. This step is recommended to prevent dehydration during the setting of *GC Fuji IX GP EXTRA* and to have a post-polish protective layer present during the final maturation of the chemical reaction. Twenty-nine consultants evaluated *GC Fuji IX GP EXTRA* in over 450 restorations. This product received a 93% clinical rating.

Suggested Retail Cost
• \$280.00/capsule assortment starter package

Product Features

GC Fuji IX GP EXTRA has a mixing and delivery system that is familiar and comfortable to all consultants experienced in using glass ionomers. The packaging and the consistent mix were highly rated. Consultants found having multiple shades is very useful, deeming the esthetics to be excellent for a glass ionomer. The increased translucency allowed consultants to use this product in the anterior region with esthetic results. *GC Fuji IX GP EXTRA* is especially useful for cervical restorations, where



Consultants' Comments

- ♦ "Excellent finishing and esthetics for a glass ionomer!"
- ♦ "I enjoyed the versatility of its use. Time and time again I looked for different ways to incorporate this product into daily use."
- ♦ "I would really prefer more material in each capsule, especially when building up a core."

the high fluoride release is important. The lack of postoperative sensitivity was the highest rated category, correlating well with the lack of bonding sensitivity that is present during the placement of glass ionomers. Generally, consultants found *GC Fuji IX GP EXTRA* to be quite sticky initially; however, they noted that when the material is allowed to set slightly, the handling improves significantly. Placing *GC Fuji Coat LC* twice during the procedure was time consuming. Ninety percent of consultants would use *GC Fuji IX GP EXTRA* rather than other restorative materials (amalgam, composite, compomer) in pediatric and geriatric patients. Seventy percent rated *GC Fuji IX GP EXTRA* as equal to or better than their current glass ionomer, 74% would switch, and 85% would recommend it to a colleague.

Request a sample at www.dentaladvisor.com.



Maxcem + + + + +

Kerr Corporation
800.537.7123 • 714.516.7400
www.kerrdental.com

Description

Maxcem is a dual-cured, self-adhesive resin cement packaged in a dual-barrel syringe with auto-mix tips. This radiopaque cement is indicated for cementation of ceramic, resin, and metal inlays, onlays, crowns, bridges, and posts; it is not recommended for veneers. **Maxcem** does not require the use of an etchant, primer, or adhesive, and allows the user to deliver the desired volume of cement directly into the restoration or tooth cavity. Working time is two minutes with total setting time (self-cured) of three minutes. Light curing accelerates setting; curing time varies depending on the type of light used. Refrigeration is required. The **Maxcem** kit contains one, 5-g dual barrel syringe each of white, white opaque, and yellow shades; and two, 5-g syringes of clear shade. In addition, 50 automix tips and 12 *OptiClean Debridors* are included along with manufacturer's instructions, MSDS, and a technique summary card. *OptiClean Debridors* are burs intended to clean the preparation of debris and temporary cement prior to final cementation. **Maxcem** was evaluated by 32 clinical consultants to cement over 850 restorations. This product received a 97% clinical rating.

Suggested Retail Cost

- \$257.25/value kit
- \$94.65/refill

Product Features

Consultants found the **Maxcem** delivery system to be very easy to use and produced complete, consistent mixes. The working time is adequate for multiple restorations, and the setting time is acceptable. The viscosity of **Maxcem** allows complete seating of restorations and posts. The variety of cement shades is very good

Consultants' Comments

- ♦ "Great product — easy dispensing."
- ♦ "Fantastic all-purpose cement!"
- ♦ "Excess cement is easy to remove."
- ♦ "Using the *OptiClean Debrider* burs requires anesthetizing the tooth unless it is endodontically treated."
- ♦ "Include an elongated tip for post cementation."

for general use. After light curing at the margins, excess cement is easy to remove. Typically, the cement does not cause tooth sensitivity during cementation, and no postoperative sensitivity was reported. Consultants remarked on the versatility of **Maxcem** as an all-purpose cement. Fifty-six percent of consultants found **Maxcem** to be equivalent to or better than their current self-adhesive resin cement, and over half would switch to this cement and recommend it to a colleague.

Clinical Tips

- Use the clear cement with ceramic inlays/onlays for the best color blending of the restoration with the tooth.
- Isolate the tooth thoroughly to maintain a dry field and prevent the patient from tasting the cement.
- After seating the restoration, allow **Maxcem** to sit undisturbed for 1.5 minutes before light curing.
- Tack cure at the margins for 2 seconds from the facial and lingual. Curing too long makes removal of excess cement difficult.
- Remove excess cement and floss contacts before complete curing.

Request a sample at www.dentaladvisor.com.

Product Update

GRADIA DIRECT X (GC America • www.gcamerica.com) is a light-cured, direct composite restorative, which incorporates a new nano-filler for a higher radiopacity than **GRADIA DIRECT**. The updated material is designed to allow esthetic restorations using a single shade. **GRADIA DIRECT X** is softer than some other universal composites for improved handling. The eleven standard shades and one opaque shade provide an adequate shade range, and the final esthetics have been excellent. **GRADIA DIRECT X** is available in unit-dose tips and syringes.

TurboMAX + + + + ½

DENTSPLY Raintree Essix
800.883.8733 • 504.488.0080
www.essix.com



Description

TurboMAX is an alginate auto-mixer designed to provide a consistent, homogenous mix with fewer voids and less waste. The countertop unit measures 9.5" x 11" x 12" (24 x 28 x 30 cm) and weighs about 34 pounds (15.4 kg). **TurboMAX** has a sleek design and an illuminated control panel. Alginate powder is placed in the mixing cup and water is added from the water dosing bottle. After stirring the powder and water for two seconds, the cap is placed on the mixing cup, the cup is loaded into the machine, and a mixing time is selected. The mixing times are preset at 8, 10 and 12 seconds. After the **TurboMAX** has stopped, the lid is opened and the mixing cup removed. The mixed alginate can then be removed and spatulated into a tray. The unit comes with four mixing cups, a spatula, mixing stick, water dosing bottle, and magnetic accessory basket. Twenty-one consultants used **TurboMAX** in over 500 procedures. This product received a 91% clinical rating.

Suggested Retail Cost

- \$1,995/unit

Equipment Features

TurboMAX has several different selections for capacity and mixing time to achieve effective and consistent mixing. Dental assistants and hygienists found the unit to be user friendly, and less messy and easier than conventional bowl and spatula mixing. The location of the control panel allows the operator to easily make adjustments to amounts and times of mixes. Hygienists and assistants also found the mixed alginate to be smooth, creamy and homogenous as well as easy to remove from the mixing cup and place into the alginate tray. Impressions were reported to be without voids and bubbles and of a high quality. Cleanup of the mixing cup requires little effort as does the placement of the lid. Removing the lid from the mixing cup was reported to be difficult for some, and others noted that the unit was bulky and noisy. Eighty percent of consultants evaluating the **TurboMAX** were hand mixing alginate. Eighty-six percent found the unit to be better than their current method of mixing alginate, and 85% would recommend the unit to a colleague.



Consultants' Comments

- ♦ "Very easy to use and clean - this unit really saves time."
- ♦ "This is the best mixer on the market."
- ♦ "I get a smooth mix every time."
- ♦ "The mixing cup lid twists in the opposite direction than one would ordinarily turn to open a container."

Clinical Tips

- Place the unit in a central location in the office.
- By pressing the memory select up and down buttons simultaneously, the unit will beep twice and the display will flash twice, resulting in an optional 16-second mixing time.
- Use the 8-second mix for fast-setting alginate.
- **TurboMAX** may be used with any alginate material.

View 2008 Product awards and Preferred Product list at www.dentaladvisor.com.

Uni-Grip + + + +

DENTSPLY Rinn
800.323.0970
www.rinncorp.com

Description

Uni-Grip is a disposable radiography holder in two styles. **Uni-Grip for Digital Sensors** has adhesive wings that wrap around to accommodate all #1 and #2 hard sensors. **Uni-Grip for Film and Phosphor Plates** has a repositionable adhesive backing for application on sizes #1 and #2 imaging media. **Uni-Grip** has a unique bite tab that slides and rotates, allowing it to be centered for bitewings or slid to the edge for horizontal or vertical periapical images. Colored lines on the holder guide the user to the correct position of the bite tab for each of these image orientations. The **Uni-Grip AR** positioning ring, available separately, fits all **Uni-Grip** holders and aids in positioning the x-ray cone. **Uni-Grip** was evaluated in 425 radiographic procedures by 16 consultants, including dental hygienists and dental assistants. This product received an 81% clinical rating.

Suggested Retail Cost
• \$51.00/50 **Uni-Grip** holders
• \$39.99/**Uni-Grip AR** kit

Product Features

Uni-Grip is versatile for all types of intraoral images. Consultants

Consultants' Comments

- ♦ *"The color-coding helps in training new assistants."*
- ♦ *"The instructional DVD is very helpful."*
- ♦ *"Bite tab is rigid and durable."*
- ♦ *"The alignment ring takes the guesswork out of cone positioning."*
- ♦ *"Holds sensor stable."*
- ♦ *"Bite tab is too long for lower molars."*
- ♦ *"The adhesive only works for a few uses; the paper backing gets soggy."*

reported they could change bite tab positions easily, and the colored lines were a good visual aid. With digital imaging, **Uni-Grip** is adhered to the barrier-covered sensor and remains in place for all images. A single holder can be used for an entire full-mouth series. With film/phosphor plates, **Uni-Grip** must be applied to a fresh media for each image. While the holder itself is very durable, the adhesive becomes ineffective after a few changes. **Uni-Grip** holders are less bulky in the mouth than many other digital sensor holders, but more bulky than some film holders. **Uni-Grip AR** attaches directly to the bite tab on the holder, and alignment is color-coded to the lines on the holder. Overall, consultants found **Uni-Grip** to be an innovative product. Fifty percent of the consultants rated **Uni-Grip** equivalent to or better than the current holder they were using and would recommend it to a colleague.

Prime-Dent® Nano-Hybrid Light Cure Composite + + + + 1/2

Prime Dental Manufacturing, Inc.
773.539.5927
www.primedentalmfg.com

Description

Prime-Dent Nano-Hybrid Light Cure Composite is a highly polishable, Bis-GMA nano-hybrid composite. It is radiopaque, releases fluoride and is filled 74% by weight and 59% by volume with an average particle size of 7 nanometers. It is recommended for Class III and V restorations, for selected Class IV restorations, and for use in Class I restorations. It is available in 4.5-g syringes in all 16 Vita shades along with Incisal and Opaque shades. The kit evaluated contained one syringe each of shades A1, A2, A3, A3.5 B2, C1, and OP (Opaque) along with 7 ml of self-etch adhesive, 7 ml of Surface Sealant, 4-g syringe of 37% phosphoric acid, and accessories. **Prime-Dent Nano-Hybrid Light Cure Composite** was evaluated by eight consultants in 114 restorations. This product received a 90% clinical rating.

Suggested Retail Cost
• \$150.00/kit

Product Features

The kit that was evaluated contained syringes of the

Consultants' Comments

- ♦ *"The kit is complete and includes a surface glaze which I use routinely."*
- ♦ *"The shades are slightly lighter when placed but match better after curing."*
- ♦ *"The composite is stiff but can be molded and is not sticky."*
- ♦ *"The opaque shade is very white and difficult to mask - use in a thin layer."*

Prime-Dent Nano-Hybrid Light Cure Composite, and the shades provided were sufficient for the majority of clinical cases. The stiffness of the composite makes dispensing from the syringe somewhat difficult; but the composite is easy to control during placement, is not sensitive to ambient light, and adapts well to cavity preparations. The material does not stick to the placement instruments and can be contoured to the desired shape before curing. The shade match after curing is consistent with the selected Vita shade. The composite was highly rated for blending with tooth structure, radiopacity, and ease of finishing. **Prime-Dent Nano-Hybrid** can be finished and polished to a high luster with conventional techniques. Eighty-six percent of the consultants rated **Prime-Dent Nano-Hybrid Light Cure Composite** equivalent to or better than the composite they were currently using, 71% would switch to **Prime-Dent Nano-Hybrid Light Cure Composite** and 86% would recommend it.

www.dentaladvisor.com



3M ESPE
800.634.2249
www.3MESPE.com



3M ESPE Protemp Crown Temporization Material + + + + 1/2

Description

3M ESPE Protemp Crown Temporization Material is a set of pre-formed, light-cured composite crowns. The kit contains 42 individually wrapped crowns in nine sizes for molars, premolars and canines in one universal shade. The appropriate crown is selected and trimmed with scissors to achieve the proper height. The malleable crown is then molded onto the preparation with finger pressure. Once adaptation is complete, the patient is instructed to bite on the crown to obtain proper occlusion. The crown is then light cured for 2-3 seconds from the buccal, lingual and occlusal aspects. The **Protemp Crown** is removed and post-cured for an additional 1 minute. After curing, the crown is finished where necessary with a carbide bur and polished if needed. The crown is cemented with temporary cement, such as **3M ESPE RelyX Temp NE**. Twenty-five consultants used **Protemp Crown** to temporize 345 teeth. This product received a 95% clinical rating.

Suggested Retail Cost
• \$399.00/kit

Product Features

The majority of consultants found the packaging and instructions to be adequate. The selection of sizes and shapes of the crowns is sufficient. The universal shade is similar to Vita A2. The molar crowns have a slightly full contour and could be more anatomical. Crown size tools are included in the kit, although many consultants found that they did not need to use them once a few crowns were placed and experience was gained. The crowns are easy to light-cure. Trimming and shaping the margins are easily accomplished. The fit to the tooth was rated as good, although some consultants experienced retention failures of crowns that were not adapted well to the tooth preparations. Patients did not comment on any odor or taste. Slight discoloration of the crowns during the temporization period was reported by a few consultants but it was not noticed by the patients. Two-thirds of the consultants would switch to **3M ESPE Protemp Crown Temporization Material** and 80% said they would recommend it to a colleague.



Consultants' Comments

- ♦ *"Excellent product and easy to use."*
- ♦ *"Protemp Crown saves time - it takes about 4 minutes to select, trim, contour, light-cure, finish, and cement a crown."*
- ♦ *"Patients liked not having an impression taken for the temporary."*
- ♦ *"Great product to use on fractured teeth."*
- ♦ *"Very good radiopacity."*
- ♦ *"A must for emergency build-ups."*
- ♦ *"I would like to have lighter shade."*

Clinical Tips

- Use finger pressure to achieve good margin adaptation and firm proximal contacts. This technique also demarcates the outline of the margins, making it easier to trim the crown.
- Once adaptation is achieved, have the patient bite down to achieve good occlusion and minimize occlusal adjustment. Light cure from the facial aspect for 3 seconds, then from the lingual and the occlusal aspects.
- Choose the smallest size that will fit the tooth for the best internal adaptation.
- **Protemp Crown** can be relined with a composite provisional material such as **Protemp Garant**.

For additional information and product technique video, visit www.dentaladvisor.com.

Clearfil S³ BOND - Sensitivity Study

Kuraray America, Inc.
800.879.1676 • 212.986.2230
www.kuraraydental.com



Description

Clearfil S³ BOND is a 7th-generation self-etching primer/adhesive in a single bottle. It is indicated for bonding light-cured composite restorations, porcelain repair, desensitizing indirect preparations, and desensitizing dentin. **Clearfil S³ BOND** is applied to the tooth for 20 seconds, followed by strong air and high-volume suction to evaporate the solvent and is light cured for 10 seconds. Refrigeration is recommended for overnight or long-term storage. **Clearfil S³ BOND** is available in a 4-ml bottle or in 0.1-ml single-dose applicators.

Suggested Retail Cost

- \$109.99/4-ml bottle
- \$231.99/100 single-dose applicators

Purpose

To determine the effectiveness of **Clearfil S³ BOND** as a desensitizer for general (cervical) tooth sensitivity and desensitization following scaling/root planing (SRP).

Clinical Evaluation Protocol

A. General Sensitivity

- Forty patients with general tooth sensitivity were treated with the application of **Clearfil S³ BOND** according to the manufacturer's recommendations.
- The level of sensitivity for the 40 patients was determined before treatment, immediately after treatment, and 5-7 days following the application.

B. Scaling/Root Planing

- Thirty patients requiring SRP were identified. Sensitive teeth were reported to the hygienist before SRP, and the study protocol was followed:
 - Ten patients were treated with **Clearfil S³ BOND** before and after SRP.
 - Ten patients were treated with **Clearfil S³ BOND** after SRP only.
 - Ten patients received no application of **Clearfil S³ BOND** in conjunction with SRP.
- The level of sensitivity for all 30 patients was determined before SRP; immediately after SRP; and at 7, 30, 90, and 180 days after the procedure.



Consultants' Comments

- ♦ "Simple one-step chairside procedure for treating dentin hypersensitivity."
- ♦ "The slight yellow tint is helpful in confirming complete coverage."
- ♦ "Fast, easy, and effective!"

Assessment of Sensitivity

The level of sensitivity for all 70 patients was determined using a scale of 1 to 5:

- 1 = severe, persistent sensitivity
- 2 = moderate to mild persistent sensitivity
- 3 = moderate intermittent sensitivity
- 4 = mild, sporadic sensitivity
- 5 = no sensitivity

Clinical Observations

A. General Sensitivity

Clearfil S³ BOND was applied to teeth with reported dentinal hypersensitivity. Sensitivity ratings were based on the patients' reports of discomfort to cold, air, and/or sweet food or drink. After application of **Clearfil S³ BOND**, 98% of patients reported a reduction in discomfort, lasting to the 5- to 7-day recall. Initially, patients rated sensitivity an average of 2 (moderate to mild persistent sensitivity). Immediately after application and 5-7 days following treatment, the average level of sensitivity rated 4 (mild, sporadic sensitivity). One patient reported no change with **Clearfil S³ BOND** application.

Clearfil S³ BOND - Sensitivity Study (continued)

B. Scaling/Root Planing

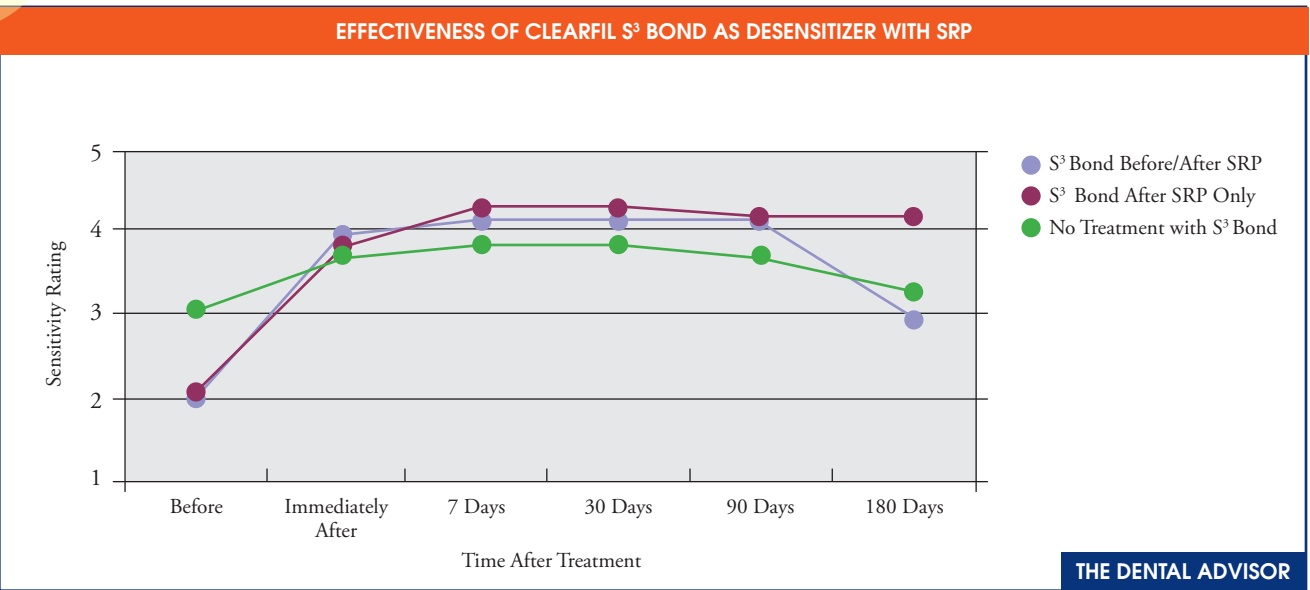
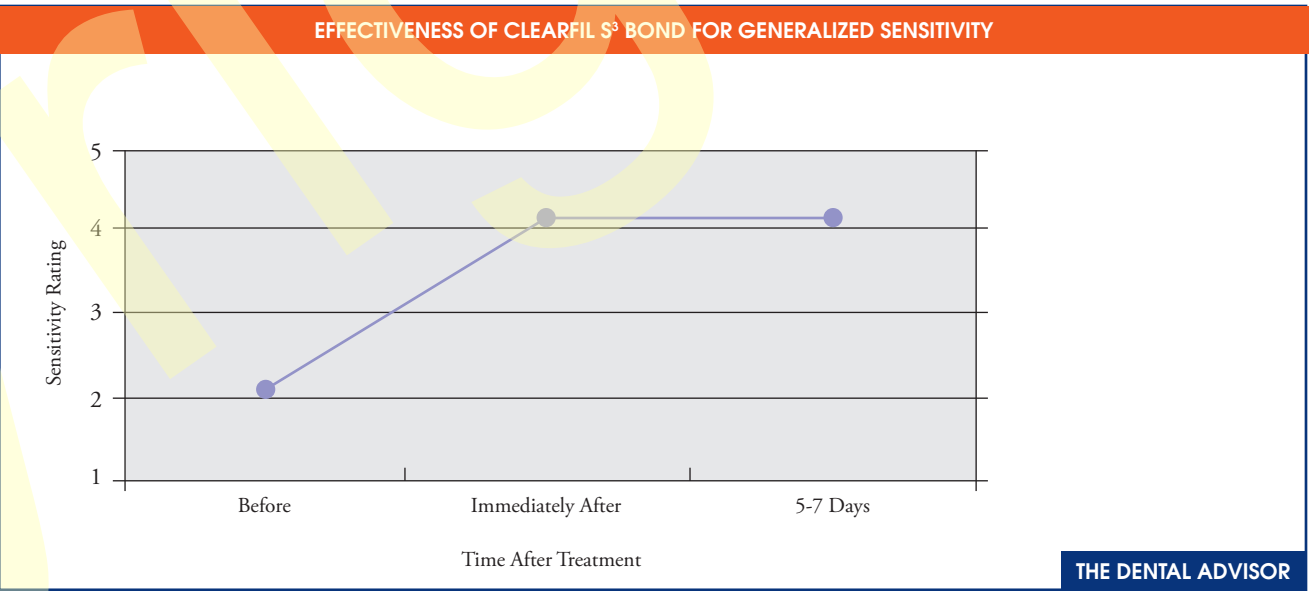
- All patients reported a reduction in sensitivity immediately following SRP when **Clearfil S³ BOND** was applied before and after treatment. On average, patients rated sensitivity before treatment as 2. Immediately after treatment, and lasting until the 90-day recall, patients rated the level of sensitivity as 4. At the 180-day recall, an increase in sensitivity was noted in 45% of the patients.
- All patients reported a reduction in sensitivity immediately following SRP when **Clearfil S³ BOND** was applied after treatment. On average, patients rated sensitivity before treatment as 2, and immediately after application as 4. The reduction in sensitivity remained steady until the 180-day recall.

- Teeth that were not treated with **Clearfil S³ BOND** in conjunction with SRP showed little variability over the 180-day recall period.

Conclusion

Clearfil S³ BOND is a successful desensitizing agent for treatment of general sensitivity and sensitivity associated with SRP. **Clearfil S³ BOND** demonstrated a decrease in generalized tooth sensitivity immediately after application and at the five-to seven-day recall. Further, when applied before and/or after SRP, **Clearfil S³ BOND** reduced sensitivity lasting up to 180 days.

View additional information at www.dentaladvisor.com.



Kerr Corporation
800.537.7123 • 714.516.7400
www.kerrdental.com

Description

NX3 is a light- and dual-cured esthetic resin cement that is compatible with both total- and self-etch adhesives. It contains nano-fillers for improved handling and polishing properties. The choice of delivery system includes an auto-mix, a dual-cured cement (base/catalyst) and a single-syringe, light-cured (base) for cementation of multiple porcelain laminates. The auto-mixing dual-cured syringe can be used for all indirect cementations including laminates, inlays, onlays, crowns, bridges, posts, and office CAD/CAM-fabricated restorations. The amine-free initiator system provides color stability for both the light- and dual-cured cements for long-term esthetics. The water soluble try-in gels are matched to the light- and dual-cured cements. The manufacturer recommends *Optibond Solo Plus* and *Optibond All-In-One* adhesives with **NX3**. The kit contains one each of the following in shades of clear, white and yellow: 1.8-g light-cure syringes; 5-g dual-cured, auto-mix syringes; and 3-g syringes of try-in paste. The kit also includes a 5-ml bottle of silane, mixing tips and a laminated technique guide. Twenty-six consultants evaluated **NX3** in 307 cementation procedures. This product received a 97% clinical rating.

Suggested Retail Cost

- \$416.00/kit
- \$108.00/refill

Consultants' Comments

- ◆ *"Both cements have excellent viscosity."*
- ◆ *"The easiest cement on veneers we have ever used."*
- ◆ *"Very hard set even without using the light for the dual-cured cement."*
- ◆ *"I thought the light-cured cement was too thick."*
- ◆ *"The light-cured syringes seemed small."*
- ◆ *"Make this product with an angled tip adapter for placement."*

Product Features

NX3 is packaged with a compact instruction manual and an excellent laminated instruction card, which has large, easy-to-follow illustrations. Ninety-five percent of the consultants responded that they prefer a resin cement kit containing both the light- and dual-cured cement. The delivery system for the light-cured and the auto-mix, dual-cured cement eliminates the need for mixing and allows placement of the cement directly into the restoration. The viscosity and shade selection of both cements work well for all types of restorations. Working and setting time were judged to be very good. Ease of excess cement removal before the final set, esthetics, and lack of postoperative sensitivity were rated as excellent. The cement is compatible with both total-etch and self-etch adhesives. One hundred percent of the consultants found **NX3** to be equal to or better than the current resin cement they were using, and 100% would recommend it. Eighty-four percent would switch to **NX3**.

Request a sample at www.dentaladvisor.com.

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