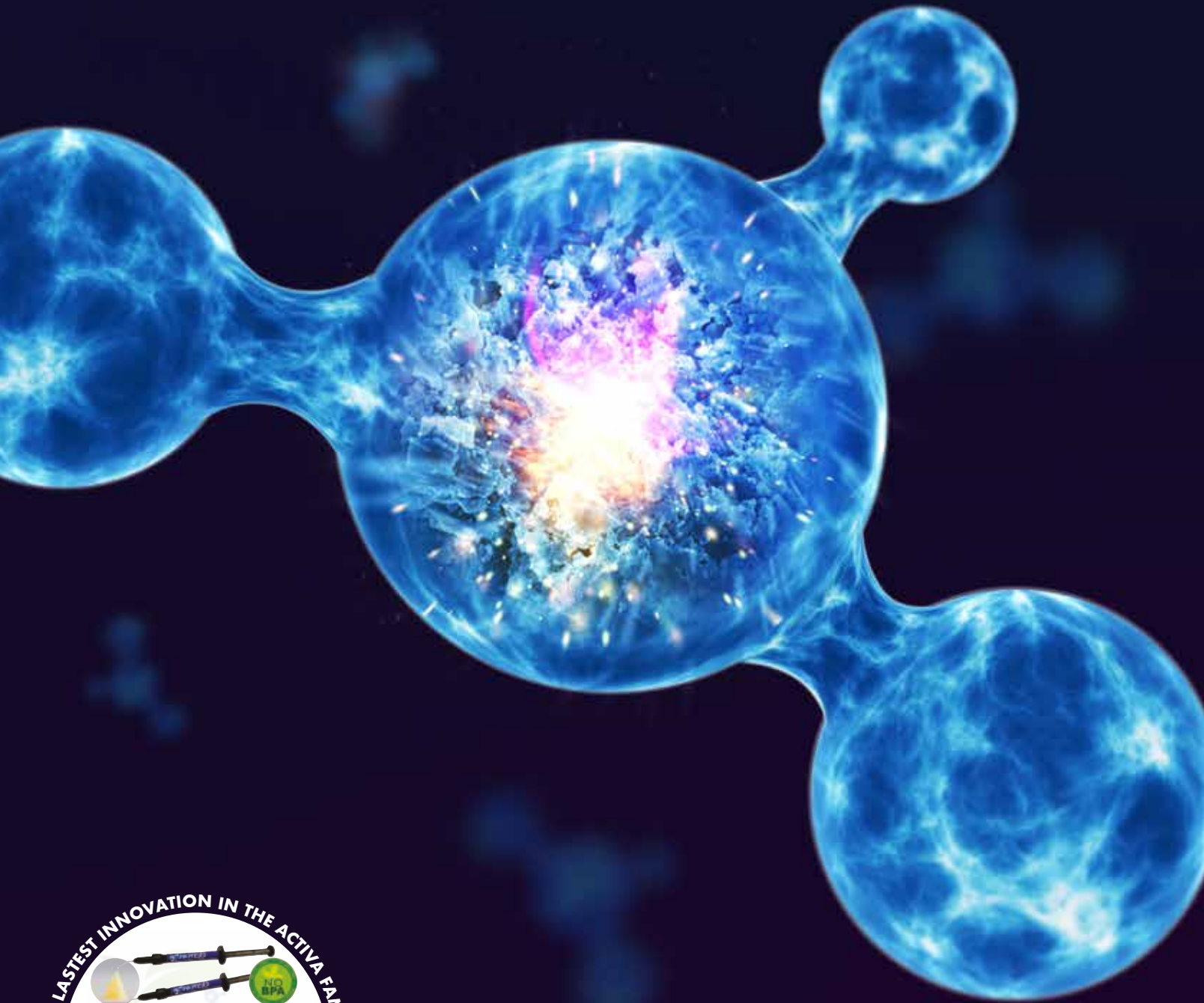


PULPDENT®

DENTAL INNOVATION SINCE 1947



THE LATEST INNOVATION IN THE ACTIVA FAMILY!



ACTIVA[™]Presto[™]

Nature's Magic in a Dental Composite

PAGE 12

2021

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PULPDENT[®]

DENTAL INNOVATION SINCE 1947

Pulpdent's introduction of its patented dual cure ACTIVA BioACTIVE Products in 2013 is a revolutionary development in esthetic bioactive dental restorative materials. In 2020, Pulpdent launched ACTIVA Presto, a patented, mineral-enriched, stackable, light cure composite. These dynamic Activa materials unlock nature's healing powers, mimic the physical properties of tooth structure, behave favorably in the moist oral environment, and maximize the potential for remineralization.



Pulpdent is a family owned dental research and manufacturing company established in 1947 to promote Pulpdent Paste, the first pre-mixed calcium hydroxide paste and first bioactive dental material, world renowned for its use in vital pulp therapy and root canal therapy.

Each year Pulpdent Corporation renews its commitment to investing in research and new technologies, earning the trust of the profession, and inspiring clinicians with new ideas and materials that advance their practice of dentistry and the oral health of their patients.

2 0 2 0

Pulpdent launches ACTIVA Presto, a dynamic, stackable, light cure composite containing calcium, phosphate and fluoride.



2 0 1 3

ACTIVA BIOACTIVE

Development of the award winning, patented, hydrophilic, BPA-free ACTIVA BioACTIVE resins, the first esthetic bioactive dental restorative materials.



2 0 0 5

SAVE THAT TOOTH

Publication of *Save That Tooth* by Dr. Harold Berk, chronicling six decades of heroic dentistry.



1 9 9 6

ISO certification: Pulpdent is one of the first dental manufacturers in North America to be ISO Certified.



2 0 1 6

ACTIVA™ BIOACTIVE CEMENT

Pulpdent's introduction of ACTIVA BioACTIVE-CEMENT.



2 0 0 9

TUFF-TEMP PLUS

Development of BPA-free Tuff-Temp, a dual cure provisional crown and bridge material with patented rubberized-resin chemistry that is tougher and more impact resistant than all conventional dental materials.



2 0 0 2

EMBRACE™ WETBOND™

Development of the first BPA/Bis-GMA-free hydrophilic dental resins: Embrace Pit & Fissure Sealant, Embrace Resin Cement, Embrace Seal-n-Shine, and Spee-Dee Build Up.



L I N E

1 9 8 9

RESIN CHEMISTRY

Development of light cure and dual cure dental resin materials: resin cement, core build up material, pit and fissure sealant, and orthodontic adhesives.



1 9 8 0

The company invests in chemical production and machining capabilities and focuses on the development and manufacturing of new products.



1 9 6 3

PRESSURE SYRINGE / ROOT CANAL SEALER

Development of the Pulpdent Endodontic Pressure Syringe and Pulpdent Root Canal Sealer for root canal obturation of primary and permanent teeth.



1 9 4 7

PULPDENT PASTE

Dr. Harold Berk and Benjamin Rower found the company and launch Pulpdent Paste, the first pre-mixed calcium hydroxide-aqueous methylcellulose pulpal dressing and first bioactive dental product.



1 9 8 5

PERIO CARE / TEMPCANAL

Development of PerioCare and TempCanal.



1 9 7 5

The Berk brothers assume management of the company.



1 9 5 5

NATIONAL INSTITUTES OF HEALTH

Dr. Harold Berk makes important contributions to the era of pulp biology. Clinical studies are conducted at the National Institutes of Health (NIH) using Pulpdent Paste for pulp capping, vital pulpotomy, and pulpal curettage.



74 YEARS

Today, Pulpdent remains committed to its founding principles of education, prevention, and proactive dental care so that people can live in comfort, smile with confidence, and enjoy healthier, more productive lives.

SERVICE TO DENTISTRY AND ORAL HEALTH

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THE PRODUCTS IN THIS CATALOG ARE MANUFACTURED IN WATERTOWN, MA USA.
They contain no Bisphenol A (BPA), no BIS-GMA, no BIS-DMA and no BPA derivatives.



ISO 13485:2016 Pulpdent products are available from your dental dealer. Prices are manufacturer's suggested list prices at the time of publication in US dollars. Prices are subject to change without notice. Please ask your dental dealer for further information.
MDSAP Certificate
Medical Device Directive 93/42/EEC

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HUMANITARIAN EFFORTS



Each year, Future Smiles provides oral health care to more than 2,500 at-risk children through school-based programs and community health fairs in southern Nevada. Pulpdent has been a loyal supporter of the Future Smiles prevention program with donations of EMBRACE WetBond Pit & Fissure Sealant and EMBRACE Fluoride Varnish. Collaborating dental practitioners generously donate their time to deliver restorative care to these patients.



In partnership with Mil Milagros, Pulpdent donates EMBRACE Varnish, 5% sodium fluoride, to communities in rural Guatemala. Mil Milagros works with rural schools to prevent malnutrition and hunger and to implement oral health care programs. The organization has trained hundreds of teachers and parents to provide oral hygiene instruction and apply fluoride varnish.



Pulpdent Corporation has donated EMBRACE WetBond Pit & Fissure Sealant, ETCH-RITE etch gel, EMBRACE Fluoride Varnish and FLECTA Disposable Mirrors to Oral Health America's Smiles Across America program since 2007, when Pulpdent donated 60,000 sealants in honor of its 60th anniversary.

Smiles Across America supports school-based and school-linked sealant programs nationwide to provide preventive oral health services and education to children who may not have access to regular care.



Through their organization World Wide Smiles, Dr. Sherwin R. Shinn and his wife, Faria Shinn, provide oral health care to underserved people around the world.

Pulpdent Corporation has donated ACTIVA BioACTIVE-RESTORATIVE, EMBRACE WetBond Pit & Fissure Sealant, and EMBRACE Fluoride Varnish to support Dr. Shinn's mission and his efforts to alleviate suffering from dental disease, and to facilitate disease prevention and education in remote regions of the globe.



RECOGNITION



ACTIVA BioACTIVE
FIVE PLUS
CLINICAL RATING



ACTIVA Presto

ACTIVA Presto helps maintain the health of the tooth for a lifetime.

Dr. Robert Lowe

As my patients have aged, so have their teeth. Thank you for Presto A4 and A6 shades.

Dr. Lou Graham



ACTIVA BioACTIVE

Revolutionary

Dr. Howard Glazer

Unique and unprecedented

Drs. Croll TP, Berg JH, Donly KJ

Truly impressive

Dr. Josh Wren

ACTIVA BioACTIVE
TOP BIOACTIVE PRODUCT



DenTASTIC UNO

*Bond strength is stronger than the
cohesive strength of dentin*

Dr. Franklin Garcia-Godoy

Embrace Varnish, 5% Sodium Fluoride

*Did not separate, did not have to be mixed . . . producing an ever increasing amount of
fluoride ion over the length of the study*

The Dental Advisor

Embrace WetBond Pit & Fissure Sealant

It's an absolutely sensational product

Dr. John D. Doykos III

Virtually undetectable margins

The Dental Advisor

Bonds under adverse conditions

Reality

ACTIVA BioACTIVE
GOLD METAL
KRAKOW, POLAND



DR. BICUSPID
ACTIVA BioACTIVE
BEST NEW
RESTORATIVE PRODUCT

Spee-Dee Build Up

Cuts and prepares exactly like dentin . . . without ditching, gouging or gumming up the bur

Dr. George Freedman

Tuff-Temp Plus

Leaves margins crisper and easier to read

First Impressions



Pulpdent Paste

Early pulp organization and consistent [dentin] bridge formation . . . medicament of choice

Phaneuf RA, Frankl SN, Ruben MP

Best results were observed with Pulpdent Paste

THE FUTURE of dentistry is now in your hands

IMITATING NATURE

Bioactive dental materials imitate nature. They contain water, interact with saliva and the tooth structure, and actively participate in the cycles of ionic exchange that regulate the natural chemistry of teeth and saliva and contribute to the maintenance of oral health.

BIOMIMETIC RESIN

ACTIVA BioACTIVE products are the first dental resins that mimic the physical and chemical properties of teeth. They contain a bioactive ionic resin matrix, a shock-absorbing rubberized-resin component, and reactive ionomer glass fillers.

LASTING BENEFITS

ACTIVA BioACTIVE products chemically bond to teeth, sealing them against bacterial leakage. Their continuous release and recharge of calcium, phosphate and fluoride ions provide patients with long-term benefits.

YOUR PATIENTS WILL THANK YOU

ACTIVA products take a pro-active approach to dentistry, anticipating oral health needs and focusing on long-term prevention. These mineral-enriched products continue to work in patients' mouths long after they leave the dental office.

DYNAMIC "SMART" MATERIAL

ACTIVA reacts to the continuous pH changes in the oral environment to help fortify and recharge the ionic properties of saliva, teeth and the material itself. For this reason, ACTIVA is considered a "smart" material.



HYDROPHILIC

In 2002 Pulpdent introduced Embrace WetBond materials, the first moisture-friendly ionic dental resins.

Biochemistry only occurs in the presence of water.

The mouth is a moist environment. Saliva is the vital stream that sustains us and is rich with water and ionic components. Dentin contains approximately 15% of water and enamel approximately 4%.

Most traditional dental resins are hydrophobic, repel water and require a dry field. They are designed to be passive, do no harm, and be neutral in the mouth.



This is a negative approach that does not take advantage of the benefits and potential gains achieved by using active materials that play a dynamic role in the oral environment.*

Pulpdent has developed EMBRACE WetBond, ACTIVA BioACTIVE and ACTIVA Presto, moisture-friendly materials that work favorably in the moist oral environment, take advantage of the moisture naturally present in the mouth, and release and recharge calcium, phosphate, and fluoride. Only materials that transport water have the capacity for this dynamic behavior.

EMBRACE and ACTIVA materials are ionic resins formulated with phosphate groups. In the presence of moisture, there is an ionic interaction that binds the resin to the minerals in the tooth, forming a strong resin-hydroxyapatite complex and a positive seal against microleakage.

EMBRACE WetBond, ACTIVA BioACTIVE and ACTIVA Presto are hydrophilic and may contain a small amount of water, but they are durable and insoluble, and they do not degrade or wash out.

*McCabe JF, et al. Aust Dent J 2011 56 Suppl 1_3-10.



BIOACTIVE

Bioactive materials stimulate the natural remineralization process. In the presence of saliva, they elicit a biological response that forms a layer of apatite and a natural bond between the material and the tooth.*

Pulpdent's research focuses on developing bioactive materials that imitate the physical and chemical properties of teeth, help neutralize conditions that cause dental caries, and maximize the potential for remineralization.

ACTIVA BioACTIVE materials behave favorably in the moist oral environment. They participate in a dynamic system of ionic exchange with saliva and tooth



In the presence of moisture, ACTIVA BioACTIVE has the ability to stimulate formation of hydroxyapatite, the primary mineral component of enamel and dentin.

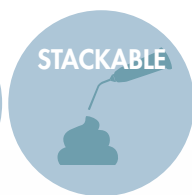
structure, continuously releasing and recharging calcium, phosphate and fluoride and responding to pH changes in the mouth. When the pH is low, the demineralization process releases calcium and phosphate ions from both the teeth and ACTIVA BioACTIVE. When the pH increases, these ions are available to combine with the fluoride ions in our saliva and precipitate onto the teeth in the form of acid-resistant fluorapatite.

The addition of a patented rubberized-resin molecule to the ACTIVA BioACTIVE resin matrix absorbs stress and shock and delivers unprecedented toughness and fracture resistance.

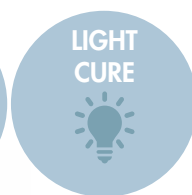
ACTIVA BioACTIVE materials are strong, esthetic and durable, and offer an alternative to traditional composites, which are strong and esthetic but are passive and without bioactive potential, and to glass ionomers, that release a significant amount of fluoride but have poor esthetics and undesirable physical properties.

*Hench LL, et al. J Biomed Mater Res 1972;2:117-141.

*Jeffereis SR. J Esthet Restor Dent 2014;26(1):14-26.



ACTIVATM PrestoTM
Universal Stackable Composite • Light Cure



Light Cure • Moisture friendly • Radiopaque

Releases/recharges calcium, phosphate and fluoride

Wear and fracture resistant rubberized resin



ACTIVA Presto is a dynamic, moisture-friendly, mineral-enriched composite that releases and recharges calcium, phosphate, and fluoride, delivering minerals teeth need to stay healthy.

ACTIVA Presto is a universal, stackable and shapeable nanohybrid material that holds its shape and does not slump. It is formulated with a patented rubberized resin that is strong, durable, and wear and fracture resistant, even in thin areas on bevel margins.

ACTIVA Presto is versatile, esthetic, highly radiopaque, and indicated for all classes of cavities and load bearing applications. It contains no Bis-GMA, no Bisphenol A, and no BPA derivatives. It is available in popular shades plus A4 and A6 cervical shades that are especially useful when treating older patients.

Nature's Magic in a Dental Composite

- Mineral-enriched, esthetic composite
- Dynamic, moisture-friendly material responds to pH changes in the oral environment
- Releases/recharges calcium, phosphate and fluoride
- Tough, durable rubberized resin resists wear, fracture and chipping
- Stackable, shapeable, low flow, no pull back, does not slump
- Contains no Bis-GMA, no Bisphenol A, and no BPA derivatives
- For all restorative procedures and load bearing applications

A P P L I C A T I O N S

1 Durable, wear resistant, and indicated for load bearing applications

Class II repair using ACTIVA Presto A2 shade

Photos courtesy of Dr. Delfin Barquero - Costa Rica



2 ACTIVA Presto A1 and A2 deliver essential minerals and esthetics for high risk patient

At one-month follow up, disclosing solution shows minimal plaque. Note excellent tissue health.

Photos courtesy of Dr. Stefano Daniele - Italy



3 Solution for failed molar restoration

ACTIVA Presto placed as «enamel» layer over ACTIVA BioACTIVE-RESTORATIVE bulk fill dentin replacement

Photos courtesy of Dr. Robert A. Lowe - USA



4 Stackable, shapeable viscosity is ideal for conservative dentistry and facilitates access and interproximal placement

Restoration fractured along distal marginal ridge replaced with ACTIVA Presto A3 shade

Photos courtesy of Dr. Robert Ho - USA



5 Versatile material provides easy access, placement, and esthetics

Vertical crown fracture on upper left central incisor repaired with ACTIVA Presto

Photos courtesy of Dr. Les Rykiss - Canada



6 Shade matching and blending for multi-surface cervical restoration

Restored with ACTIVA Presto A35 on mesial and A6 on buccal

Photos courtesy of Dr. Lou Graham - USA



7 Esthetic solution for Class V challenges

ACTIVA Presto A2 shade delivers esthetic result



Photos courtesy of Dr. Priti Lamba - India

8 Smile zone esthetics

Esthetic repair of anterior tooth with ACTIVA Presto.



Photos courtesy of Dr Ray Kimsey - USA

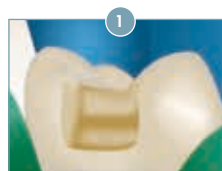
9 Geriatric Cervical Solution

Cervical repair with ACTIVA Presto A6 shade. Can you find it?

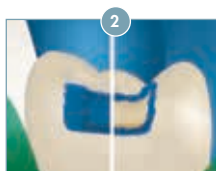


Photos courtesy of Dr Robert Lowe - USA

INSTRUCTIONS FOR USE



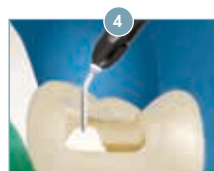
Prepare cavity
Bevel enamel margins



Total or selective etch



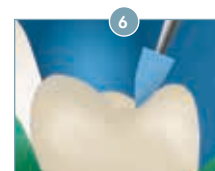
Apply bonding agent
per instructions



Place Presto in 2.5 mm
increments



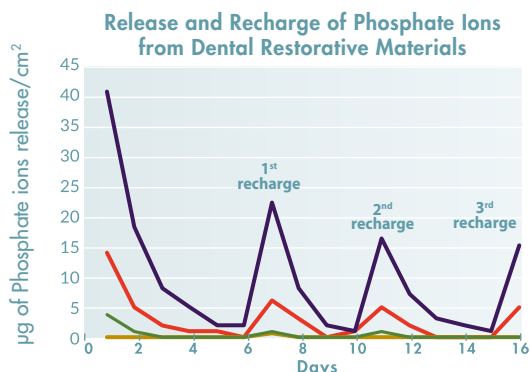
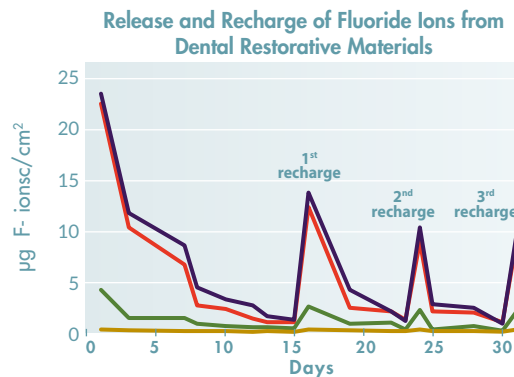
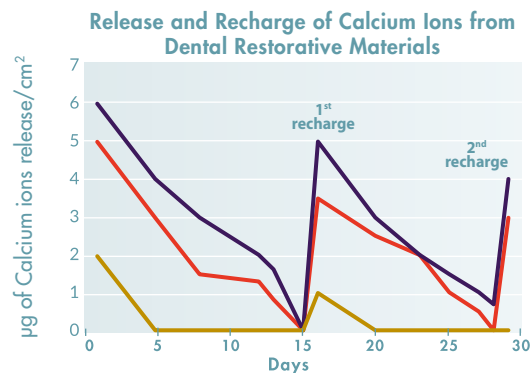
Light cure after each
layer



Finish and polish

CALCIUM, FLUORIDE & PHOSPHATE RELEASE / RECHARGE

The following graphs show the release and recharge of calcium, phosphate and fluoride from four restorative materials. ACTIVA Presto and ACTIVA BioACTIVE display a continuous release and recharge of these essential minerals, which are naturally occurring in the saliva and are supplemented by dietary sources and release from ACTIVA. This diffusion of ions is only available in materials that can transport water. Traditional hydrophobic materials are passive and do not have the capacity for this dynamic behavior.

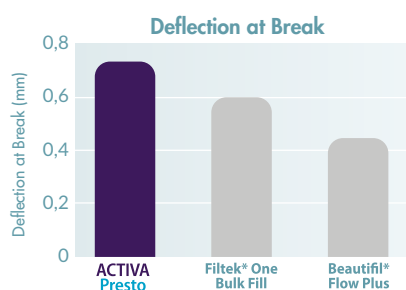


- ACTIVA Presto
- ACTIVA BioACTIVE
- Beautiful Flow Plus
- Filtek Supreme

MECHANICAL PROPERTIES

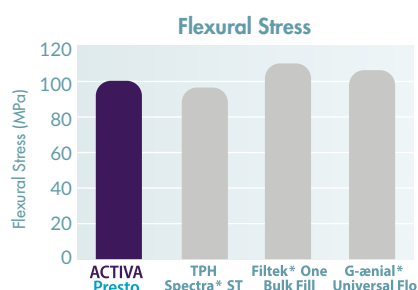
Deflection at Break of ACTIVA Presto, which indicates toughness and fracture resistance, is superior to leading composites.

Source: Pulpdent testing



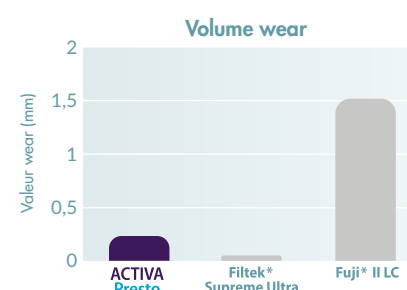
There is no statistical difference between the flexural strength of ACTIVA Presto and leading composites.

Source: The University of Tennessee Health Science Center



There is no statistical difference between the wear of ACTIVA Presto and Filtek Supreme Ultra.

Source: University of Alabama School of Dentistry



* Not trademarks of Pulpdent Corporation

PHYSICAL PROPERTIES

Light cure setting time: 20 ± 2 seconds
 Depth of cure: 2.5mm
 % filler by weight: 70%
 Compressive strength: 327 MPa ± 15 MPa

Diametral tensile strength: 53 MPa ± 2 MPa
 Deflection at break: 0.7mm
 Solubility: 0.26%
 Radiopacity: 2.5 AL (250%)

THE TOOTH IS THE STANDARD

Materials	Esthetic	Moisture-Friendly	High Strength	Releases/Recharges Calcium & Phosphate	Shock-Absorbent
Tooth Structure	yes	yes	yes	yes	yes
 ACTIVA Presto	yes	yes	yes	yes	yes
Composite	yes	no	yes	no	no

	VPF1+	2 x 1.2mL/2.2 gram syringes ACTIVA Presto + 20 applicator tips * Specify shade: A1, A2, A3, A35, A4, A6, B1, BW (Bleach White)	
	19K20	Applicator tips, 19 ga x 1/2" prebent, Pkg./20	
	19K100	Applicator tips, 19 ga x 1/2" prebent, Pkg./100	



ACTIVA™ BioACTIVE RESTORATIVE



Natural esthetics - Highly polishable

Releases/recharges calcium, phosphate and fluoride

Fracture and wear resistant

ACTIVA™ BioACTIVE-RESTORATIVE™ is a highly esthetic, bioactive composite that delivers the advantages of glass ionomers in a strong, resilient, resin matrix that will not chip or crumble. It chemically bonds to teeth, seals against bacterial microleakage, releases and recharges more fluoride and is more bioactive than glass ionomers, and is fracture resistant than composites.^{1,2,3,4,5,17,18}

Source: University testing^{1,2,3,4,5,17,18} (References: www.pulpdent.com/education-articles)

ACTIVA is the first bioactive composite with an ionic resin matrix, a shock-absorbing resin component and bioactive fillers that mimic the physical and chemical properties of natural teeth. It releases and recharges with calcium, phosphate and fluoride ions,^{1,7,9,11} delivering long-term benefits and better oral health care for your patients. ACTIVA contains no Bisphenol A, No Bis-GMA and no BPA derivatives. The material is dual cure.

Source: University testing^{1,7,9,11} (References: www.pulpdent.com/education-articles)



PHYSICAL PROPERTIES

Initial self-cure setting time at 37° C:

2½-3 minutes

Light cure setting time:

20 seconds

Depth of light cure:

4 mm

Polymerization shrinkage:

1.7%

Fluoride release 1 day:

230 ppm

Fluoride release 28 days (cumulative):

940 ppm

Flexural modulus:

4.3 GPa

Flexural strength:

102 MPa / 14,790 psi

Compressive strength:

280 MPa / 40,600 psi

Diametral tensile strength:

42 MPa / 6090 psi

Water sorption (1 week):

1.65%

Reactive glass filler by weight:

21.8%

	VR*	STARTER KIT: 5mL/8gm syringe, ACTIVA-SPENSER™ + 20 automix tips	* Specify Shade: A1, A2, A3	
	VR1*	SINGLE REFILL: 5mL/8gm syringe + 20 automix tips	* Specify Shade: A1, A2, A3, A3.5	
	VR2*	VALUE REFILL: 2 x 5mL/8gm syringe + 40 automix tips	* Specify Shade: A1, A2, A3, A3.5	
	DS05	ACTIVA SPENSER: Dispenser for 5mL automix syringes		
	A20N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 20		
	A50N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 50		



ACTIVA™ kids

BioACTIVE RESTORATIVE



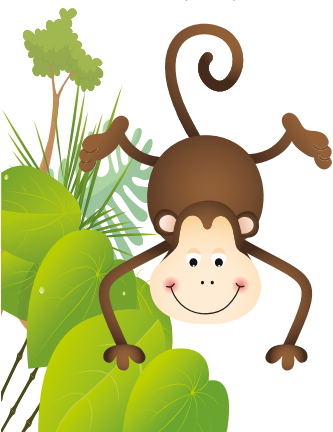
Opaque white shade ideal for children's teeth

Stimulates apatite formation

Fracture and wear resistant

ACTIVA™ KIDS has all the same physical and bioactive properties as ACTIVA BioACTIVE-RESTORATIVE. It is an opaque white shade ideally suited for pediatric dentistry. ACTIVA KIDS is safe for children, contains no BPA, no Bis-GMA and no BPA derivatives, and it bonds and masks silver diamine fluoride stains. ACTIVA stimulates the natural remineralization process with release and recharge of calcium, phosphate and fluoride.

The patented rubberized-resin component is strong, durable and fracture resistant. ACTIVA KIDS delivers all the benefits of glass ionomers and has the esthetics, strength, and durability of composites. The material is dual cure.



ACTIVA™ IS HIGHLY ACCLAIMED BY LEADING PEDIATRIC DENTISTS:

Finally, a great pediatric restorative material that should satisfy all your needs for children's dentistry. I have been using it for years with outstanding results!

- Dr Mark Cannon

The future of dentistry is bioactive materials. Activa is one of the best materials to hit the market in years.

The marginal integrity, workability and esthetics are truly impressive.

- Dr Josh Wren

The new [ACTIVA] products are seemingly unique and unprecedented in the dental restorative materials continuum.

Physical characteristics closely resembling the strengths and wear resistance of RBCs [resin-based composites].

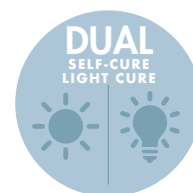
White line margins . . . are conspicuously absent. No complaints of postoperative tooth sensitivity.

- Croll TP, Berg JH, Donly KJ Compendium 2015; 36 (1): 60-65.

	VKP	STARTER KIT: 5mL/8gm syringe Pedo Shade, ACTIVA-SPENSER + 20 automix tips	
	VK1P	SINGLE REFILL: 5mL/8gm syringe Pedo Shade + 20 automix tips	
	VK2P	VALUE REFILL: 2 x 5mL/8gm syringes Pedo Shade + 40 automix tips	
	DS05	ACTIVA-SPENSER™: Dispenser for 5mL automix syringes	
	A20N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 20	
	A50N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 50	



ACTIVA™ BioACTIVE BASE/LINER



Seals against microleakage

Releases more calcium, phosphate and fluoride than glass ionomers

Self-etching and self-bonding

ACTIVA™ BioACTIVE-BASE/LINER™ delivers all the advantages of glass ionomers in a strong, resilient resin matrix that will not chip or crumble. It chemically bonds to teeth, seals against bacterial microleakage, releases more fluoride and is more bioactive than glass ionomers, and is more durable and fracture resistant than composites. Composites, glass ionomers and RMGIs.^{1,2,3,4,5,17,18} ACTIVA is the first bioactive base/liner with an ionic resin matrix, a shock-absorbing resin component and

bioactive fillers that mimic the physical and chemical properties of natural teeth. It releases and recharges with calcium, phosphate and fluoride ions,^{1,7,11} delivering long-term benefits and better oral health care for your patients. ACTIVA contains no Bisphenol A, No Bis-GMA and no BPA derivatives. The material is dual cure.

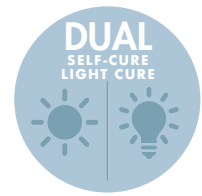
Source: University testing^{1,2,3,4,5,7,11,17,18} (References : www.pulpdent.com/education-articles)



PHYSICAL PROPERTIES

Initial self-cure setting time at 37° C:	2½-3 minutes	Flexural modulus:	3.7 GPa
Light cure setting time:	20 seconds	Flexural strength:	86 MPa / 12,470 psi
Depth of light cure:	4 mm	Compressive strength:	226 MPa / 32,770 psi
Fluoride release 1 day:	360 ppm	Diametral tensile strength:	37 MPa / 5365 psi
Fluoride release 28 days (cumulative):	1,300 ppm	Percentage reactive glass filler by weight:	19.3%
Water sorption (1 week):	2.30%	Percentage filler by weight:	45%

	VB1	SINGLE PACK: 5mL (7gm) syringe + 20 automix tips	
	VB2	VALUE PACK: 2 x 5mL (7gm) syringes + 40 automix tips	
	A20N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 20	
	A50N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 50	



No etching or bonding required

Stimulates remineralization at material-tooth interface

More resistant to chipping and fractures than other dental cements

ACTIVA™ BioACTIVE-CEMENT™ stimulates mineral apatite formation and the natural remineralization process at the material-tooth interface that knits the restoration and the tooth together, penetrates and fills micro-gaps, reduces sensitivity, guards against secondary caries, and seals margins against microleakage and failure – nature's way.

The cement is dual cure, moisture tolerant, and indicated for indirect restorations including zirconia, CAD/CAM and glass ceramic restorations, all ceramic, resin, metal/PFM, implant dentistry, and preformed stainless steel and zirconia pediatric crowns.

ACTIVA's patented rubberized-resin provides greater resistance to chipping and fracture than any other dental cement. It is durable, insoluble, and will not wash out or crumble. ACTIVA responds to pH cycles with release and recharge of significant amounts of calcium, phosphate and fluoride. These mineral components stimulate formation of a connective layer of mineral apatite that seals and protects teeth.



PHYSICAL PROPERTIES

Working time at room temperature:	90 seconds	Flexural modulus:	3,7 GPa
Light cure setting time:	20 seconds	Flexural strength:	88,4 MPa / 12,800 psi
Self-cure anaerobic setting time at 37°C:	< 3 minutes	Compressive strength:	210 MPa / 30,500 psi
Percentage reactive glass filler by weight:	47%	Diametral tensile strength:	37 MPa / 5365 psi
Fluoride release 1 day:	360 ppm	Water sorption (1 week):	2.30%
Fluoride release 28 days (cumulative):	1,300 ppm	Film thickness:	11 microns

	VC1A2	SINGLE PACK: 5mL (7gm) syringe + 20 automix tips	A2 Opaque Shade	
	VC2A2	VALUE PACK: 2 x 5mL (7gm) syringes + 40 automix tips	A2 Opaque Shade	
	VC1T	SINGLE PACK: 5mL (7gm) syringe + 20 automix tips	Translucent Shade	
	VC2T	VALUE PACK: 2 x 5mL (7gm) syringes + 40 automix tips	Translucent Shade	

	A20	Automix Syringe Tips, pkg. 20			A20N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 20	
	A50	Automix Syringe Tips, pkg. 50			A50N1	Automix Tips, clear, with bendable 20-gauge metal cannula – pkg of 50	

ACTIVA - 53-MONTH RECALL

Photos courtesy of Dr. John Comisi



1A. December 2012

Prepared tooth after removal of failed amalgam restoration.



1B. May 2017

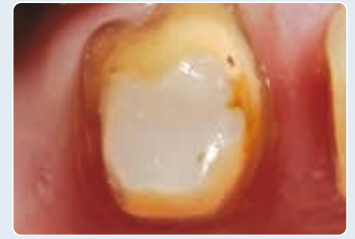
53-month recall shows great esthetics, no wear or chipping, and no marginal staining.

CORE BUILD UP

Photos courtesy of Dr. Robert Lowe



2A. ACTIVA is used to build the core on a badly broken down molar.



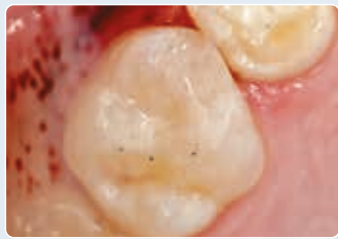
2B. Tooth is ready to receive a crown.

CLASS II RESTORATION

Photos courtesy of Dr. Leon Katz



3A. Shows minimally invasive tooth preparation.



3B. After 10-second etch and removal of excess moisture, shows esthetic ACTIVA restoration.



4A. Shows Class II cavity prep.



4B. Shows tooth restored with ACTIVA BioACTIVE-RESTORATIVE.

REPAIRING CARIES UNDER CROWN MARGIN

Photos courtesy of Dr. Robert Lowe



5A. Caries under crown margin has been removed. 10-second etch and removal of all excess moisture not shown.



5B. Moisture-friendly ACTIVA bonds to tooth, metal and ceramics, and mimics the function of missing tooth structure.

REPAIRING SENSITIVE CERVICAL LESIONS

Photos courtesy of Dr. C.H. Pameijer



6A. Shows cervical lesions of lower bicuspid.



6B. After etching, bonding agent was applied for added retention. ACTIVA provides esthetics, bioactivity, and patient comfort.

ACTIVA BIOACTIVE-BASE/LINER

Photos courtesy of Dr. Robert Lowe



7A. Shows prepared tooth after removing deep caries under a failed composite restoration.



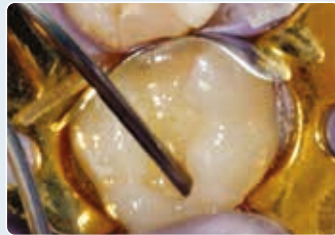
7B. Shows ACTIVA BioACTIVE-BASE/LINER placed and cured. No etching required. Note dentin shade match.

REPLACEMENT OF FAILED COMPOSITE WITH ACTIVA BIOACTIVE-RESTORATIVE

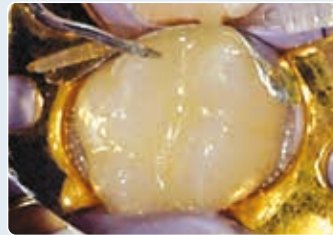
Photos courtesy of Dr. Mark Cannon



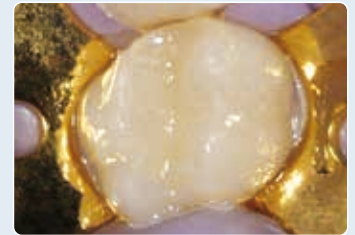
8A. Shows 10-second etch. After rinsing, all excess moisture is removed.



8B. ACTIVA BioACTIVE-RESTORATIVE is placed using mixing tip with bendable metal cannula.



8C. Explorer is used to create anatomy.



8D. Shows finished and polished restoration.

REPLACEMENT OF FAILED COMPOSITE WITH ACTIVA BIOACTIVE-BASE/LINER

Photos courtesy of Dr. Robert Lowe



9A. Prepared tooth.



9B. Shows ACTIVA BioACTIVE-BASE/LINER after light curing.



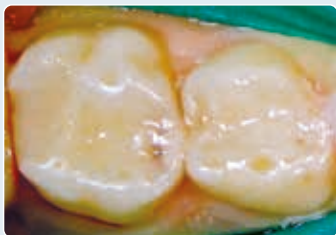
9C. Etch with Etch-Rite phosphoric acid gel.



9D. Finish restoration using composite or ACTIVA BioACTIVE-RESTORATIVE.

ACTIVA KIDS: EASY TO PLACE - OPAQUE WHITE SHADE

Photos courtesy of Dr. Mark Cannon



10A. Pre-op shows secondary caries on restored molars.



10B. Prepared teeth.



10C. Teeth are etched for 10 seconds.



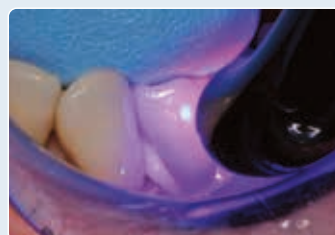
10D. Shows teeth restored with ACTIVA KIDS.

ACTIVA BIOACTIVE-CEMENT

Photos courtesy of Dr. G. Franklin Shull



11A. Tooth is prepared to receive a crown. Note retentive crown prep.



11B. Crown filled with ACTIVA BioACTIVE-CEMENT is seated and tack cured 1-2 seconds.



11C. Excess cement is easily removed.



11D. Shows finished case.

B I O A C T I V E

APATITE FORMATION

Apatite formation is the essential requirement of bioactive materials. ACTIVA stimulates mineral apatite formation and the natural remineralization process that knits the restoration and the tooth together and

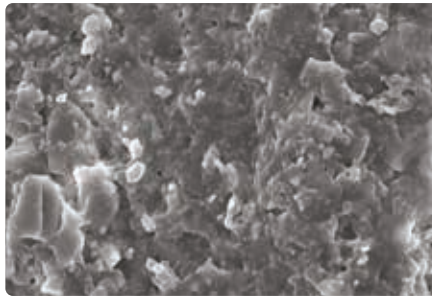
seals margins against microleakage, secondary caries, and failure. ACTIVA responds to pH cycles and plays an active role in maintaining oral health with release and recharge of significant

amounts of calcium, phosphate and fluoride. These mineral components stimulate formation of a protective/connective apatite layer and a natural bonded-seal at the material-tooth interface.

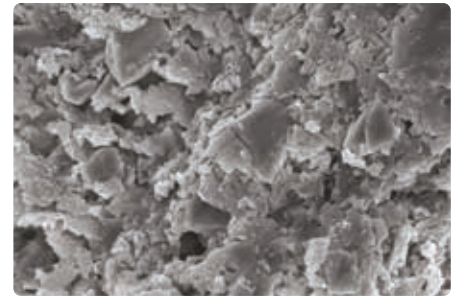
SEM Analysis of ACTIVA BioACTIVE-CEMENT after 21 Days in Saline

Compared to the no saline control, scanning electron microscope (SEM) imaging and energy-dispersive X-ray spectroscopy (EDS) after 21 days in saline shows significant increase in calcium and phosphorus ion concentrations, and decrease in carbon and silica ions, indicating that mineral apatite deposits are forming on the surface.

Source: University testing³⁵ (References: www.pulpdent.com/education-articles)



ACTIVA BioACTIVE-CEMENT Control, no saline
3000x

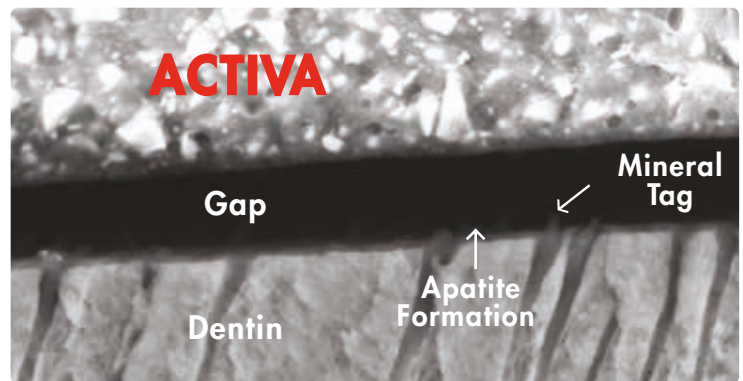


ACTIVA BioACTIVE-CEMENT 21 days in saline
3000x

SEM and EDS Analysis Verifies Bioactive Component

Scanning electron microscope (SEM) imaging and energy-dispersive X-ray spectroscopy (EDS) analysis of dentin discs treated with ACTIVA BioACTIVE-CEMENT and placed in phosphate buffered solution verifies the bioactive component of the material and demonstrates excellent dentinal tubule penetration. A layer of apatite formed and fused the dentin to ACTIVA. (The gap was produced when the specimen was fractured to make the SEM.)

Source: University testing⁴¹ (References: www.pulpdent.com/education-articles)

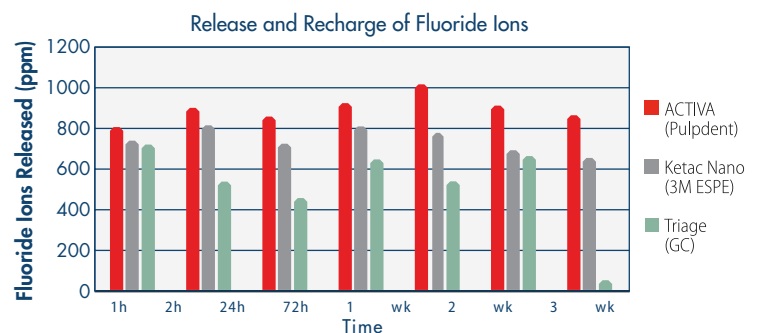


FLUORIDE RELEASE AND RECHARGE

ACTIVA releases and recharges with fluoride, providing long-term patient benefits for improved oral health care.

University testing using fluoride ion concentration gradient diffusion methodology shows the pattern of release and recharge of ACTIVA, Ketac Nano and Triage. The study concludes that "at the seven time points tested, the new bioactive material [ACTIVA] has statistically greater fluoride release after recharge at 24 hours, 1 week and 3 weeks than the other groups tested."

Source: University testing⁴¹ (References: www.pulpdent.com/education-articles)

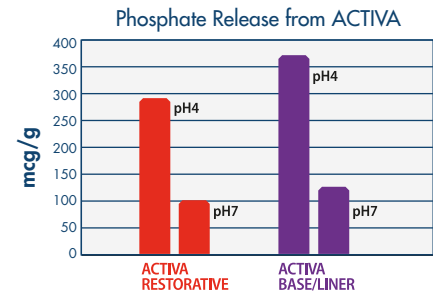


PROPERTIES

PHOSPHATE RELEASE

ACTIVA is a “smart” material that responds to pH cycles in the mouth. During low pH demineralization cycles, ACTIVA releases more phosphate. The phosphate ions can reside in the pellicle layer or saliva and are available to interact with calcium and fluoride ions during higher pH cycles.

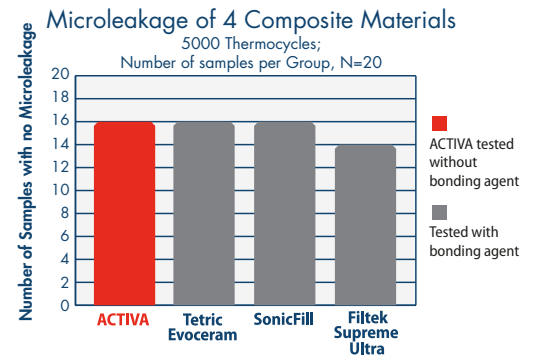
Source: *Pulpdent testing*⁷ (References: www.pulpdent.com/education-articles)



MICROLEAKAGE

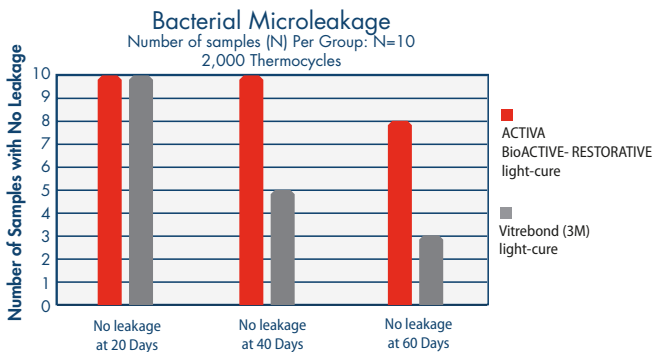
ACTIVA BioACTIVE-RESTORATIVE, when tested in vitro for microleakage *without a bonding agent*, compares favorably with leading composites tested *with a bonding agent* (Scotchbond Universal Adhesive, 3M ESPE).

Source: *University testing*¹⁶ (References: www.pulpdent.com/education-articles)



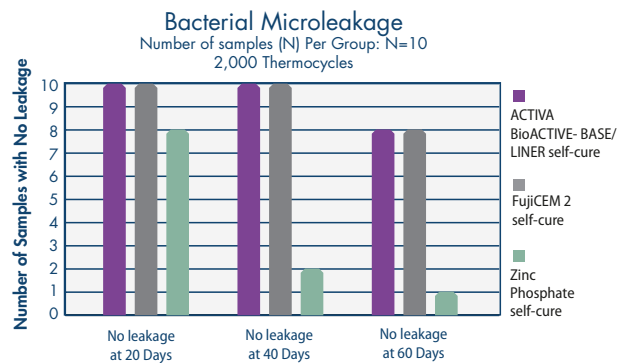
BACTERIAL MICROLEAKAGE

ACTIVA BioACTIVE-RESTORATIVE outperforms a leading RMGI when tested for bacterial microleakage in vitro after 2,000 thermocycles.



Source: *University testing*³ (References: www.pulpdent.com/education-articles)

ACTIVA BioACTIVE-BASE/LINER compares favorably with a leading resin modified glass ionomer material when tested for bacterial microleakage in vitro after 2,000 thermocycles.



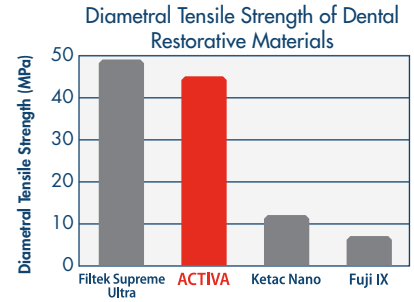
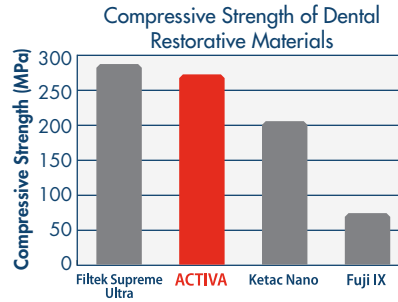
Source: *University testing*² (References: www.pulpdent.com/)

PHYSICAL

STRENGTH

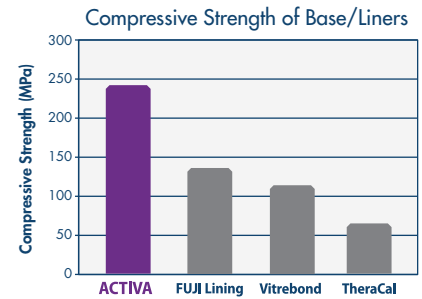
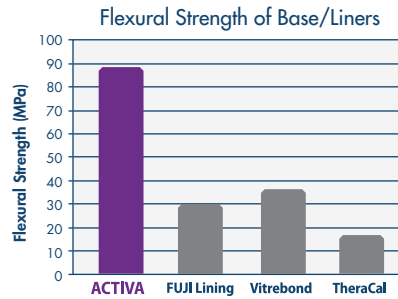
Compressive and Diametral Tensile Strength of ACTIVA BioACTIVE-RESTORATIVE is comparable to composites and far superior to glass ionomers and RMGIs.

Filetek = Composite; ACTIVA = Bioactive Restorative; Ketac Nano = RMGI; Fuji IX = Glass Ionomer
Source: University testing¹⁷ (References: www.pulpdent.com/education-articles)



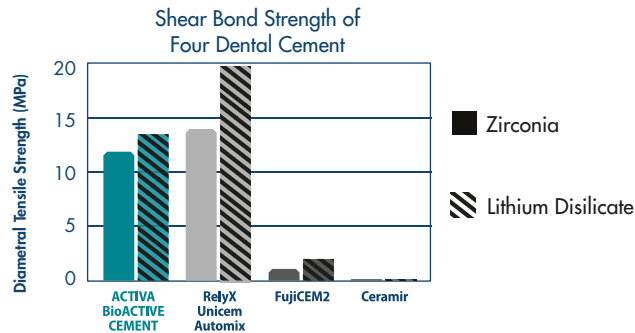
Compressive and Flexural Strength of ACTIVA BioACTIVE-BASE/LINER is much greater than resin-modified base/liners and RMGIs.

ACTIVA = Bioactive Base/Liner; Fuji Lining = RMGI; Vitrebond = RMGI; TheraCal = Resin-Modified Calcium Silicate
Source: University testing¹⁸ (References: www.pulpdent.com/education-articles)



Shear bond strength of ACTIVA BioACTIVE-CEMENT compares favorably with leading cements and is superior to RMGI and calcium aluminate-glass ionomer cements tested.

ACTIVA = Bioactive Cement; RelyX = Self-adhesive Cement; FujiCEM 2 = RMGI; Ceramir = Calcium Aluminate-GI
Source: University testing¹⁹ (References: www.pulpdent.com/education-articles)

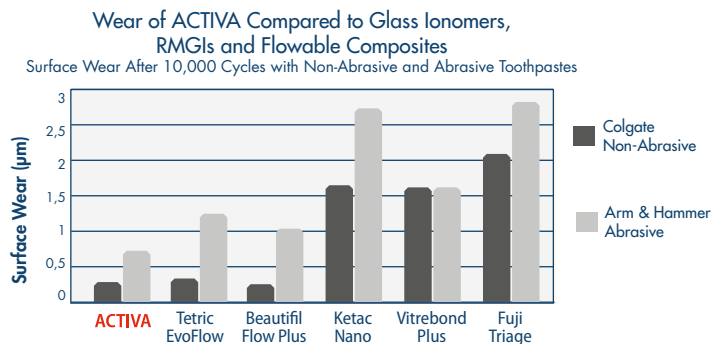


WEAR

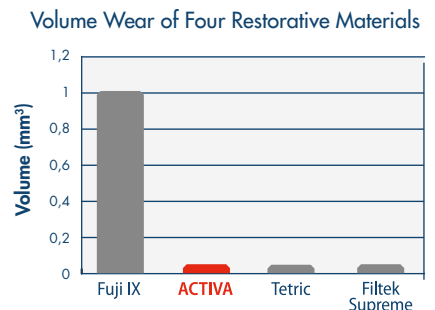
Volume wear of ACTIVA BioACTIVE-RESTORATIVE is comparable to composites and far less than glass ionomer. When

evaluated for surface wear resistance, ACTIVA BioACTIVE-RESTORATIVE performed better than all other materials tested with

abrasive toothpaste and was comparable to flowable composites with non-abrasive toothpaste.



ACTIVA = Bioactive Restorative; Tetric EvoFlow and Beautifil Flow Plus = Flowable Composite; Ketac Nano and Vitrebond Plus = RMGI; Fuji Triage = Glass Ionomer
Source: University testing²⁷ (References: www.pulpdent.com/education-articles)



Fuji IX = Glass Ionomer; ACTIVA = Bioactive Restorative; Tetric = Composite; Filtek Supreme = Composite
Source: University testing²⁸ (References: www.pulpdent.com/education-articles)

PROPERTIES

TOUGHNESS, FATIGUE LIMIT, DEFLECTION AT BREAK

ACTIVA's rubberized resin component provides unparalleled toughness and resilience. Toughness, measured by deflection at break using a 3-point bend test, is the ability of a strong, hard material

to absorb stress, dissipate forces and resist fracture when a load is applied. Fatigue limit is determined by the incremental load required to cause fracture within a defined number of cycles.

Deflection at Break of ACTIVA is 2-3 times greater than composites and 5-10 times greater than GIs and RMGIs.

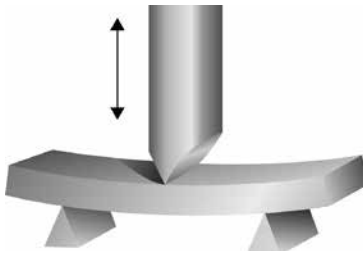


Fig 1: Illustration shows 3-point bend test

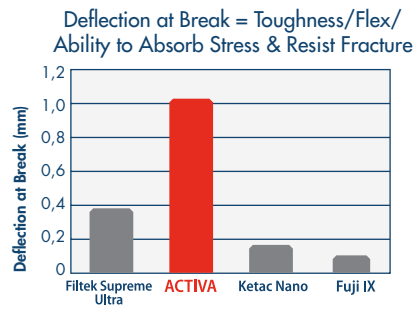


Fig 2: Filtek = Composite; ACTIVA = Bioactive Restorative; Ketac Nano = RMGI; Fuji IX = GI
Source: University testing^{5,17} (References: www.pulpdent.com/education-articles)

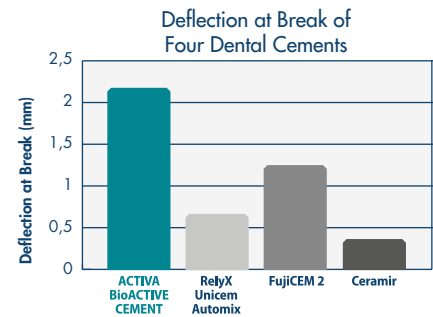


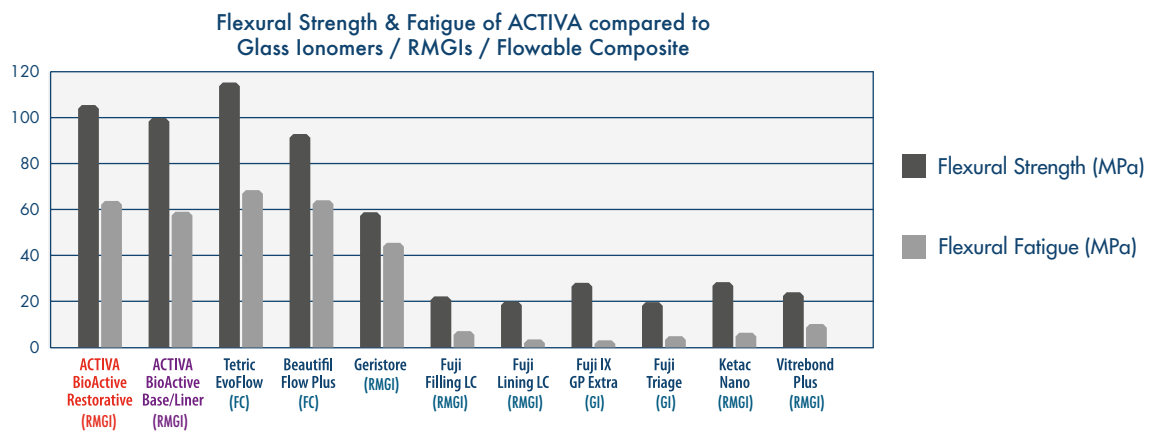
Fig 3: ACTIVA = Bioactive Cement; RelyX Unicem Automix = Self-Adhesive Cement; FujiCEM 2 = RMGI; Ceramir = Calcium Aluminate-GI
Source: University testing³⁴ (References: www.pulpdent.com/education-articles)

FLEXURAL STRENGTH AND FLEXURAL FATIGUE

Flexural strength and flexural fatigue measure the amount of stress a material can withstand, measured by deflection at break, and its endurance, measured by the number of

repeated cycles before failure. ACTIVA meets the requirement of ISO 4049 for occlusal restorations and demonstrates flexural strength and flexural fatigue comparable to

flowable composites (FC) and significantly greater than conventional RMGIs and GIs tested.



Source: University testing²⁹ (References: www.pulpdent.com/education-articles)

PHYSICAL PROPERTIES

WATER ABSORPTION

A controlled and relatively low level of water absorption is advantageous for bioactive materials, which require water to unlock their bioactive properties and potential for ionic exchange. Excessive water absorption can compromise the physical properties of restorative and base/liner materials over time.

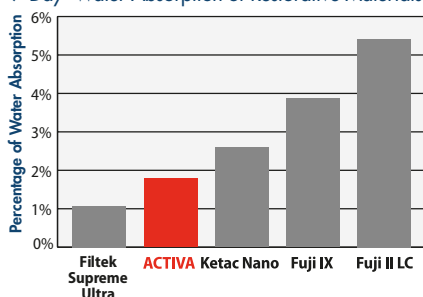
Water absorption of ACTIVA BioACTIVE-RESTORATIVE is significantly less than glass ionomers and RMGIs, and is designed to be slightly higher than composites, which are hydrophobic and not bioactive.

Water absorption of ACTIVA BioACTIVE-BASE/LINER is far less than RMGIs. Water

absorption of TheraCal is 7 times greater than ACTIVA.

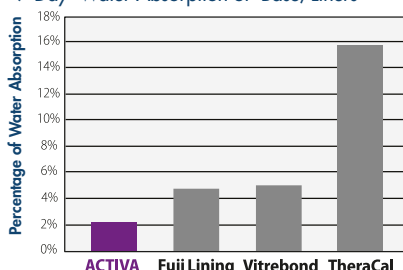
Water absorption of ACTIVA BioACTIVE-CEMENT compares with the leading self-adhesive cement and is far less than the RMGI and calcium aluminate-glass ionomer cements tested.

7 Day Water Absorption of Restorative Materials



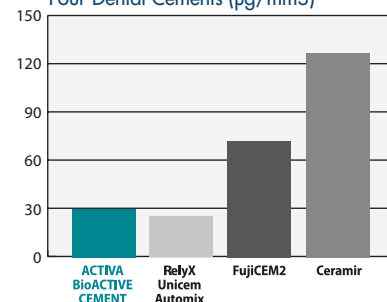
ACTIVA = Bioactive Restorative; Filtek = Composite; Ketac Nano = RMGI; Fuji IX = GI; Fuji II LC = RMGI
Source: Pulpdent testing⁸ (References: www.pulpdent.com/education-articles)

7 Day Water Absorption of Base/Liners



ACTIVA = BioACTIVE Base/Liner; Fuji Lining & Vitrebond = RMGI; TheraCal = Resin-Modified Calcium Silicate
Source: Pulpdent testing²⁰ (References: www.pulpdent.com/education-articles)

Water Absorption and Solubility of Four Dental Cements (µg/mm³)



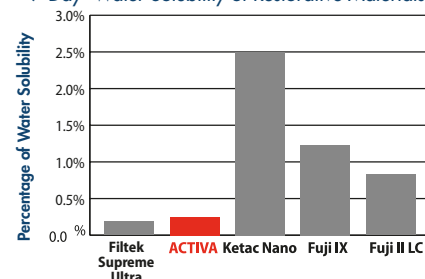
ACTIVA = Bioactive Cement; RelyX Unicem Automix = Self-adhesive Cement; FujiCEM 2 = RMGI; Ceramir = Calcium Aluminate-GI
Source: University testing³⁷ (References: www.pulpdent.com/education-articles)

WATER SOLUBILITY

Low water solubility is important for ensuring the durability and longevity of a dental material. The patented resins and reactive glass fillers in ACTIVA products are balanced to deliver both bioactivity, which requires water, and durability. This unique combination of attributes, when combined with esthetics, sets ACTIVA apart from all other restorative materials.

ACTIVA has remarkably low water solubility that compares favorably with leading composites and is far lower than glass ionomers and RMGIs.

7 Day Water Solubility of Restorative Materials

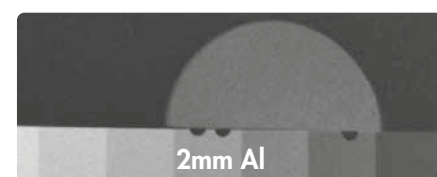


ACTIVA = Bioactive Restorative; Filtek = Composite; Ketac Nano = RMGI; Fuji IX = GI; Fuji II LC = RMGI
Source: Pulpdent testing²⁰ (References: www.pulpdent.com/education-articles)

RADIOPACITY

The radiopacity of ACTIVA is equivalent to 1.5mm of aluminum.

Filtek, Ketac, Fuji, Vitrebond, TheraCal, RelyX, Ceramir, FujiCEM, Tetric, EvoFlow, EvoCeram, Beautifil, Geristore and SonicFill are not trademarks of Pulpdent Corporation.





HEROIC DENTISTRY

DANIEL: By Raymond Kimsey, DMD

Severe Autism, Rampant Caries, Strip Crowns and ACTIVA BioACTIVE-RESTORATIVE



Shows rampant caries



Decay is removed and teeth prepared for restoration.



Strip crowns were prepared in advance on a study model.



Shows teeth restored with ACTIVA BioACTIVE-RESTORATIVE using the strip crown technique.

Daniel suffers from severe autism, the associated lack of speech, and a seizure disorder. Now 18 years old, his mother was hopeful that I would be able to sedate him and treat his needs.

Daniel had no ability to communicate with me and was completely uncooperative. I was able to get a brief look in his mouth, which revealed severe caries (Fig. 1).

The treatment plan would require completing the case in one visit using a material that would withstand stress and not contribute to rapid recurrent marginal caries. From my experience using strip crowns in primary dentition, I knew that they offered a fast, single appointment option that would both reduce cost and the risks of extensive anesthesia. Thinking ahead, I quickly made an upper anterior alginate impression.

I used a study model to prepare four strip crowns in advance. On treatment day, I placed an IV and sedated Daniel with midazolam. Working quickly, I removed the extensive caries (Fig. 2). Although deep, there were no exposures. I checked the strip crowns for fit (Fig. 3), treated the dentin with Pulpdent Desensitizer, placed a bonding agent, and filled the strip crowns with ACTIVA BioACTIVE-RESTORATIVE.

Why Activa? I have been using Activa for years and knew it would be the perfect solution. It is esthetic, durable, and its bioactive properties and marginal integrity are more resistant to recurrent caries than any other product. It is high strength, dual cure, and it flows nicely, so it is easy to fill and apply the strip crowns. The actual treatment time was remarkably fast for treating such severe disease.

Daniel returned the following week, and upon seeing me, he began to smile! Although he could not express it verbally, he knew how much I had helped him. With proper planning, this seemingly impossible case had a gratifying outcome for both the patient and his family, and for me as well (Fig. 4).

Dr. Kimsey is in private practice in Coral Gables, Florida. His specialties include implantology, anesthesia and IV sedation, and management of patients with mental and physical developmental defects.



EMBRACE™ WETBOND™ PIT & FISSURE SEALANT

MOISTURE-FRIENDLY PIT AND FISSURE SEALANT



Fluoride releasing – Light Cure

Margin-free – No chipping – No staining

Tooth integrating – Seals against microleakage

Embrace™ is remarkable for its ability to bond to the moist tooth, its sealing ability, and its adaptation to tooth structure. The margins are undetectable, and the long-term success has been reported in the literature. Independent research shows that Embrace compares

favorably with glass ionomers, and is superior to other resin-based sealants, when evaluated for remineralization capacity.



CLINICAL PERFORMANCE

Embrace WetBond Pit & Fissure Sealant Long-term Report

Strassler HE, O'Donnell JP. A unique moisture-tolerant, resin-based pit and fissure sealant: clinical technique and research result. *Inside dentistry* 2008;4(9):108-110.

This study assessed the clinical performance of Embrace WetBond Pit & Fissure Sealant in a pediatric dental practice. A total of 334 teeth sealed with Embrace WetBond Pit & Fissure Sealant were

evaluated over a period of four to six years. After four to six years, 299 of 334 sealants were in excellent condition. Of the remaining teeth, 32 required resealing with no evidence of occlusal caries, and only three teeth developed occlusal caries. The sealed teeth were 99% caries free.

PHYSICAL PROPERTIES

Compressive Strength:	34,800 psi / 240 MPa	Film Thickness:	12 microns
Diametral Tensile Strength:	6,300 psi / 43.4 MPa	Percent filled (EMS, EMS3, EMSB):	36.6%
Percent Solubility:	0.06%	Percent filled, Low-Fill Formula (EMSWLF):	7.9%

MOISTURE FRIENDLY IONIC RESIN

Embrace WetBond is a bioactive ionic resin designed to take advantage of the moisture that is always present in the mouth. Embrace is moisture friendly, contains a small amount of water, and has attributes that mimic nature and respond to changes in the oral environment.



A drop of water is placed next to uncured Embrace resin.

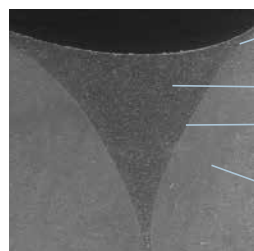


Embrace mixes with the water.

EXCEPTIONAL MARGINAL ADAPTATION

Embrace resins form an intimate association with the moist tooth. They are tooth integrating, creating a margin-free interface between the resin and the tooth that eliminates microleakage.

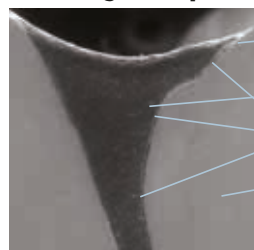
EMBRACE Sealant



Perfect marginal integrity
EMBRACE Sealant
Perfect adaption to tooth
Enamel

SEM shows Embrace Pit & Fissure Sealant without bonding agent. Note the smooth margin and the extraordinary adaptation of the sealant to the tooth.

Leading Competitor



Poor marginal integrity
Traditional Sealant
Gap
Enamel

SEM shows leading competitor's traditional pit and fissure sealant without bonding agent. Note the large gap between the sealant and the tooth.



Clean teeth and apply Etch-Rite™ for 15 seconds.



Rinse and lightly dry. Leave teeth slightly moist, and apply Embrace Pit & Fissure Sealant to the moist teeth.



Light cure. Embrace cures with all lights.



After curing, the margins are undetectable with an explorer.

Photography courtesy of Dr. Christopher Ramsey

	EMS	4 x 1.2mL (1.9 gm) syringes sealant + 20 tips, natural shade		EMSW	4 x 1.2mL (1.9 gm) syringes sealant + 20, off-white shade
	EMS3	3mL (4.72 gm) syringe, natural shade		EMS3W	3mL (4.72 gm) syringe, off-white shade
	EMSB	20 x 1.2mL syringes, natural shade + 100 tips		EMSWB	20 x 1.2mL syringes, off-white shade + 100 tips
	23R20	Red, 23 ga x 1/2", Tips, pkg. 20		EMSWLF	4 x 1.2mL syringes Low-Fill sealant, off-white shade + 20 tips
	22K20	Black, 22 ga x 1/2", Tips, pkg. 20		22K100	Black, 22 ga x 1/2", Tips, pkg. 100



CXP =
CALCIUM,
XYLITOL AND
PHOSPHATE

EMBRACE™ VARNISH

5% SODIUM FLUORIDE – 22.6 mg FLUORIDE/mL

MOISTURE
FRIENDLY



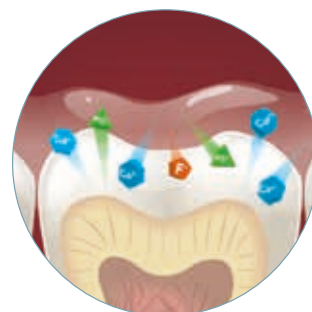
Bioavailable fluoride, calcium and phosphate with Xylitol

Fills superficial, non-carious enamel lesions (white spots)

Desensitizing effect

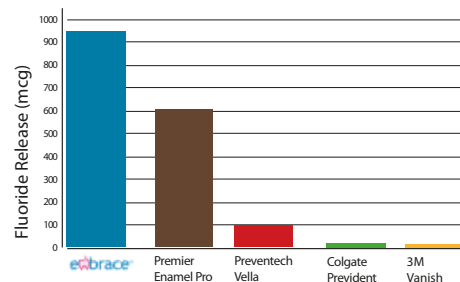
Not only does Embrace Varnish™ release more fluoride in 4 hours, it also releases bioavailable calcium and phosphate ions, the essential building blocks of teeth. The xylitol coating prevents the calcium and phosphate salts from reacting until they come in contact with saliva. Saliva dissolves the xylitol and releases the calcium and phosphate ions, which react continuously in

saliva with the fluoride ions to form protective fluorapatite on the teeth. By incorporating xylitol-coated calcium and phosphate in a permeable resin matrix that does not separate, Pulpdent has developed a sustained time-release varnish with uniform dosage that delivers 10 times more fluoride than the leading varnish brand. The pleasing taste ensures patient compliance.



Giving the tooth what it needs

4-Hour Cumulative Fluoride Release
In micrograms relative to 50.0 +/- 1.0 mg solid weight



Yapp R, Powers JM. Fluoride Ion Release from Several Fluoride Varnishes. Dent Advis Res Rpt 45:1, March 2012.

	FV50	Box of 50 x 0.4mL (0.42 gm) packets	
	FV200	Box of 200 x 0.4mL packets	
	FVT	Tube, 12mL (12.6 gm)	
	FVX100	100 x 0.4mL (no brush)	



ORTHO-COAT™

ORTHODONTIC SEALANT



Reduces or eliminates decalcification

Fluoride releasing

Prevents microleakage

Orthodontic brackets trap food and plaque. Since patients cannot clean under and around the brackets, carious lesions can form. The results can be disastrous. Ortho-coat coats the brackets and

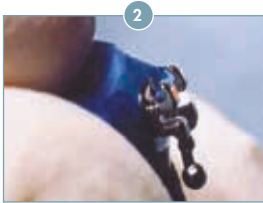
the teeth, preventing decalcification, staining and discoloration under the brackets.



If You've Seen This After Removing Brackets
You Need Ortho-Coat



Shows orthodontic bracket bonded to a tooth and coated with Ortho-Coat after immersion in saline solution for two months.



Shows the tooth stained with 0.25% methylene blue after two-month immersion in saline solution.



Shows stained tooth after removal of coated bracket. Note lack of dye penetration under bracket. The white area shows the outline of the coating, not the bracket, which has a smaller footprint.



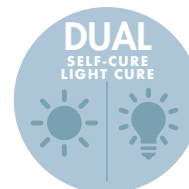
Shows underside of the stained bracket pad. Despite intense staining of the tooth and Ortho-Coat with methylene blue, there is no dye penetration or leakage beneath the bracket.

	OC	2 x 5mL (6.25 gm) syringes + 20 applicator tips	
	23R20	Red, 23 ga x 1/2", Prebent Tips, pkg. 20	



TUFF-TEMP PLUS™

PROVISIONAL VENEER, CROWN & BRIDGE RESIN - DUAL CURE



Dual Cure – Snap Set

Impact and fracture resistant

Grinds and powders without softening

Add-on and Glaze included



Pulpdent has inserted a synthetic rubber molecule into a diurethane dimethacrylate monomer and synthesized a proprietary rubberized-resin that is tougher, more impact and fracture resistant, and provides greater dimensional stability and tighter fitting provisional restorations, than acrylics and bis-acrylics. Breakage and debondings are minimized or eliminated.

The material grinds and powders producing crisp and accurate margins that do not soften or distort. Finishing instruments do not gum up or clog. Tuff-Temp Plus is dual cure, and the light cure option produces a full strength restoration on demand and is ideally suited for use with a clear vinyl polysiloxane template. Tuff-Temp Plus is fluorescent under black lights.

ADD-ON AND GLAZE

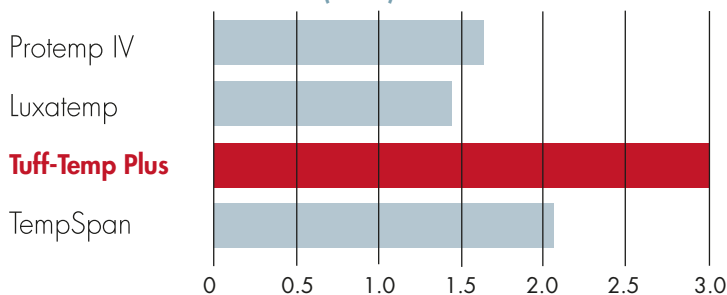
This **shade-matching flowable Add-on** is light cure and is formulated from the same proprietary rubberized-resin chemistry. It is ideal for making alterations and for smile design.

The **light cure glaze** has the same proprietary rubberized-resin chemistry that provides enhanced esthetics and patient satisfaction during temporization.

FLEXURAL STRENGTH

Tuff-Temp Plus exhibits very high flexural strength without brittleness. Its deflection at break, the key indicator of toughness, is 50% to 100% greater than bis-acrylics.

Deflection at Break (mm)

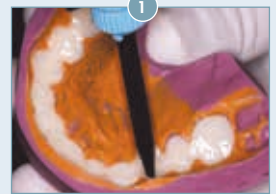


Protemp, Luxatemp and ProSpan are not trademarks Pulpdent.

PHYSICAL PROPERTIES

Working time:	45 seconds
Light cure setting time:	20 seconds
Initial self-cure setting time:	2 minutes from beginning of mix
Final self-cure setting time:	4:45 minutes from beginning of mix
Flexural strength:	75 (+/- 5) MPa
Compressive strength:	200 (+/- 20) MPa
Deflection at break:	2.9 mm (+/- 0.3 mm)
Vickers Hardness:	514 MPa

	TTP*	50mL (76 gm) cartridge, 1.2mL Add-on, and 3mL Glaze + 20 Automix tips + 6 tips *Specify shade: A1, A2, A3, A3.5, B, B1	
	TTP5*	5mL (7.6 gm) and 3mL Glaze + 8 Automix tips * Specify shade: A1, A2, A3, A3.5, B, B1	
	TTP50*	50mL (76 gm) cartridge, + 10 Automix tips * Specify shade: A1, A2, A3 only	
	TTG	Bottle of 6mL glaze	
	FSB 20	20 Automix tips for 50mL cartridge	
	A 20	20 Automix tips for 5mL syringe	
	DS 50	Dispenser for 50mL, 1:1 Automix cartridge	



Fill matrix ¾ full with Tuff-Temp Plus and seat in the mouth.



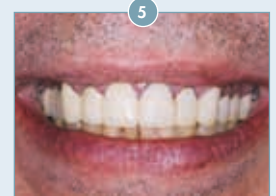
Removal time is 2 minutes from the beginning of the mix (approximately 75 seconds after insertion in the mouth).



Check the provisional restoration for marginal integrity.



The provisional is trimmed and polished but not yet glazed. Note the perfect margins.



The 12-unit provisional is glazed and cemented to place. The margins and esthetics are exceptional.



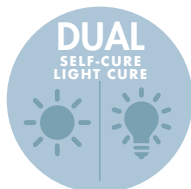
Note the excellent tissue condition upon removal of the provisional four weeks later.

Photography courtesy of Dr. Christopher Ramsey



SPEE-DEE™ BUILD-UP

MULTI-PURPOSE CORE & BUILD-UP RESIN



Formulated with
EMBRACE™
WetBond™



Dual Cure – Fluoride releasing – Radiopaque

Moisture friendly

Cuts like dentin

One-step post and core build-up

Spee-Dee Build-Up is specially formulated for one-step post cementation and core build up, ensuring a homogenous, one-piece internal structure. Nothing simulates tooth structure like Spee-Dee Build-Up. This material really does cut like dentin. Rotary instruments transition smoothly from dentin to Spee-Dee without ditching or gouging, cut smoothly and accurately, and do not

gum up or chatter. The unique moisture tolerant chemistry has self-adhesive and self-etching properties. Etching dentin and the use of bonding agents are optional when there is retention form in the preparation. Automix cartridge with angled tips for controlled dispensing.

CLINICAL INDICATIONS

- Post and core build-up after endo
- Direct bonded core without a post
- Vital tooth build-up for crown prep
- Re-cementing loose post and core
- Base/liner under restorations

PHYSICAL PROPERTIES

Compressive strength:

40,625 psi / 280 MPa

Flexural strength:

14,065 psi / 97 MPa

Self-cure intra-oral setting time at 37 ° C:

3:10 minutes

Light cure setting time:

20 seconds

Depth of cure:

4 mm

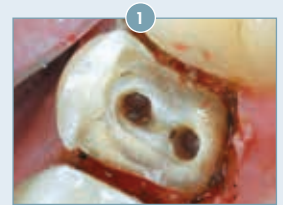
	SBU50	Automix cartridge of 50mL (83 gm) + 30 Automix tips	
	SBU	Automix cartridge of 25mL (41.5 gm) + 20 Automix tips	
	FD20	20 Automix tips	
	F20N2	20 Automix tips, with bendable 19 gauge cannula	
	DS24	Dispenser for 25mL, 1:1 Automix cartridge	
	DS50	Dispenser for 50mL, 1:1 Automix cartridge	



CORE FORMS

Transparent, clear polyethylene for light cure. Will not stick to core material. Tab on top and tapered sides for easy pick up and retrieval, and reference ring for accurate trimming.

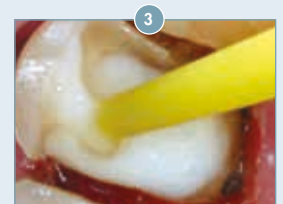
	HCF-AS	Box of 64 assorted core forms, 16 each size: S, M, L, XL	
	HCF*	Box of 64 core forms, all one size: S, M, L or XL * Specify size: Small (1), Medium (2), Large (3), XLarge (4)	



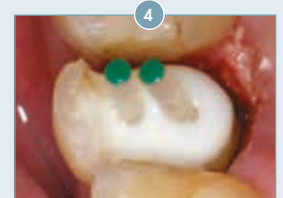
After endodontic treatment, a pre-molar is prepared with two post holes.



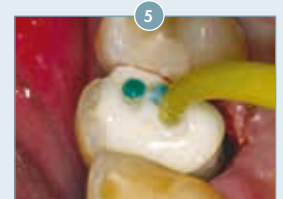
Pulpdent Etch-Rite is applied to the post holes and the preparation for 15 seconds (optional step).



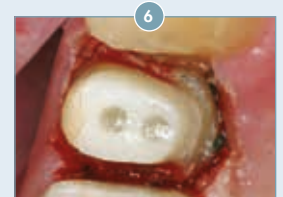
After rinsing thoroughly, removing excess moisture and leaving the tooth slightly moist, Spee-Dee Build-Up is dispensed into the post holes and around the preparation.



The posts are inserted with a twisting, up and down motion to ensure uniform coverage of Spee-Dee Build-Up, and then light cured for 20 seconds.



Spee-Dee Build-Up is now applied around the posts to the occlusal level.



The post and core preparation is trimmed and finished and ready for an impression or digital scan.



RADI-
OPAQUE



LIME-LITE™ ENHANCED

LIGHT CURE CAVITY LINER

LIGHT
CURE



No sensitivity and a more adhesive cavity liner and base

Calcium, phosphate and fluoride releasing

Moisture friendly • Universal dentin shade • Radiopaque

Specially formulated for use with adhesives, composites and conventional restorative materials.

Improved moisture-friendly formula:

- Greater adhesion to dentin

- Greater release of calcium, phosphate and fluoride
- Durable – high compressive strength and wear resistance
- Shock absorbing – will not fracture or crumble
- Contains no Bisphenol A, no Bis-GMA, and no BPA derivatives



Photos courtesy of Dr. C. H. Pameijer



1 Place Lime-Lite in the cavity prep.



2 Light cure Lime-Lite 20 seconds.



3 Etch the cavity prep with Etch-Rite 38% phosphoric acid.



4 Apply DenTASTIC UNO to the moist dentin surface for light cure, or UNO + DUO for dual cure procedures.



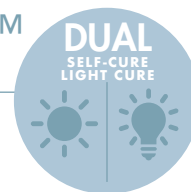
5 Final restoration incrementally layered with composite.

	LLE	4 x 1.2mL/2 gm syringes Lime-Lite Enhanced+ 20 applicator tips	
	LLE3	3mL/5 gm syringe Lime-Lite Enhanced+ 20 applicator tips	
	20L20	Pink, 20 ga x ½", Prebent Tips, pkg. 20	
	20L100	Pink, 20 ga x ½", Prebent Tips, pkg. 100	



DENTASTIC™ UNO™ • DUO™

LIGHT CURE ADHESIVE WITH DUAL CURE OPTION



Single component 5th generation

Exceptional bonding strength

Wet bonding technique

DenTASTIC™ UNO™ is an effective, single-component light cure adhesive for bonding to dentin, enamel, porcelain, metal, composite and other resins.

Use UNO for all direct bonding light cure applications.

DenTASTIC™ DUO™ is the dual cure catalyst for DenTASTIC UNO. Use UNO plus DUO for indirect restorations, core build ups, or whenever self-cure or dual cure capability is indicated.



Photos courtesy of Dr. C. H. Pameijer



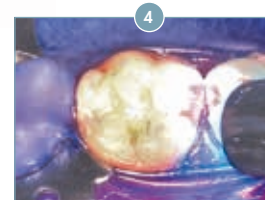
Apply Etch-Rite to the cavity prep for 15 seconds.



Rinse and leave dentin moist for wet bonding technique.



Use DenTASTIC UNO for light cure, or UNO + DUO for self-cure or dual cure applications.



Light cure for only 10 seconds.

PHYSICAL PROPERTIES: SHEAR BOND STRENGTH

DenTASTIC UNO
One-Step
Prime & Bond 2.1

34.2 MPa
32.6 MPa
31.8 MPa

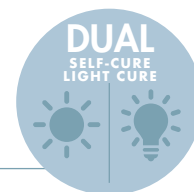
Testing performed at Department of Restorative Dentistry, The University of Texas Health Science Center at San Antonio.
One-Step and Prime & Bond 2.1 are not trademarks of Pulpdent Corporation.

	UNO	2 x 6mL UNO, 5mL Etch-Rite, 20 applicator tips, 50 brush tips		UNO-R	6mL bottle UNO
	UNDO	6mL UNO, 3mL DUO, 5mL Etch-Rite, 20 applicator tips, 50 brush tips		DUO	3mL bottle DUO, dual cure catalyst for UNO



EMBRACE™ WETBOND™ RESIN CEMENT

DURABLE MARGINAL SEAL



Eliminates microleakage

Releases phosphate and fluoride ions

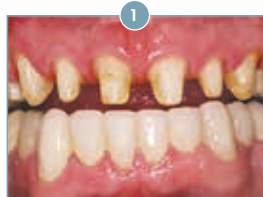
Self adhesive - Moisture friendly

Embrace Resin Cement is the first self-adhesive resin cement that bonds to the slightly moist tooth. Embrace is a hydrophilic resin, not a glass ionomer, and is formulated to be fully compatible with the moist oral environment. Embrace forms chemical bonds to dentin and enamel, precious and non-precious metals, ceramics, composites, and fiber posts. Bonding agents are not required;

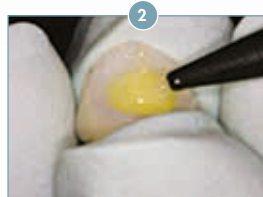
however, they can be used if desired. It is not necessary to etch dentin, but etching uncut enamel surfaces is indicated. Retention value of Embrace to zirconia copings is 29.32 kg, which indicates that Embrace performs equal to or better than the leading cement brands. Embrace resin cement is dual cure, fluoride releasing, and radiopaque.



Photos courtesy of Dr. Christopher Ramsey



1 Prepare teeth to receive restorations. Leave teeth slightly moist. No etching, silane or bonding agents are required.



2 Simply dispense cement directly into the restoration from the automix syringe.



3 Seat the restoration, light cure 1-2 seconds and remove excess cement.



4 The final result.

PHYSICAL PROPERTIES

Viscosity:	Medium and Low	Retention value (non-threaded titanium post):	32 kg
Compressive Strength:	44,500 psi / 307 MPa	Percent Solubility:	0.06%
Diametral tensile strength:	7,600 psi / 52 MPa	Film thickness:	12 microns

	EMCAR	Low Viscosity Automix Syringe Kit: 7 gm cement + 20 automix tips		EMCAR2	Low Viscosity Automix Syringe Refill: 3.5 gm cement + 10 automix tips
	EMCMR	Medium Viscosity Automix Syringe Refill: 7 gm cement + 20 automix tips		EMCMR2	Medium Viscosity Automix Syringe Refill: 3.5 gm cement + 10 automix tips
	A20	Automix Syringe Tips, pkg. 20			



EMBRACE™ WETBOND™ SEAL-N-SHINE™

PENETRATING FINISH AND POLISHING RESIN



Eliminates microleakage

Cures clear – No yellow tint

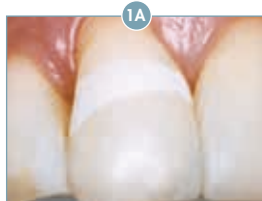
Durable, long-lasting, protective finish

Embrace Seal-n-Shine™ is a clear resin that penetrates and seals margins and the microporosities and cracks in composite restorations. It provides a smooth finish, eliminates the final polishing steps, bonds in a slightly moist field, and does not alter the anatomy or occlusion of the tooth, or discolor the restoration. It has been observed clinically and by scanning electron microscopy (SEM) that Embrace forms a close association with tooth structure

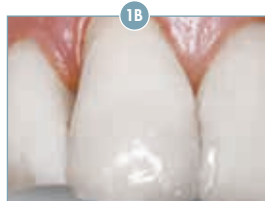
and integrates with the tooth in a way that is unique for a dental resin, resulting in a positive seal and a smooth margin that is better adapted to the anatomy of the tooth.



Photos 1A & B courtesy of Dr. C.H. Pameijer; photos 2A & B courtesy of Dr. Shradha Sharma and Dr. Gerard Kugel



Etched enamel and composite restoration.



Seal-n-Shine applied to etched enamel and composite and light cured.



Provisional restoration before Seal-n-Shine.



Provisional restoration after application of Seal-n-Shine.

	EMSNS	6mL bottle, brush handle + 100 brush tips	
	EMSNY	2 x 1.2mL syringes + 40 flocked tips	

SPARKLE DIAMOND POLISHING PASTE

Sparkle produces a glaze-like high luster finish on porcelain, gold, composite and metal. It does not splatter and washes off easily.



	SPARK	4 x 1.2mL syringes	
	SPARK-3	3mL syringe	



ETCH-RITE™

38% Phosphoric Acid – Washes off easily

Millions of applications each year

Etch-Rite™ is a soft, thixotropic blue gel with handling characteristics most preferred by clinicians. It dispenses through small gauge needles, stays where placed, washes off with ease, and provides the optimal etch pattern on dentin and enamel surfaces to ensure

mechanical retention of bonding agents, restorative resins and resin cements. Available in a wide variety of packaging options.



	ETCH	4 x 1.2mL (1.5 gm) syringes + 8 tips			ET-24	24 x 1.2mL syringes gel	
	ET50	2 x 25mL (64 gm) syringes, +5 x 3mL empty syringes + 50 tips			ET-50R	2 x 25mL syringes gel	
	ET-6	6mL (7.7 gm) syringe gel			ET-12	12mL (15.4 gm) syringe gel	
	25B20	Light Blue, 25 ga x 1/2", pre-bent Tips, pkg. 20			ET-TWIN	2 x 3mL syringes gel + 25 tips	
	25B50	Light Blue, 25 ga x 1/2", pre-bent Tips, pkg. 50			25B100	Light Blue, 25 ga x 1/2", pre-bent Tips, pkg. 100	

ETCH-ROYALE™

37% Phosphoric Acid – Creamier consistency – Darker blue color

For clinicians who prefer a creamier gel that readily settles into dentin and enamel, but does not run, Etch-Royale™ is the perfect choice. The darker blue color is easier to see in thin applications.

Etch-Royale has all the same features as Etch-Rite, but the consistency is slightly creamier than its famous sister product.



	ER	4 x 1.2mL (1.5 gm) syringes + 20 tips			ER-24	24 x 1.2mL syringes gel	
	ER50	2 x 25mL (64 gm) syringes, +5 x 3mL empty syringes + 50 tips			ER-50R	2 x 25mL (64 gm) syringes	



PORCELAIN ETCH GEL

SUPERIOR CERAMIC SURFACE PREPARATION

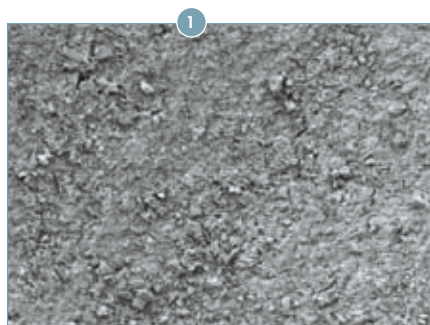
9.6% Hydrofluoric Acid

Does not stain ceramics or composites

Superior quality



Proper surface preparation enhances bonding values of resins and resin cements to porcelain. These SEMs taken before and after etching demonstrate the effectiveness of a one-minute application of Pulpdent Porcelain Etch Gel on a glazed porcelain surface.

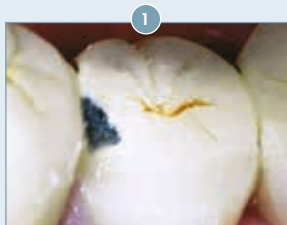


SEM* shows glazed porcelain surface BEFORE treatment.

(Magnification
500X)
*SEM:
Scanning Electron Microscopy

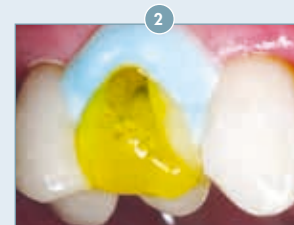


SEM* shows glazed porcelain surface AFTER 1-minute treatment with Pulpdent Porcelain Etch Gel. Note the microscopic tags in the porcelain surface.



This fractured PFM crown can be repaired intra-orally. Always etch porcelain surfaces of crowns, inlays and veneers prior to bonding.

Photos courtesy of Dr. Howard Glazer



Apply Pulpdent Porcelain Etch Gel to ceramic surface. The exposed metal surface should be abraded with a fine diamond. Note placement of Kool-Dam (blue) to protect soft tissue

	PEG	4 x 1.2mL (1.4 gm) syringes gel + 8 applicator tips	
	PEG-3	3mL (3.54 gm) syringe gel	
	25B20	Light Blue, 25 ga x 1/2", Prebent Tips, pkg. 20	



PORCELAIN PREP KIT

ECONOMICAL KIT FOR PREPARING PORCELAIN SURFACES FOR BONDING

PORCELAIN ETCH GEL

9.6% Hydrofluoric acid gel for etching porcelain surfaces prior to bonding

SILANE

Increases the bond strength of composites and resin cements to porcelain

DRY-RITE™

Promotes chemical drying of etched porcelain surfaces prior to applying Silane

KOOL-DAM™

Heatless liquid dam and block out resin



PPK

Kit: 1.2mL syringe each: Porcelain Etch Gel, Kool-Dam, Silane and Drying Agent + 12 tips

SILANE

FOR BONDING COMPOSITES AND RESIN CEMENT TO PORCELAIN

Coupling agent - Strengthens bond of resin to ceramic

Creates organic-inorganic bridges

This single component material increases the bond strength of organic resins, such as composites and resin cements, to porcelain. Apply silane to the etched and dried porcelain surface.



SIL

4 x 1.2mL (0.95 gm) syringes Silane
+ 8 applicator tips



SIL-3

3mL (2.38 gm) syringe Silane



22DR15

Dark Blue, 22 ga x 1/2", Prebent Red Dropper Tips, pkg. 20



EMBRACE™ RESTORATION & PFM REPAIR KIT

MULTI-FUNCTIONAL REPAIR KIT

EMBRACE™ FIRST-COAT™

Unique, one-step primer bonds chemically and mechanically to prepared ceramic and metal. Contains no solvents

EMBRACE™ SEAL-N-SHINE™

Polishes, penetrates and seals leaving a glaze-like finish on restored surfaces

EMBRACE™ ESTHETIC OPAQUER

A thin film opaques and desirable surface colors. Light cures in 20 seconds

KOOL-DAM™

Heatless liquid dam protects soft tissue, teeth, and restorative surfaces. Remains flexible after curing

PORCELAIN ETCH GEL

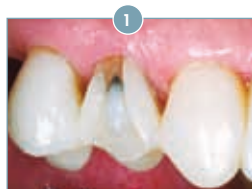
Buffered 9.6% hydrofluoric acid gel

A complete repair system that primes, protects, opaques, polishes and seals. First-Coat is a resin-based primer for metal and ceramic.

- Compatible with all restorative composites.
- No solvents, no modifiers, no mixing, no mess.
- Cures with all curing lights.



Photos courtesy of Dr. Robert A. Lowe



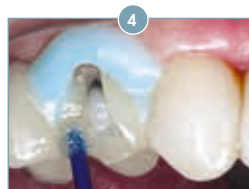
Fractured porcelain.



Apply Kool-Dam to protect gingiva and adjacent porcelain. Microabrade exposed metal.



Apply Porcelain Etch Gel to the porcelain for one minute or according to the instruction for the ceramic substrate.



Apply Embrace First-Coat to etched porcelain and abraded metal surface, thin lightly with air, and light cure.



Apply Embrace Esthetic Opaquer to the metal surface. Apply composite, finish, polish and apply Embrace Seal-n-Shine for perfect results.

	EMPFM	1.2mL syringe each First-Coat, Seal-n-Shine, Opaquer, Porcelain Etch Gel, Kool-Dam + accessories	
	EMFC	1.2mL syringe Embrace First-Coat + 10 flocked tips	
	EMO*	1.2mL syringe Embrace Opaquer, in off white, bleach white, pink and dark yellow (1 = bleach white, 2 = off white, 4 = pink, 5 = dark yellow)	



EDTA

17% SOLUTION

FOR THE INSTRUMENTATION OF ROOT CANALS AND SMEAR LAYER REMOVAL

An effective chelating agent

Decalcifies canal walls

Buffered to a neutral pH

EDTA 17% Solution is buffered to a neutral pH and is an effective calcium binding or chelating agent used to facilitate instrumentation of root canals and for smear layer removal.

It decalcifies the canal walls making it easier to enlarge and shape the canal with files and reamers.



	EDTA-30	30mL bottle	
	EDTA-60	60mL bottle	
	EDTA-120	120mL bottle	
	EDTA480	480mL bottle	



FILE-RITE™

LUBRICANT FOR ENDODONTICS

17% EDTA gel with lubricant

Minimizes binding and breaking of files

Decalcifies canal walls

File-Rite is an effective chelating agent for decalcifying canal walls. The semi-gel formulation contains lubricant to facilitate instrumentation of root canals and helps prevent binding and breaking of files. The convenient syringe allows direct dispensing

into canals using 30-gauge x 1" (2.5 cm) applicator tips. File-Rite rinses out easily with irrigation.



	FILE	4 x 5 gm syringes + 50 each 30 ga x 1" applicator tips	
	30F50	Orange - 30 ga x 1", straight applicator tips, pkg. 50	

PREP-RITE™ RC

FACILITATES INSTRUMENTATION OF THE ROOT CANAL

15% EDTA gel with lubricant and peroxide

Neutral pH

Prep-Rite™ RC is a viscous EDTA paste for picking up on files or filling the access cavity using the traditional technique. It is an effective chelating agent that softens canal walls and facilitates instrumentation of the root canal. Peroxide provides an effervescent

action and lubricant helps prevent binding and breaking of files. Prep-Rite has a neutral pH and rinses out easily with irrigation.



	PRC	4 x 5 gm syringes	
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C A L C I U M

TEMPCANAL™ ENHANCED

TEMPORARY CALCIUM HYDROXIDE ROOT CANAL TREATMENT PASTE

Enhanced formula – will not clog 27-gauge needle

Non-drying paste – extended shelf-life - pH >12

TempCanal Enhanced™ is easier to use, does not dry and provides the full benefits of calcium hydroxide in root canal therapy. For routine use as an intracanal dressing between office visits and for use in complicated cases involving traumatic injury and other instances where

extended calcium hydroxide therapy is indicated. Flows through 27 gauge x 25 mm endodontic irrigation needles with 2-side-vents for controlled placement and uniform coating of canal walls, and with closed end to prevent overfills.



	TEK	3mL syringes + 20 endo irrigation needles (27-gauge x 1", 2-side-vent)		TE3	3mL syringe	
	TE4	4 x 1.2mL syringes + 20 endo irrigation needles (27-gauge x 1", 2-side-vent)		TE20N	27-gauge x 1" (0.4mm x 25mm), 2-side-vent - Pkg. of 20	

FORENDO™ PASTE

CALCIUM HYDROXIDE WITH IODOFORM FOR ROOT CANAL THERAPY

Strong action - pH > 12 – Non-setting – Radiopaque

A calcium hydroxide paste with iodoform in a silicone oil base, Forendo Paste is a dressing for routine use between office visits and for complicated cases when extended calcium hydroxide therapy is indicated. Forendo Paste can be used to treat abscesses,

periapical lesions, traumatic injuries, root resorption, fractures and perforations, pus, hemorrhage, exudation and weeping canals. Forendo Paste adds the strong action of iodoform to the benefits of the calcium hydroxide canal treatment paste.



FORE

Forendo Paste, 2.2 gm syringe + 20 applicator tips

H Y D R O X I D E



MULTI-CAL™

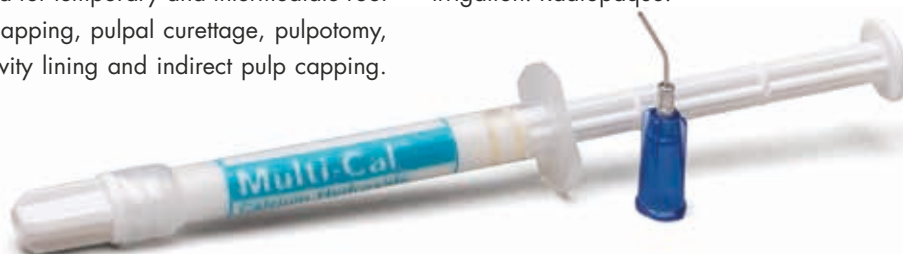
All purpose, non-setting calcium hydroxide paste

For root canal therapy and vital pulp therapy

40% ($\pm 2\%$) calcium hydroxide - pH > 12 - Radiopaque

Multi-Cal is a smooth, creamy calcium hydroxide preparation recommended for all clinical applications where calcium hydroxide is indicated. Multi-Cal is used for temporary and intermediate root canal therapy, direct pulp capping, pulpal curettage, pulpotomy, dentin bridge formation, cavity lining and indirect pulp capping.

Multi-Cal treats periapical abscesses and lesions, and stimulates apexification. The non-setting paste is easily removed with file and irrigation. Radiopaque.



	MULTI	4 x 1.2mL syringes + 8 applicator tips (22 gauge x 1/2")	
	MULTI-3	3mL syringe	
	22D20	Dark Blue, 22 ga x 1/2", Prebent Tips, pkg. 20	

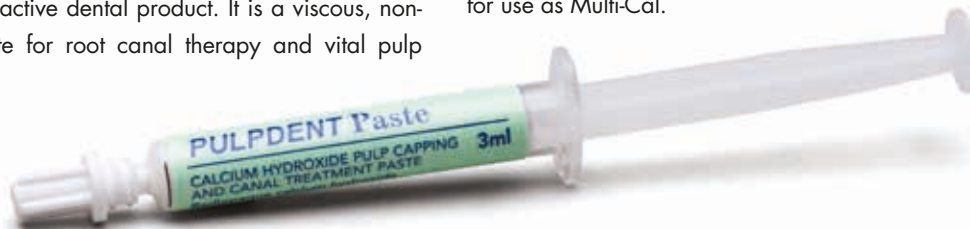
PULPDENT® PASTE

40% ($\pm 2\%$) calcium hydroxide in a viscous aqueous methylcellulose paste

70 years of success

Pulpdent® Paste was the first pre-mixed calcium hydroxide pulpal dressing and the first bioactive dental product. It is a viscous, non-setting, radiopaque paste for root canal therapy and vital pulp

therapy. Pulpdent Paste has pH > 12 and all the same indications for use as Multi-Cal.



	PSYK	3mL syringe + 24 applicator tips (18 ga x 1")		PSY	3mL syringe	
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CALCIUM HYDROXIDE for ROOT CANAL THERAPY

For routine use as an intracanal dressing between office visits

For extended calcium hydroxide therapy in complicated cases

Non-surgical solution for abscessed teeth and failed root canals

- pH > 12
- Dissolves remnants of pulp tissue
- No mixing or condensing
- Easily removed with file and irrigation
- Radiopaque
- Treats abscesses and periapical lesions
- Treats traumatic injuries, avulsed and luxated teeth
- Discourages traumatic root resorption
- Stimulates hard tissue formation.

CLINICAL USES

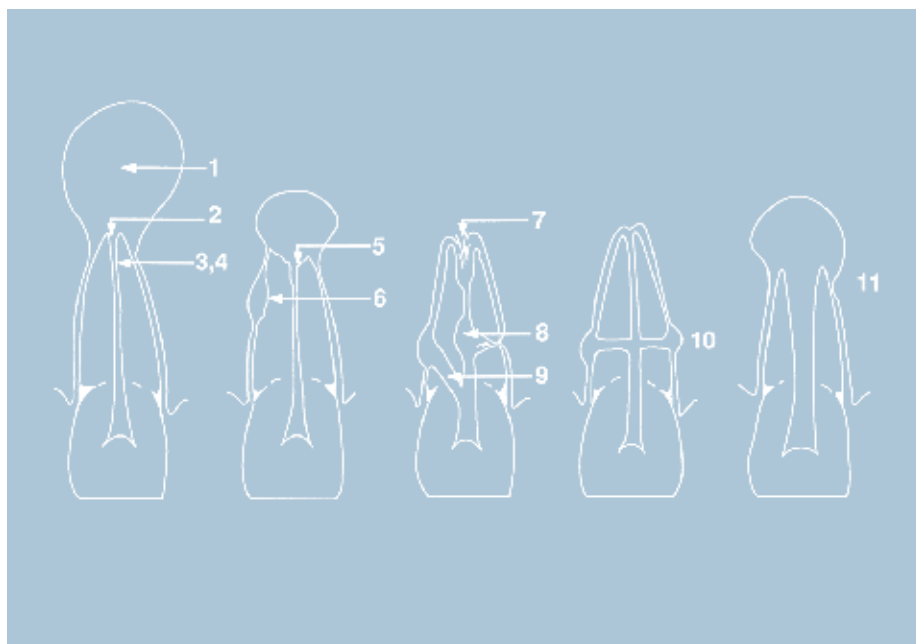
Pulpdent Calcium Hydroxide Pastes for Root Canal Therapy

TempCanal™ Enhanced, Multi-Cal™, Pulpdent® Paste & Forendo™ Paste

Dr. Heithersay's original research on the use of Pulpdent Paste for root canal therapy has profoundly changed the way we treat endodontically involved teeth. Numerous other researchers have

corroborated this research, and these treatment modalities are taught at dental schools worldwide. An extensive bibliography can be found in *Save That Tooth* by Dr. Harold Berk.

Heithersay GS. Calcium hydroxide in the treatment of pulpless teeth with associated pathology. J Brit Endo Society 1975;8(2);74-93.



- 1 Exudation control: puss, hemorrhage and weeping canals
- 2 Abscesses and periapical lesions
- 3 Antibacterial intracanal dressing
- 4 Temporary root filling
- 5 Apical inflammatory resorption
- 6 Inflammatory resorption following trauma
- 7 Apical internal resorption
- 8 Internal-external root resorption
- 9 Root perforations
- 10 Transverse root fractures
- 11 Apexification in incompletely developed pulpless teeth



CASE 1 - TREATMENT OF ABSCESSED TEETH WITH TEMPCANAL

Four months after an auto accident in which her chin hit the steering wheel, the patient presented with painful loose lower central incisors. The case was treated immediately by removing the pulps and placing TempCanal.



Radiograph shows abscessed teeth with considerable bone loss.



Six months after root canal therapy and treatment with TempCanal, radiograph shows bone filling in and healing.



One year follow up shows healing and obturation with Pulpdent Root Canal Sealer.



Radiograph taken nine years after final filling shows long term success.

CASE 2 - REVERSING ROOT CANAL FAILURES

Six years after root canal therapy, the patient presented with a large periapical lesion. This tooth can be saved.



Pre-operative radiograph shows large periapical lesion with furcation involvement. (1979)



Six years after root canal treatment, a radiograph shows that the periapical lesion is even worse. (1985)



The crown, post and gutta percha were removed, and the canals were filled with TempCanal. Radiograph taken 9 months after treatment with TempCanal shows healing. (1986)



Radiograph taken nine years after final filling shows long term success. (1998)

CASE 3 - HARD TISSUE FORMATION WITH TEMPCANAL

The patient lost his maxillary left central incisor due to traumatic injury. There is external root resorption on the remaining central incisor.



Radiograph shows external root resorption on the mesial aspect of the maxillary right central incisor. The root canal is filled with TempCanal to promote remineralization.



Radiograph taken three months later shows remineralization of the mesial aspect of the right central incisor.

Complicated cases are routinely treated with Pulpdent calcium hydroxide pastes. To review case histories and techniques, refer to Save That Tooth by Dr. Harold Berk. Additional cases from the book appear in the education section of the Pulpdent website at www.pulpdent.com.



ROOT CANAL SEALER

ENDODONTIC FILLING MATERIAL

Tissue compatible

Modified zinc oxide-eugenol formula - radiopaque

For all permanent filling techniques

Pulpdent Root Canal Sealer meets ANSI/ADA specification 57 for endodontic filling material. The powder contains zinc oxide, zinc stearate, calcium phosphate and barium sulfate. The liquid contains eugenol and Canada balsam. A thick mix eliminates free

eugenol and ensures patient comfort. Root Canal Sealer does not shrink upon setting and resorbs with roots of deciduous teeth. It can be drilled for a post and can be removed with mechanical and hand instrumentation, if necessary.

COMPATIBLE WITH ALL PERMANENT FILLING TECHNIQUES:

- Pressure syringe technique
- In conjunction with solid core
- Paste filler / Lentulo
- Lateral condensation



RK

Root Canal Sealer Kit: 15cc powder, 7.5mL liquid, mixing pad, scoop

PULPDENT® PRESSURE SYRINGE®

ENDODONTIC SYRINGE FILLS THE APEX FIRST



PSK

Pressure Syringe, 30 assorted needles, Pulpdent Root Canal Sealer Kit, Wonder Orange™ Cleaning Solution



PS-O

Pressure Syringe

Visit www.pulpdent.com for complete information on the Pressure Syringe technique.

WONDER ORANGE™

100% NATURAL CITRUS ESSENCES – CLEANS SURFACES, INSTRUMENTS AND SKIN

For removing zinc oxide dental cements, impression materials and waxes from vinyl furniture, face and hands. Also used for cleaning

the Pulpdent Pressure Syringe. No artificial ingredients.



WO-8

Wonder Orange, 8 oz. (236mL)



HEROIC DENTISTRY

MARIA: By Dr. Delfin Barquero

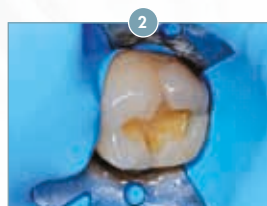
Quick, Effective, One-visit, Multiple-unit ACTIVA Restorations

Treatments that would normally require multiple visits can be completed in just one appointment with materials like ACTIVA BioACTIVE-RESTORATIVE.

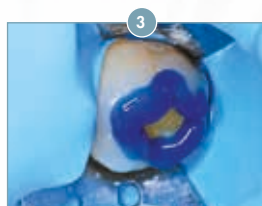
Maria was in her early 60s when she was referred to our practice with nine posterior teeth requiring restorations.



Failed amalgam restoration



Amalgam and decay are removed and cavity prepared



Enamel is etched for 20 seconds



Bonding agent is applied



Shows placement of ACTIVA BioACTIVE-RESTORATIVE



Shows the completed ACTIVA restoration



Shows several posterior teeth prepared for restoration



Final posterior restorations with ACTIVA

She would soon be undergoing radiation therapy for squamous cell carcinoma, a common form of skin cancer, and due to concerns about infection from untreated caries, she wanted all dental restorations completed before starting cancer treatment.

Xerostomia is a typical side effect of radiation, and this leads to root caries, which is often visible within several months. This was a concern as was Maria's ability to maintain adequate oral hygiene during her radiation treatment. Time and cost were also considerations.

Materials that promote remineralization can help protect compromised teeth. I chose ACTIVA BioACTIVE-RESTORATIVE because I could complete the case quickly and effectively, and the material supports the natural remineralization process and keeps the margins intact with apatite formation and a non-soluble seal at the material-tooth interface. The release and recharge of calcium, phosphate and fluoride ions is pH sensitive and beneficial to tooth structure, and the rubberized-resin component provides a durable, fracture resistant restoration.

The teeth were prepared, etched, bonded, and restored with ACTIVA. The flowable characteristics of ACTIVA allowed me to complete each posterior restoration in eight minutes. The material adapted easily to the tooth, produced no bubbles or voids, and provided excellent results.

The grateful patient was pleased with the esthetics and impressed that all nine restorations could be placed in a single, affordable appointment.

For more than one hundred years, the tradition of dentistry has been passed down through the Barquero family in Costa Rica. Dr. Delfin Barquero continues this proud tradition bringing innovative new technologies and sciences to the practice of modern dentistry. Dr. Barquero teaches and lectures worldwide.



LIGHT
CURE



KOOL-DAM™

HEATLESS LIQUID DAM & BLOCK OUT RESIN

MOISTURE
FRIENDLY



Does not produce heat when cured, ensuring patient comfort

Remains rubber-like and flexible after curing

Tear resistant - Easily removed

Kool-Dam™ is formulated to eliminate the problems associated with light cure liquid dam materials. Apply Kool-Dam on the gingival or tooth surface and light cure prior to bleaching, sandblasting, applying porcelain etch or other procedures requiring intraoral protection. Also use Kool-Dam to block out undercuts prior to

taking impressions. Kool-Dam remains cool during light curing and remains flexible when cured. It is conveniently dispensed from a syringe using small applicator tips for accurate placement, and is easily removed upon completion of the procedure.



Kool-Dam is placed to protect the gingiva. It light cures in 20 seconds.



Kool-Dam is placed to protect soft tissue prior to bleaching.



Kool-Dam is placed on the model prior to making a custom bleaching tray.

	PD	2 x 3mL syringes, + 10 pre-bent tips, 18 ga, + 10 pre-bent tips, 20 ga				
	PDB	Bulk Pack: 10 x 3mL syringes				
	18G20	Green, 18 ga x 1/2", Prebent Tips, pkg. 20			20L20	Pink, 20 ga x 1/2", Prebent Tips, pkg. 20



SNOOP™

CARIES DETECTING DYE



Dark blue color provides strong contrast with dentin and the pulp

Allows accurate detection of infected dentin

Increased reliability, no error

Carious dentin is made up of two distinct layers:

- The layer of outer infected dentin is soft, discolored, non-vital, nonsensitive, cannot remineralize, should be removed and is stained by Snoop in 10 seconds.
- The layer of inner uninfected (affected) dentin is not infused with bacteria, is capable of remineralizing, should not be removed and is not stained by Snoop in 10 seconds.

Snoop™ distinguishes between outer infected and inner affected dentin in 10 seconds. Snoop identifies infected carious dentin and helps the practitioner preserve vital dentin that should not be removed. The caries detecting dye stains the denatured collagen that is only present in the outer infected dentin. This is an important tool for conservative dentistry.

Photos courtesy of Dr. C.H. Pameijer



Shows obvious occlusal caries.



After removing obvious caries, apply SNOOP for 10 seconds.



Rinse and remove only the stained infected dentin.



Re-apply SNOOP and rinse. No further staining means no remaining infected dentin.



	SNOOP	12mL bottle	
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DENTIN DESENSITIZER

FOR APPLICATION TO ALL DENTIN SURFACES

Dentin Desensitizer contains 5% glutaraldehyde in water with fluoride added to enhance stability. It is compatible with adhesives and composites as well as traditional cements, and it does not interfere with bonding.



	DES	12mL bottle	
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PERIOCARE™

PERIODONTAL DRESSING

Kind to the tissues

Neutral odor and taste – Patient pleasing

Metal oxide and vegetable oil base

PerioCare™ is a two-paste, highly elastic periodontal dressing that sets resiliently hard and does not chip or fall apart in the mouth. It assists in tissue placement after periodontal surgery and provides durable protection of tissue. After mixing equal amounts of part one and part two, PerioCare is ready to pick up with wet fingers in about 45-60 seconds. It has a working time of 4-5 minutes and sets in 15 minutes.



	PC	90mL tube paste, 90mL tube gel, mixing pad	
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MINI-BOWLS

Non-stick silicone – For mixing acrylic

Suction cup on bottom holds bowl to the table

Sterilize by any method



	B-MS3	Small, 8 cc, set of 3 (1" diameter)			B-ML	Large, 80 cc, one each (2.25" diameter)	
	B-MM2	Medium, 30 cc, set of 2 (1.625" diameter)			B-MA	Assorted: 2 small, 1 medium, 1 large	

CODE RINGS

	CR*	Pkg. of 100, all one color			CR*-50	Pkg. of 50, all one color	
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Specify color: * 1=white, 2=yellow, 3=blue, 4=red, 5=green, 6=black, 7=gray, 8=brown, 9=orange, 10=mauve, 11= pink, AS=assorted

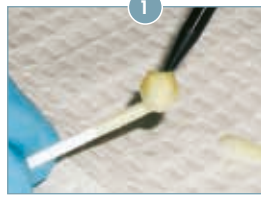


PIC-N-STIC™

A HANDLE FOR SMALL OBJECTS

The original "handle for small objects" has numerous applications from dentistry to model making to replacing hearing aid batteries. The 2" long stick is 2 mm in diameter with an adhesive tip on

one end. Apply light pressure to pick up small items for easier handling and placement. The adhesive does not transfer to the item. To release, simply twist the stick gently.



Embrace Resin Cement is placed on an inlay seated on a Pic-n-Stic.



Pic-n-Stic assists in placement of the inlay.



Pic-n-Stic is used to place an orthodontic bracket.



PIC

Box of 60

BRUSH TIPS AND HANDLES

APPLICATION ACCESSORIES



	BR	Brush tips, 24mm length, bag of 100		BRL	Brush tips, 24mm length, bag of 500 + 2 handles
	HAN	Brush handle, 5" length, random colors			



T-BANDS™

MATRIX BANDS

These self-contained matrix bands do not require matrix retainers. "T"- Bands are made of soft, adaptable brass or stainless steel matrix material (.002"/.05mm thick) and are available straight,

curved, narrow (5/32"), wide (1/4") and in assortments. "T"- Bands are especially popular for use in pediatric dentistry.

	BTBS/N	Brass Straight /Narrow (5/32") Box of 100		BTBC/N	Brass Curved/Narrow (5/32") Box of 100	
	BTSS/N	Stainless Straight /Narrow (5/32") Box of 100		BTSS/N	Stainless Curved/Narrow (5/32") Box of 100	



A P P L I C A T I O N S



FILE-RITE™

Orange, 30 ga x 1",
Straight Tips

30F50 - pkg 50

30F100 - pkg 100



**ETCH-RITE™
ETCH ROYALE™
PORCELAIN ETCH GEL™**

Light Blue, 25 ga x
1/2", Prebent Tips

25B20 - pkg 20

25B50 - pkg 50

25B100 - pkg 100



**EMBRACE™ WETBOND
PIT & FISSURE SEALANT™
ORTHO-COAT™**

Red, 23 ga x 1/2",
Prebent Tips

23R20 - pkg 20

23R100 - pkg 100



MULTI-CAL™

Dark Blue, 22 ga x
1/2", Prebent Tips

22D20 - pkg 20

22D100 - pkg 100



**EMBRACE™ WETBOND
PIT & FISSURE SEALANT™**

Black, 22 ga x 1/2",
Prebent Tips

22K20 - pkg 20

22K100 - pkg 100



SILANE™

Dark Blue, 22 ga x
1/2", Prebent Red
Dropper Tips

22DR15 - pkg 15

22DR75 - pkg 75



**KOOL-DAM™
LIME-LITE™**

Pink, 20 ga x 1/2",
Prebent Tips

20L20 - pkg 20

20L100 - pkg 100



KOOL-DAM™

Black, 19 ga x 1/2",
Prebent Tips

19K20 - pkg 20

19K100 - pkg 100



**KLEER-VENEER™
KOOL-DAM™**

Green, 18 ga x 1/2",
Prebent Tips

18G20 - pkg 20

18G100 - pkg 100



TEMPCANAL™ ENHANCED™

27-gauge x 1" (0.4mm
x 25mm), 2-side-vent

TE20N - pkg 20

TE50N - pkg 50

TE100N - pkg 100



**EMBRACE™
SEAL-N-SHINE™
EMBRACE™ FIRST-COAT™**

Dark Blue, 25 ga x
1/2", All Plastic Flocked
Tips

P2520 - pkg 20

P25100 - pkg 100



SPEE-DEE BUILD-UP™

Green, clear, with
bendable 19-gauge
metal cannula

F20N2 - pkg 20



SPEE-DEE BUILD-UP™

Automix Cartridge Tip +
Intra-Oral Tips

FD20 - pkg 20



TUFF-TEMP PLUS™

Automix Tips

FSB20 - pkg 20



**TUFF-TEMP PLUS™
EMBRACE™ RESIN CEMENT
ACTIVA BioACTIVE CEMENT™**

Automix Syringe Tips

A20 - pkg 20

A50 - pkg 50



**ACTIVA BioACTIVE RESTORATIVE™
ACTIVA BioACTIVE BASE/LINER™
ACTIVA BioACTIVE CEMENT™**

Automix Tips, clear,
with bendable 20-gauge
metal cannula

A20N1 - pkg 20

A50N1 - pkg 50



**ACTIVA BioACTIVE
RESTORATIVE™**

Automix Tips, clear +
short intraoral tips
(IOT)

AD20T - pkg 20

AD50T - pkg 50



**ACTIVA BioACTIVE
RESTORATIVE™**

Automix Tips, clear + long,
narrow intraoral tips
(IOR)

AD20R - pkg 20

AD50R - pkg 50



**ACTIVA BioACTIVE
RESTORATIVE™**

Automix Tips, clear,
straight, tapered

AS20 - pkg 20

AS50 - pkg 50



FLECTA™

DISPOSABLE MIRRORS

Highest quality single-use mirror

40% larger viewing surface

Made in Watertown, Massachusetts USA

The innovative Flecta design has many advantages. The unbeatable, low single-use price allows you to have a shiny new mirror for every patient - no more scratches and blotches. The highest quality disposable mirror available, Flecta's elongated shape has a 40% larger viewing surface. The pull tab easily

removes the protective film from the mirror surface. The mirrors are double-sided with back side light reflector. The light weight comfort handle reduces stress and fatigue and the offset handle design is a better tongue guard and cheek retractor. Flecta mirrors can be given to patients as take-home gifts.

THE ADVANTAGES OF FLECTA DISPOSABLE MIRRORS ARE CLEARLY VISIBLE



40% More Viewing Area.
No more scratches and blotches.



Expanded posterior view using the
Flecta Disposable Mirror.



FLEC

Flecta, Box of 200



MIXING WELLS

FOR USE WITH ALL DENTAL MATERIALS

Available in two-well and four-well configurations

Perforated sheets for convenient handling and storage

Made from a high molecular weight polymer

These convenient disposable mixing wells are compatible with all solvents, bonding agents, and dental materials.

AVAILABLE IN ECONOMICAL BULK PACKS



	MW-2	Disposable Mixing Wells, two-well configuration, box of 480	
	MW-4	Disposable Mixing Wells, four-well configuration, box of 420	

PULPDENT® Corporation

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Watertown, MA 02472 - USA

Tel: 800-343-4342 / 617-926-6666

Fax: 617-926-6262

sales@pulpdent.com / www.pulpdent.com

CAT-2021-NP

PRSRT STD
US POSTAGE
PAID
PULPDENT
CORPORATION