

**kuraray**

Light-Cure, Self-Etching Bonding Agent

# ***CLEARFIL™ SE Protect\****

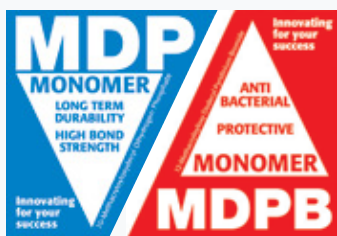
## ***SE Protects Your Patients.***

### **Features from CLEARFIL SE BOND**

- **Virtually no post-operative sensitivity**
- **Excellent bond strength** for enamel and dentin
- **Fast and simple procedure** with low technique sensitivity

### **Advanced New Features**

- **Antibacterial cavity cleansing effect**
- **Fluoride-releasing properties**
- **Higher, more durable bond than CLEARFIL SE BOND**



**\*Formerly called CLEARFIL PROTECT BOND**

**KURARAY AMERICA, INC.**

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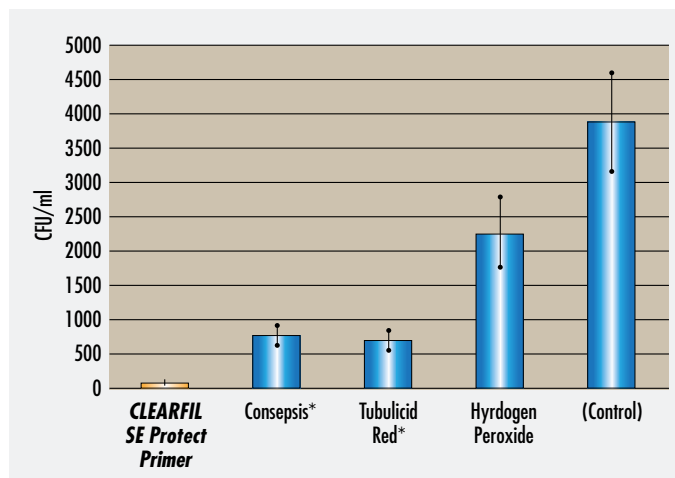
# Advanced New Features

# for More Confidence

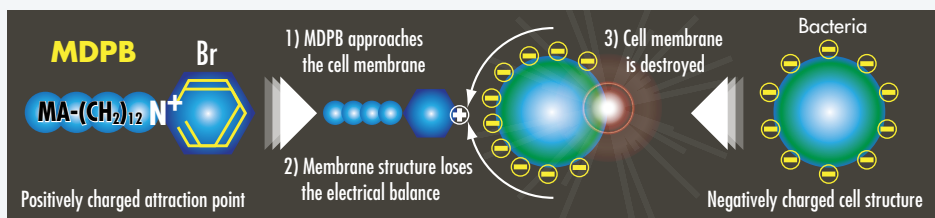
## Antibacterial Cavity Cleansing Effect from MDPB

Studies show that the risk of bacteria remaining in a cavity tends to increase with the smaller, "minimal intervention" cavities<sup>1)</sup>. Many doctors are using cavity cleansers, such as Consepsis (Ultradent) to address this tendency. CLEARFIL SE Protect contains a new functional monomer MDPB, which exhibits an "Antibacterial Cavity Cleansing Effect." The antimicrobial effect with CLEARFIL SE Protect is greater than with current cavity cleansers as shown in Fig.1, and is biologically safe because MDPB is fixed and will not leak after curing<sup>2)</sup>. In addition, CLEARFIL SE Protect is a cost and time saver by eliminating extra steps.

- 1) S. Imazato; Dent. Mater. J., 28(1), 11-19, 2009
- 2) E.A. Koulouzidou et al.: J. Contemp Dent. Pract., 9(7), 57-64, 2008

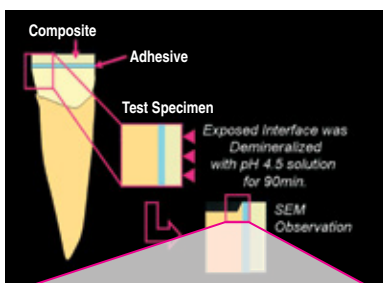


**Fig. 1** Number of Bacterial Recovery: Data from M. Türkün et al. Am. J. Dent., Vol. 19, 166-170, 2006.  
\*Not a registered trademark of Kuraray Co., Ltd.



**Fig. 2** The bactericidal mechanism of MDPB is presumed to be similar to the well-know antibacterial agent CPC\*\*, which is in many tooth-pastes and mouth rinses.

\*\*Cetyl pyridinium chloride



## Fluoride-Releasing

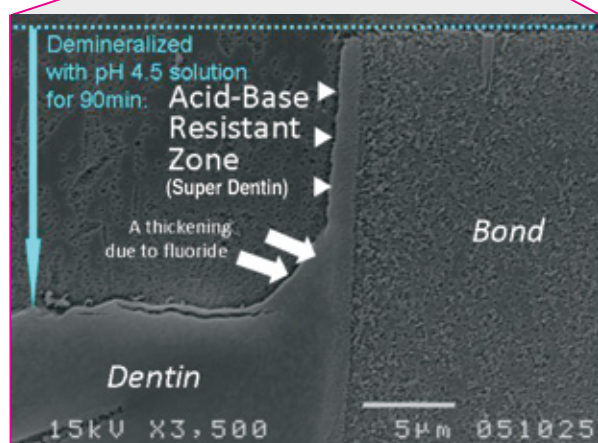
CLEARFIL SE Protect contains a patented\*\*\*, specially treated sodium fluoride (NaF); the NaF in CLEARFIL SE Protect is coated with a unique polymer capsule that allows release of the NaF while the bonding layer physical properties, including strength, are maintained.

CLEARFIL SE Protect makes an "acid-base resistant zone" (called **Super Dentin**) interface between the bond and dentin behind the hybrid layer (Fig. 3, SEM image), as a result of the fluoride release. Etch & rinse (total-etch) products like Adper Single Bond cannot make this zone<sup>3) 4)</sup>. This zone is 1.2µm which is thicker than the hybrid layer and very important for resisting the acid generated by bacteria if microleakage does occur<sup>3) 4)</sup>.

**Fig. 3** SEM image after soaking in a mild acid condition: Courtesy of G. Inoue, T. Nikaido and J. Tagami, Tokyo Medical and Dental University, Japan

- 3) K. Waidyasekera, J. Tagami et al., J. Dent (37), 604-609, 2009
- 4) T. Nikaido, J. Tagami et al., Biomed Mater Eng. 2009;19(2-3):163-71

\*\*\* Patent number: US5908879

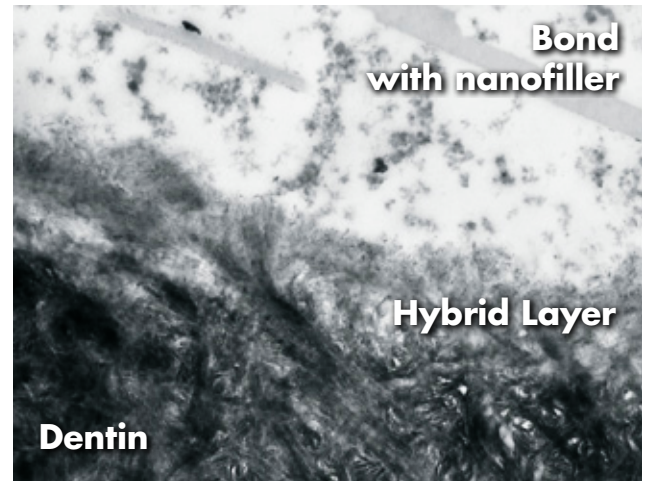


# Features from CLEARFIL SE BOND for Predictable Treatment

## Virtually No Post-Operative Sensitivity

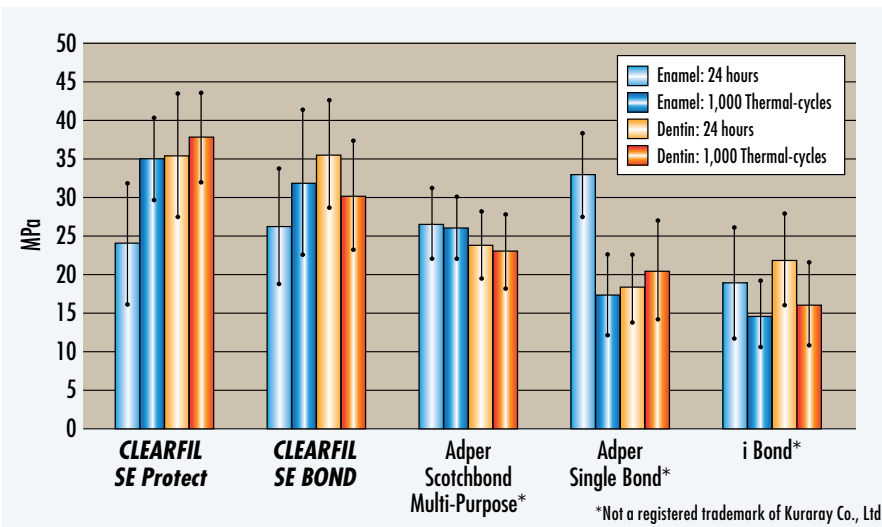
Studies evaluating post-operative sensitivity of CLEARFIL SE Protect were published by Dr. Türkün, Ege Univ. School of Dentistry (Turkey) and THE DENTAL ADVISOR. The results reported that no post-operative sensitivity was experienced during one year<sup>5)</sup> and during 6 weeks<sup>6)</sup> evaluation period, respectively. The image in Fig. 4 was created using Transmission Electron Microscopy (TEM) technology. It clearly shows that CLEARFIL SE Protect bonds strongly to dentin. No gaps is a key factor in preventing post-operative sensitivity.

5) L. S. Türkün et al. JADA Vol. 136, 657-664 2005  
6) The Dental Advisor, Vol. 21, No.8, Oct. 2004



**Fig. 4** TEM Micrograph: Courtesy of Dr. Hidehiko Sano, et al., Hokkaido Univ. Japan

## Superior Bond Strength and Durability



The test results of tensile bond strength (Fig. 5) show that CLEARFIL SE Protect has clear advantages regarding bond strength and durability compared with 3- or 2-step total-etch (etch and rinse) bonding agents, such as Adper Scotchbond Multi-Purpose\* (3-step) or Adper Single Bond\* (2-step), and 1-step self-etch such as i Bond\*.

In addition, CLEARFIL SE Protect showed excellent clinical performance in high stress bearing areas for at least five years<sup>7)</sup>.

7) L. S. Türkün: J. Dent. Res. 2008, IADR abstract 0623

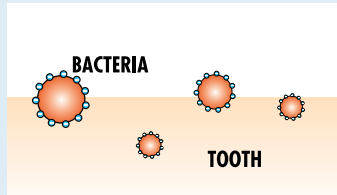
**Fig. 5** Tensile bond strength of adhesives to enamel and dentin. K.L. O'Keefe, V. Santiago-Doyle, L.M. Pinzon, J.M. Powers. J Dent Res 84: 2005 [Abstract 2970].

# Simple & Easy

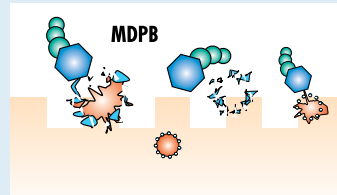


# Basic Procedure

## Prepared Tooth

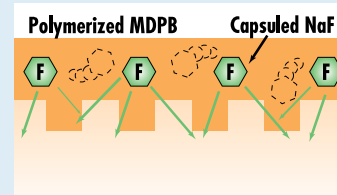


## Primer



- Apply **PRIMER** and leave for 20 sec.
- Dry with gentle air flow

## Bond



- Apply **BOND**
- Air flow gently
- Light-cure for 10 sec.

## Restoration



# Ordering Information



## Kits

ITEM #	PRODUCT NAME	CONTENTS
#2870KA	<b>CLEARFIL SE Protect Kit</b>	6ml x 1 CLEARFIL SE Protect PRIMER 5ml x 1 CLEARFIL SE Protect BOND Accessories: 2 Brush tip handles, 1 Mixing dish, 1 Light-blocking plate, 1 Outer case, 100 Disposable brush tips
#2872KA	<b>CLEARFIL SE Protect Value Kit</b>	6ml x 3 CLEARFIL SE Protect PRIMER 5ml x 3 CLEARFIL SE Protect BOND Accessories: 2 Brush tip handles, 1 Mixing dish, 1 Light-blocking plate, 1 Outer case, 300 Disposable brush tips

## Refills

ITEM #	PRODUCT NAME	CONTENTS
#2881KA	<b>CLEARFIL SE Protect BOND</b>	5 ml x 1 bottle
#2882KA	<b>CLEARFIL SE Protect PRIMER</b>	6 ml x 1 bottle

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