# Kuraray, Then and Now

- **Company Story**  
  Page: 4
- **Kuraray's Integrated System**  
  Page: 6
- **Kuraray's Patented Monomers**  
  Page: 8

## Adhesive Products

- **Kuraray’s Bonds**  
  Page: 10
- **Bonding System**  
  Page: 12
- **Total-Etch vs. Self-Etch**  
  Page: 14
- **CLEARFIL™ SE BOND**  
  Page: 16
- **CLEARFIL™ DC BOND**  
  Page: 18
- **CLEARFIL™ S3 (TRI-S) BOND PLUS**  
  Page: 20
- **CLEARFIL™ SE PROTECT**  
  Page: 22
- **CLEARFIL™ LINER BOND 2V**  
  Page: 24
- **CLEARFIL™ PHOTO BOND**  
  Page: 25
- **CLEARFIL™ NEW BOND**  
  Page: 26
- **CLEARFIL™ CERAMIC PRIMER**  
  Page: 27
- **CLEARFIL™ PORCELAIN BOND ACTIVATOR**  
  Page: 28
- **ALLOY PRIMER**  
  Page: 29

## Cement Products

- **Kuraray's Resin Cements**  
  Page: 30
- **Resin Cements**  
  Page: 32
- **CLEARFIL™ ESTHETIC CEMENT EX**  
  Page: 34
- **CLEARFIL™ ESTHETIC CEMENT EX Color Selection System**  
  Page: 36
- **PANAVIA™ 21**  
  Page: 37
- **PANAVIA™ F 2.0**  
  Page: 38
- **PANAVIA™ SA CEMENT**  
  Page: 40

## Restorative Composite Products

- **Restorative Composites**  
  Page: 42
- **Restorative Composite Product Chart**  
  Page: 44
- **CLEARFIL MAJESTY™ ES-2 Classic**  
  Page: 46
- **CLEARFIL MAJESTY™ ES-2 Premium**  
  Page: 47
- **CLEARFIL MAJESTY™ Flow**  
  Page: 48
- **CLEARFIL MAJESTY™ Posterior**  
  Page: 49
- **CLEARFIL MAJESTY™ Shade Chart**  
  Page: 50
- **CLEARFIL MAJESTY™ Technique Guide**  
  Page: 51
- **CLEARFIL™ AP-X**  
  Page: 53
- **CLEARFIL™ ST Opaquer**  
  Page: 54
- **SURFACE COAT™**  
  Page: 54
Core Build-up Products

Core Build-up Composites 55
CLEARFIL™ PHOTO CORE 57
CLEARFIL™ DC CORE PLUS 59
CLEARFIL™ CORE NEW BOND 60

Other Products & Accessories

TEETHMATE™ F-1 61
CLEARFIL™ REPAIR Multi Purpose 62
K-etchant GEL 63
Caries Detector 63
Accessories 64

Appendix

Note, Warranty & Contact 66
Notes 67
Kuraray Introduced the Technology That Started It All

In 1978, Kuraray gave life to adhesive dentistry with the introduction of CLEARFIL™ BOND SYSTEM F, the world’s first dentin bonding agent. Kuraray concurrently pioneered the first total-etch and first self-etch technique on dentin and enamel—reinventing cosmetic, operative and preventive dentistry as it is practiced today.

Kuraray is Leading the Current Evolution of Dentistry

Historically, the business of dentistry was driven by fixing broken or painful teeth. Patients visited the dentist as a means to an end. But with Kuraray’s introduction of CLEARFIL™ BOND SYSTEM F, adhesive dentistry began to provide patients with the means to a new beginning.

Today, the business of dentistry focuses on sound oral health and patient empowerment. Patients believe that having a great smile helps them look and feel better. No longer satisfied with oral pain relief and traditional amalgam fillings, today’s patient wants it all: a natural looking smile with beautiful and strong teeth.

Kuraray’s dental product portfolio spans 30 years, offering bonding agents, cements, core build-ups and composites to help dentists turn patient desire into reality.

Technologies for Humanity

Kuraray was established in 1926 in Kurashiki, Japan, as an industrial producer of synthetic fibers. Kuraray’s founder, Magosaburo Ohara, was active in social and cultural philanthropy, as well as business. Among his many achievements, he improved labor conditions for his employees; opened the company’s medical clinic to people of the surrounding area; helped to fund an orphanage; and established a museum of art.

Over 80 years later, Kuraray continues to place the greatest value on expanding its business in a way that positively impacts people around the world and the environment. The company’s commitment to social responsibility and focus on philanthropy has resulted in a legacy of technologies to benefit humanity,
Kuraray manufactures the products that make today’s innovations possible. Some of Kuraray’s life-changing technologies include:

- Food packaging materials.
- Base film for polarized film, which is an essential component of LCD screens in large flat-screen televisions, as well as monitors, computers, mobile phones, and more.
- Man-made leather for sporting goods and luxury products.
- Cement reinforcement agents.

Kuraray is committed to continuing its heritage of technologies for humanity. Through constant innovation, research and development, Kuraray is changing cutting-edge technology into real world solutions.
An Integrated Family
Each of the individual products in the CLEARFIL™ Portfolio has been designed for best-in-class performance. In addition, all of the CLEARFIL™ products have been formulated to work as an integrated system for maximum efficacy and efficiency.

The only name you need to remember in Direct Restorations is Kuraray’s CLEARFIL™ brand of technologically advanced products. You know you can trust 30 years of innovation in adhesive dentistry with Kuraray CLEARFIL™.

Not All Technologies Are Equal
From bonding agents to composites, dentists rely on a wide range of dental products from multiple manufacturers to operate their day-to-day business. New equipment and products are added gradually as a reflection of practice growth and developing technology. This often leads to a confused mix of incompatible systems, resulting in unproductive and costly rebuilds.

Wouldn’t it be beneficial to rely on one integrated system of products, specially designed to interact efficiently and seamlessly, every time?
The Power of One

Kuraray develops and produces a broad range of high-quality, innovative dental products designed to achieve flawless results when used alone or as part of a unique, integrated system. Kuraray products continually receive top ratings from leading third-party evaluators. By eliminating the need for trial and error methodologies, Kuraray’s integrated system gives dental professionals confidence in knowing that their products will perform on every patient, every time.

In addition to the technical advantages gained from Kuraray’s integrated system of products, dental professionals will experience the benefits of our comprehensive procedure guides and knowledgeable support staff. Practitioners also gain access to professional, streamlined customer service; one line of products means only one phone call to resolve product inquiries.

Maximum Performance Synergy

Each Kuraray product offers individual, state-of-the-art benefits and, when used in combination, delivers a seamless outcome. No matter which application is used, our bonding agents, cements, core build-ups and composites have been engineered for maximum performance synergy. Dental professionals who use Kuraray technology enjoy the benefits of:

- A system that evolves with the dental industry
- Improved efficiency in inventory control
- Minimal errors and rebuilds
- Reduced costs

Kuraray Dental is committed to ongoing research and development with a focus on product evolution and customer service. As the industry leader in creating technologies for humanity, Kuraray is the integration of dentistry and cutting-edge technology.

CLEARFIL™ Core Build-up Family

CLEARFIL™ Restorative Composite Family
After Kuraray introduced the first adhesive monomer in dental history by inventing the phosphate monomer Phenyl-P in 1976, its molecular structure was improved in 1983 by creating a molecule with greater adhesive capability to the tooth structure and an affinity for metal. The result of this development work was the MDP monomer (10-Methacryloyloxydecyl dihydrogen phosphate), which impressed dentists with its special monomer structure.

This phosphate monomer was extremely effective for enamel, dentin, and metal oxide (Zirconia and Alumina). Consequently, PANAVIA™, with the MDP monomer, was introduced as a high-performance adhesive resin cement for cementation to tooth structure and to metals.

The impressive success of PANAVIA™ encouraged Kuraray to integrate the MDP monomer into other bonding systems, as well as to obtain a high degree of adhesion to tooth substrate from the formation of a chemical bond.

The MDP Monomer has high bond strength to tooth structure, Zirconia, Alumina, and other base metal surfaces due to the characteristic structure as shown in the illustration.

1 Terminal double bond group for polymerization
2 Hydrophobic alkylene group to maintain a delicate balance between hydrophobic and hydrophilic properties
3 Hydrophilic phosphate group for performance of the acid demineralization and chemical bonding to tooth structure
Antibacterial Effects of the MDPB Monomer

The primer in CLEARFIL™ SE PROTECT eliminates bacteria by direct contact, thanks to the integrated functional MDPB monomer. As is the case with so many modern developments, the question, “How can that work?” can be answered relatively easily: The pyridinium group, as a component of the MDPB monomer (12-Methacryloyloxydodecyl pyridinium bromide), is positively charged. The cell structures of bacteria are generally negatively charged, which is why they are automatically attracted by the positively charged contact points of the MDPB monomer. They then lose their electrical balance, destroying the cell membrane of the bacteria. The bacteria are killed by this process, which is also known as bacteriolysis.

Safety of MDPB

The MDPB monomer is immobilized and broken down into its active components by the polymerization of the bonding layer. There it remains latently active without affecting the patient’s own cells. The strength of the adhesive is not negatively affected by this process, patented by Kuraray, as is the case when chlorhexidine or other such cavity hygiene products are used. Moreover, it ensures that cytotoxic effects on the patient’s own body cells, such as odontoblasts, are excluded long-term. These test results have been confirmed by the biological safety test ISO 10993-1.

Long-Term Protection from Secondary Caries

Immediately after the polymerization of the composite (such as CLEARFIL™ MAJESTY), CLEARFIL™ SE PROTECT has already achieved an optimal sealing of the margin thanks to its high degree of initial adhesion. The antibacterial cleansing effect occurs during the priming stage. This process, in conjunction with durable adhesion, possibly contributes to long-term protection.
The Proven Market Leader in Bonding Technology
The Kuraray line of CLEARFIL™ adhesive products is second to none in the industry. Many companies rely on slick marketing campaigns and manufactured hype to generate brand recognition, but as the #1 innovator in self-etch adhesives, proof of Kuraray’s product superiority is in the numbers.

CLEARFIL™ SE BOND, the first and last name dentists need to know in adhesive bonds, continually receives top ratings by industry experts. Ranked the second most important product among the top 100 essentials for dental practitioners, the leading third party evaluator estimates that CLEARFIL™ SE BOND is preferred by 65% of the dental industry. In a market crowded with inferior products, dental professionals can confidently rely on the industry leader in bonds and adhesives.

The Bonds that Changed Dentistry
In 1978, Kuraray introduced the world’s first dentin bonding agent, CLEARFIL™ BOND SYSTEM F, while concurrently developing the total-etch technique. Today, many dentists choose CLEARFIL™ bonds because of their strength, ease of use and dependability, secure in the knowledge that Kuraray’s technology is built upon a tradition of scientific research and development that spans over a quarter century.

CLEARFIL™ BOND Family
A Bond for All Reasons

The popularity of CLEARFIL™’s SE BOND, DC BOND, S3 BOND PLUS, SE PROTECT, PHOTO BOND, NEW BOND, LINER BOND 2V, and other bond products for any type of restoration is due to their strength, durability, ease of use and reported patient satisfaction. Kuraray technology has radically reduced post-operative sensitivity and improved delivery methods, making CLEARFIL™ bonds easier than ever to apply. Every bonding agent has been specially formulated to solve specific procedural and case needs, and Kuraray’s proprietary MDP monomer is the technological breakthrough behind this award winning line of products.

Continually named “Best in Category” by leading evaluators, Kuraray’s dental adhesives are specially formulated to work on their own or in conjunction with Kuraray composites, cements and core build-up materials to achieve long-lasting results. Advantages of using Kuraray Dental’s CLEARFIL™ bonds include:

- Reduced procedural time
- High bond strength to tooth enamel and dentin
- Superior sealing and protection
- Patient satisfaction due to reduced post-operative sensitivity
- An easy-to-use product from an integrated system
### Overview

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<td>Light / Dual*</td>
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**Total-etch**

| CLEARFIL™ PHOTO BOND                                                   | 25          | 2-step system (including etching) | Dual              |
| CLEARFIL™ NEW BOND                                                     | 26          | 2-step system (including etching) | Self              |

* Dual-cure is achieved when Bond A is mixed with Bond B.

Additional information is available at [www.kuraraydental.com](http://www.kuraraydental.com)
<table>
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The Adhesive Technology – Cornerstone of Modern, Minimally Invasive Dentistry

In 1978, Professor T. Fusayama from the Tokyo Medical and Dental University was confronted with a technical problem. He had the idea of permanently filling cavities with resin materials as an esthetic alternative to amalgam. But in contrast to hydrophilic tooth hard structure, the composites displayed hydrophobic properties and were not capable of establishing a close bond. To get around this problem, he developed a new technique for the conditioning of the dentin which would provide a surface suitable for the use of an adhesive. Going against the philosophy of the times, he etched both enamel and dentin with phosphoric acid (H₃PO₄). This preparation of the dentin removed the smear layer which appeared after the preparation, opened the dentinal tubules, and created the conditions for use of the following primer-adhesive system.

In cooperation with Kuraray, Inc. – at that time an industrial manufacturer of innovative special resin materials – the first total-etch bond, including an adhesive phosphate monomer for enamel and dentin, CLEARFIL™ BOND SYSTEM F, was developed.

While this system rapidly gained acceptance in Japan, dentin phosphoric acid etching was the subject of controversial discussions at the international level for a long time. It was not until the middle of the 1980s that it gained worldwide acceptance and has since been one of the standard procedures for multi-step adhesives.

The advantages of this technique are self-evident and have been confirmed over the course of time by numerous scientific studies. Besides the removal of the smear layer, there is a demineralization of the intertubular and peritubular dentin. Hydroxyapatite crystals from the collagen network are released and individual fibers are exposed. They are then coated by the hydrophilic monomers of the adhesive and permanently anchor themselves in the exposed network during polymerization.

Increased technique sensitivity of the total-etch system led to development of the self-etch technique. Although these systems produce good results when used correctly, total-etch multi-step adhesives were regarded as highly technique-sensitive in Japan due to the precision required for the work steps and times: excessive etching removed more minerals from the dentin than desired and exposed the collagen fibers to a depth which was greater than the following adhesive could penetrate. Excessive drying caused the exposed collagen fiber network to collapse and blocked the access of the adhesive to the dentin areas below. This led to lower adhesive strength and simultaneously sensitivity and biting pain.

The selection of the volatile solvent in the bond systems also influenced the moisture of the dentin surface required for ideal results. Since alcohol is lighter than water, alcohol-based systems require an extremely dry surface, which means that there is a high risk of overdrying. Acetone-based adhesives, on the other hand, work best on a slightly moist surface since acetone is drawn into the tubules through this condition. But since the definition of “slightly moist” is difficult to realize during actual work, the bond results are worsened if the surface is either too dry or too moist.
Direct Desensitization and Conditioning With Water-Based Self-etch Adhesives of The CLEARFIL™ Series

CLEARFIL™ LINER BOND II was introduced by Kuraray at the beginning of the 1990s as the first self-etch adhesive in the world. The objective was to eliminate the technique sensitivities caused by the total-etch technique and to develop a system which required fewer work steps, achieved permanently reproducible results, and at the same time could prevent sensitivity and biting pain for the patient.

A water-based, self-etch primer was developed to avoid problems related to a separate etching technique or a defined surface moisture. This primer conditioned enamel and dentin in much the same way as phosphoric acid, but was not as aggressive and could be buffered in its effect by released calcium. The slightly acidic pH value was thus reduced further and dropped to a neutral level, which allowed the primer to stay in the cavity. This made it possible to avoid complicated work steps such as rinsing, drying, changing cotton rolls, as well as the risks of excessive etching and overdrying. The following adhesive without any volatile solvents could now penetrate all of the dentin layers, closing the dentinal tubules and contributing, after the polymerization, to prevention of post-operative sensitivity.

The development of the MDP adhesive monomer has improved further the chemical bond properties of the self-etch Kuraray adhesive. The TEM images show that the collagen fibers in the thin hybrid layers have not completely lost the hydroxyapatite, in contrast to the total-etch technique. The remaining hydroxyapatite can directly bond chemically with phosphate groups of Kuraray’s own MDP monomer. (TEM Image 1 at right)

A similar effect can also be observed in the enamel. Although the enamel structure is only slightly affected, no fissure formation is determined between the adhesive, composite, and enamel. Although the adhesive strength without prior enamel etching was questioned when this technique was first introduced, various studies worldwide have since proven the efficacy of the MDP-based self-etch systems [average 35 MPa µTBS microtensile bond strength (TEM Image 2 below) Inoue, Van Meerbeek]

Data from a clinical study of n=94 restorations placed with CLEARFIL™ SE BOND of Class V show an adhesive bond which is 100% intact after 36 months (Catholic University of Leuven, Belgium).

Due to the company’s lead in research in the field of adhesive and resin technology, Kuraray Dental products achieve outstanding rankings in clinical in-vivo and in-vitro examinations. “REALITY,” an independent American test institute, certified that CLEARFIL™ SE BOND caused absolutely no post-operative complaints (Issue 118, February 2000), while another institute praised the all-in-one adhesive CLEARFIL™ S3 BOND as the best in its class from a total of four all-in-one systems which were tested.

1. TEM cross-section image: Dentin CLEARFIL™ SE BOND (Inoue, Van Meerbeek)
2. TEM cross-section image: Enamel CLEARFIL™ SE BOND (Inoue, Van Meerbeek)
CLEARFIL™ SE BOND

**Facts**
- Improved marginal sealing from extremely high bond strength
- Water-based, mild self-etch primer
- Tried and proven 2-step self-etch bond system
- Simple, rapid, light-cure bond
- Minimal technique sensitivity
- Virtually no post-operative sensitivity
- Known as the “Gold Standard” of the self-etch adhesive systems

**Indications**
- Direct filling restorations using light-cure composite or compomer
- Cavity sealing as a pre-treatment for indirect restorations
- Treatment of hypersensitive and/or exposed root surfaces
- Intra-oral repairs of fractured facing crowns made of porcelain, hybrid ceramics or composite resin using light-cure composite
- Surface treatment of prosthetic appliances made of porcelain, hybrid ceramic, and cured composite resin

**Description**
CLEARFIL™ SE BOND is a light-cure bond system consisting of a self-etch primer and a bonding agent. The water-based primer enables the simultaneous treatment of enamel and dentin in one step. The patented MDP monomer helps to eliminate post-operative sensitivity. Direct skin contact with the contents of the bottles is avoided by the practical outer case. The necessity to open the individual bottles has been eliminated, avoiding the risks of skin allergies.

**Product Codes**
- #1970KA CLEARFIL™ SE BOND Kit
  - Primer (6 ml), Bond (5 ml), 2x50 Disposable brush tips, 2 Brush tip handles (white & black), 1 Mixing dish, 1 Light-blocking plate, 1 Outer case
- #1972KA CLEARFIL™ SE BOND Value Kit
  - 3 Primers (6 ml), 3 Bonds (5 ml), 6x50 Disposable brush tips, 2 Brush tip handles (white & black), 1 Mixing dish, 1 Light-blocking plate, 1 Outer case
- Refills
  - #1981KA CLEARFIL™ SE BOND Bond (5 ml)
  - #1982KA CLEARFIL™ SE BOND Primer (6 ml)
  - #968 Disposable brush tips, pack of 50
  - #902 Mixing dish
  - #965 Brush tip handle (white)
  - #966 Brush tip handle (black)

The outer case is used for the simple and precise application of the liquids.

Additional information is available at www.kuraraydental.com
Integrated System Recommendations

Pre-treatment of the ceramic surface

When a restoration made of ceramic, hybrid ceramic or composite resin is used, it should first be silanated to optimize the adhesion properties. To create a silane, place one drop each of CLEARFIL™ SE BOND Primer and CLEARFIL™ PORCELAIN BOND ACTIVATOR together into a well of the mixing dish and mix them. Apply to the adherent surface of the restoration for 5 seconds and dry with a mild air stream.

# 061KA
CLEARFIL™ PORCELAIN BOND ACTIVATOR (4 ml) (Mixed with CLEARFIL™ SE BOND Primer)

# 2550KA
CLEARFIL™ CERAMIC PRIMER (4 ml)
You can also use the new CLEARFIL™ CERAMIC PRIMER without mixing (please see page 27)

Esthetic Results

We recommend CLEARFIL MAJESTY™ composites, especially for esthetic restorations.

CLEARFIL MAJESTY™ ES-2 Series
CLEARFIL MAJESTY™ Posterior
CLEARFIL MAJESTY™ Flow

Procedure Guide: CLEARFIL™ SE BOND

Primer
• Apply primer & leave for 20 seconds
• Do not rinse
• Dry with mild air flow

Bond
• Apply bond & distribute evenly with mild air flow
• Light-cure for 10 seconds

Restorative
• Place composite or compomer restorative & light-cure
CLEARFIL™ DC BOND

Description
CLEARFIL™ DC BOND is a versatile, self-etch, single-step, dual-cure dental adhesive that provides reduced post-operative sensitivity and durable bond strength for indirect and direct restorations. It is also easy and fast to use.

CLEARFIL™ DC BOND dramatically simplifies bonding procedures, while also providing a long-term, durable bond. The improved features are the result of the new and proprietary homogenous combining of a hydrophilic and hydrophobic technology and its improved self-cure activity. CLEARFIL™ DC BOND has minimal technique sensitivity, and is indicated extensively for light-cure, dual-cure, and self-cure composites or for desensitizing dentin and bonding dual-cure and self-cure composite cements (CLEARFIL™ ESTHETIC CEMENT) in cases of indirect restorations.

CLEARFIL™ DC BOND’s improved self-cure activity between the oxygen-inhibited layer and dual-cure and self-cure resins assures reliable bonding for core-build ups and indirect restorations. Its thin film thickness is favorable for indirect restorations using composite resin cements.

Product Codes
#2510KA CLEARFIL™ DC BOND Kit
Bond Liquid A (4 ml), Bond Liquid B (4 ml), 1 Brush tip handle (white), 1 Mixing dish, 1 Light-blocking plate, 50 Disposable brush tips

Refills
#2512KA CLEARFIL™ DC BOND, Liquid A (4 ml)
#2513KA CLEARFIL™ DC BOND, Liquid B (4 ml)
#902 Mixing dish
#965 Brush tip handle (white)

Facts
• Strong enamel bond strength (equal to or stronger than total-etch bonding agents)
• Virtually no post-operative sensitivity
• Bonds to all light-, self- and dual-cure restorative composites, core build-up composites and resin cements for all direct and indirect restorations
• Easy one application procedure
• Low film thickness (5 - 10 microns)
• Dentin sealing adhesive for indirect restorations
• No bad taste from phosphoric acid

Indications
• Core build-ups using light- dual- or self-cure composite resin
• Direct restorations using light-cure composite resin
• Direct restorations using self-cure composite resin
• Cavity sealing as a pre-treatment for indirect restorations
• Treatment of exposed root surfaces
• Intra-oral repairs of fractured crowns/bridges made of porcelain, ceramics, hybrid ceramics, or composite resin

Additional information is available at www.kuraraydental.com
Procedure Guide: CLEARFIL™ DC BOND

Procedure of direct restorations using light-cure composite

1. Mix equal amounts of liquid A&B
2. Apply mixed BOND & Dry
3. Dry with high pressure air flow
4. Light cure
5. Apply light-cure composite resin
CLEARFIL™ S3 BOND PLUS (CLEARFIL™ TRI-S BOND PLUS)

**Description**

CLEARFIL™ S3 BOND PLUS is a light-cure, self-etch, all-in-one adhesive system which makes it possible to treat enamel and dentin simultaneously with only one liquid component and one application. It provides significantly reduced post-operative sensitivity and high bond strength. CLEARFIL™ S3 BOND PLUS reaches maximum adhesive values in a one-bottle, one-step application process, without any hidden steps. Total working time is approximately 25 seconds.

Dentists have been using it successfully all over the world. CLEARFIL™ S3 BOND PLUS has been rated by two independent test institutes as the best all-in-one adhesive.

CLEARFIL™ S3 BOND PLUS when utilized with our complementary component CLEARFIL™ DC CORE PLUS can achieve dual-cure core build-up/post cementation without an additional bottle.

**Facts**

- Speed. Strength. Simplicity.
- Self-etch, all-in-one adhesive with high bond strength
- No technique sensitivity: no mixing, no shaking, no multi-application
- Forms a thin yet strong, durable bond layer with nano-microfiller
- Water/ethanol-based composition
- Virtually no post-operative sensitivity
- Unique Molecular Dispersion Technology prevents phase separation

**Indications**

- Direct restorations using light-cure composite resin
- Cavity sealing as a pre-treatment for indirect restorations
- Treatment of exposed root surfaces
- Intra-oral repairs of fractured crowns/bridges made of porcelain or composite resin
- Surface treatment of prosthetic appliances made of porcelain or composite resin
- Core build-ups using light- or dual-cure composite resin
- Core build-ups and post cementation with CLEARFIL™ DC CORE PLUS.

**Product Codes**

- #2890KA CLEARFIL™ S3 BOND PLUS Kit
  1 Bottle (4 ml), 50 Disposable brush tips, 50 Applicator brushes (fine), 1 Mixing dish, 1 Light-blocking plate
- #2893KA CLEARFIL™ S3 BOND PLUS Value Pack
  3 Bottles (4 ml each)
- #2895KA CLEARFIL™ S3 BOND PLUS Single Dose
  (50 tips x 0.1 ml)
- #2896KA CLEARFIL™ S3 BOND PLUS Single Dose Value Pack
  (100 tips x 0.1 ml)

**Refills**

- #1022KA Dispensing Dish + Light Blocking Plate
- #1024KA Applicator Brush (Fine)
Integrated System Recommendations

Esthetic results
We recommend CLEARFIL MAJESTY™ composites, especially for esthetic restorations.

CLEARFIL MAJESTY™ ES-2 Series
CLEARFIL MAJESTY™ Posterior
CLEARFIL MAJESTY™ Flow

CLEARFIL™ S3 BOND PLUS Kit

Quality and Technology: Proven by Universities

Bond Strength to Human Dentin with Simulated Pulpal Pressure

CLEARFIL S3 BOND PLUS
i BOND Self Etch*
Prime & Bond NT*

TEM image of the bond-dentin interface in the presence of simulated intrapulpal pressure.

Bonding steps under simulated pulp pressure are more accurate to simulate actual clinical cases, when compared without the pressure (normal bonding tests). As a result, CLEARFIL S3 BOND PLUS showed a stable/homogeneous bonding layer and interface. In addition, CLEARFIL S3 BOND PLUS was most insensitive for pulp pressure, when compared to Prime & Bond NT* and i BOND Self Etch*. The superior sealing property, due to the improved curing technology, makes it possible to resist fluid movement.

All data courtesy of Dr. Pashley and Dr. Tay, Georgia Health Science University.

Procedure Guide:

1. Apply bond for 10 sec.
2. Dry with high pressure air for 15 sec.*
3. Light-cure for 10 sec. (Curing time by Halogen/LED)

Micro-tensile bond strength to dentin with / without pulpal pressure.

* Not a trademark of Kuraray Co., Ltd
CLEARFIL™ SE Protect

**Facts**
- First and still the only self-etch adhesive in the world that contains an antibacterial monomer “MDPB”
- Tried and proven 2-step self-etch bond system
- Virtually no post-operative sensitivity
- Fast and simple to use, no rinsing
- High bond strength to enamel and dentin
- Fluoride releasing properties
- Minimal dentin decalcification; maximum marginal leakage protection

**Indications**
- Direct restorations using light-cure composite resin or compomer
- Cavity sealing as a pre-treatment for indirect restorations
- Treatment of hypersensitive and/or exposed root surfaces
- Intra-oral repairs of fractured crowns/bridges made of porcelain, hybrid ceramics or composite resin using light-cure composite resin
- Surface treatment of prosthetic appliances made of porcelain, hybrid ceramics and cured composite resin
- Core build-ups using light- or dual-cure composite resin
- Cavity sealing under amalgam restorations

**Description**
CLEARFIL™ SE Protect contains the same proprietary self-etch, light-cure technology as CLEARFIL™ SE BOND, plus two additional proprietary technologies: Long-term Fluoride release and the MDPB monomer, which has an antibacterial cavity cleansing effect. The antibacterial effect of the MDPB monomer has been statistically significant in single and comparison tests. Examinations by the Pulp Biology Group (University of Birmingham) shows a clear reduction of cultivated bacteria from MDPB in cavity preparations in teeth with natural caries. No harmful effects on the vitality of the odontoblasts and fibroblasts were determined. Three more studies evaluated possible biological effects. There are indications that the tertiary dentin formation initiated by CLEARFIL™ SE Protect is comparable to that observed following dentin treatment with calcium hydroxide preparations.

**Product Code**
- #2870KA CLEARFIL™ SE Protect Kit
  - Primer (6 ml), Bond (5 ml), 2 x 50 Disposable brush tips,
  - 2 Brush tip handles (white & black), 1 Mixing dish, 1 Light-blocking plate, 1 Outer dispensing case
- #2872KA CLEARFIL™ SE Protect Value Kit
  - 3 Primers (6 ml), 3 Bonds (5 ml), 6 x 50 Disposable brush tips,
  - 2 Brush tip handles (white & black), 1 Mixing dish, 1 Light-blocking plate, 1 Outer dispensing case

**Refills**
- #2881KA CLEARFIL™ SE Protect Bond: 5 ml
- #2882KA CLEARFIL™ SE Protect Primer: 6 ml
- #968 Disposable brush tips, pack of 50
- #965 Brush tip handle (white)
- #966 Brush tip handle (black)
- #902 1 Mixing dish

Additional information is available at www.kuraraydental.com
Integrated System Recommendations

**Esthetic results**

We recommend CLEARFIL MAJESTY™ composites, especially for esthetic restorations.

- CLEARFIL MAJESTY™ ES-2 Series
- CLEARFIL MAJESTY™ Posterior
- CLEARFIL MAJESTY™ Flow

The primer in CLEARFIL™ SE Protect eliminates bacteria by direct contact, thanks to the integrated MDPB monomer. It works because the pyridinium group, as a component of the MDPB monomer (12-Methacryloyloxydodecyl pyridinium bromide), is positively charged. The cell structures of bacteria are generally negatively charged, which is why they are automatically attracted by the positively charged contact points of the MDPB monomer. They then lose their electrical balance, destroying the cell membrane of the bacteria. The bacteria are killed by this process, which is also known as bacteriolysis.

Immediately after the polymerization of the composite (such as CLEARFIL MAJESTY™), CLEARFIL™ SE Protect has already achieved an optimal sealing at the margin because of its high degree of initial adhesion.

![Diagram](image_url)

**Bacteria: negatively charged cell structure**

**Positively charged attraction point of the MDPB monomer**

**The cell structure of the bacteria is destroyed by the loss of the electrical balance.**
CLEARFIL™ LINER BOND 2V

**Facts**
- Tried and proven 2-step self-etch bond system
- Suitable for light-cure, self-cure and dual-cure composites
- High adhesive properties to enamel and dentin
- Water-based, mild self-etch
- Virtually no post-operative sensitivity

**Description**
CLEARFIL™ LINER BOND 2V enables the processing of all light-cure and self-cure composites, as well as amalgams. It can therefore be described as a “universal bond.”

The bond system comprises a self-etch, two-component primer and a two-component bonding agent. The mild, self-etch BOND SYSTEM forms a high quality hybrid layer; yet it achieves optimal adhesion and, at the same time, prevents post-operative sensitivity.

In conventional total-etch bond systems, the etching procedure collapses the exposed collagen fiber network, resulting in decreased bond strength. By contrast, CLEARFIL™ LINER BOND 2V is bio-compatible with respect to the tooth tissue. Thanks to the mild etching and decalcification effect of the primer, as well as its natural water content, the collagen fiber network retains its natural form and volume. These properties of CLEARFIL™ LINER BOND 2V make successful adhesion of both the tooth structure and the restoration possible.

**Indications**
- Direct filling restorations using light-cure or self-cure composite
- Bonded amalgam restorations
- Treatment of hypersensitive and/or exposed root surfaces
- Cavity sealing as a pre-treatment for indirect restorations
- Intra-oral repairs of fractured porcelain facing crowns using light-cure composite
- Cementing inlays and onlays made of porcelain (or composite) using composite resin cement

**Product Code**
- #1921KA CLEARFIL™ LINER BOND 2V Kit
  Primer: Liquid A (6 ml), Liquid B (6 ml); Bond: Liquid A (5 ml), Liquid B (3 ml); 2x50 Disposable brush tips, 1 Brush tip handle (white), 1 Mixing dish, 1 Light-blocking plate, 1 Box sponge pledgets, 1 System tray

**Refills**
- #1943KA CLEARFIL™ LINER BOND 2V Primer Liquid A (6 ml)
- #1944KA CLEARFIL™ LINER BOND 2V Primer Liquid B (6 ml)
- #1930KA CLEARFIL™ LINER BOND 2V Bond Liquid A (5 ml)
- #1931KA CLEARFIL™ LINER BOND 2V Bond Liquid B (3 ml)
- #968 Disposable brush tips, pack of 50
- #902 Mixing dish
- #965 Brush tip handle (white)
- #941 Box sponge pledgets

Additional information is available at www.kuraraydental.com
CLEARFIL™ PHOTO BOND

Facts
- High bond strength to enamel and dentin
- Both light-cure and self-cure
- Simple and fast procedure

Indications
- Enamel and dentin bonding agent for direct composite restorations

Description
CLEARFIL™ PHOTO BOND is a dual-cure adhesive for enamel and dentin, based on the total-etch technique. CLEARFIL™ PHOTO BOND has been developed for use with light-cure and dual-cure restorative materials. In addition, direct adhesion to ceramic can be achieved by mixing with CLEARFIL™ PORCELAIN BOND ACTIVATOR.

Product Code
#070KA CLEARFIL™ PHOTO BOND Kit
Catalyst (6 ml), Universal (6 ml), K-etchant GEL (6 ml), 1 Mixing dish, 1 Small brush (bent), 1 Box sponge pledgets

Refills
#075KA CLEARFIL™ PHOTO BOND Catalyst (6 ml), Universal (6 ml)
#073KA CLEARFIL™ PHOTO BOND Catalyst (6 ml)
#074KA CLEARFIL™ PHOTO BOND Universal (6 ml)
#013KA K-etchant GEL (6 ml)
#902 Mixing dish
#908 Small brush (bent)
#941 Box sponge pledgets

Integrated System Recommendations

#013KA K-etchant GEL: 6 ml
K-etchant GEL is especially well-suited for the etching of teeth, cleaning of the adherent surface of restorations, or activation of the surface of silica-based ceramics. The thixotrophic property provides simple processing of 40% phosphoric acid.

#066KA CLEARFIL™ SA PRIMER: 6 ml
CLEARFIL™ SA Primer is an adhesion primer containing a salicylic acid derivative monomer to promote the affinity to collagen fibers. CLEARFIL™ SA Primer enhances the bond strength of CLEARFIL™ PHOTO BOND.

#061KA CLEARFIL™ PORCELAIN BOND ACTIVATOR: 4 ml
CLEARFIL™ PORCELAIN BOND ACTIVATOR is a silane coupling agent which guarantees high bond strength with CLEARFIL™ PHOTO BOND and eliminates the need for Hydrofluoric Acid (HF).
CLEARFIL™ NEW BOND

**Facts**
- High bond strength to enamel and dentin
- Self-cure
- Simple and fast procedure

**Indications**
- Enamel and dentin bonding agent for direct composite restorations

**Description**
CLEARFIL™ NEW BOND is a self-cure adhesive for enamel and dentin, based on the total-etch technique. CLEARFIL™ NEW BOND has been developed for use with self-cure restorative composite materials. In addition, direct adhesion to ceramic can be achieved by mixing with CLEARFIL™ PORCELAIN BOND ACTIVATOR.

**Product Codes**
- **Refills**
  - #053KA CLEARFIL™ NEW BOND Catalyst: 6 ml
  - #054KA CLEARFIL™ NEW BOND Universal: 6 ml

**Integrated System Recommendations**
- #013KA K-etchant GEL: 6 ml
- #061KA CLEARFIL™ PORCELAIN BOND ACTIVATOR: 4 ml

K-etchant GEL is especially well-suited for the etching of teeth, cleaning of the adherent surface of restorations, or activation of the surface of silica-based ceramics. The thixotrophic property provides simple processing of this 40% phosphoric acid.

CLEARFIL™ PORCELAIN BOND ACTIVATOR is a silane coupling agent which guarantees high bond strength with CLEARFIL™ NEW BOND and eliminates the need for Hydrofluoric Acid (HF).

Additional information is available at www.kuraraydental.com
CLEARFIL™ CERAMIC PRIMER

**Description**
CLEARFIL™ CERAMIC PRIMER secures a unique bond with all materials for esthetic restorations. In addition to the tried and proven adhesive monomer MDP for bonding to metal oxide, it contains the silane coupling agent MPS (γ-Methacryloyloxypropyl trimethoxysilane), which guarantees strong adhesion to all materials for esthetic restorations. CLEARFIL™ CERAMIC PRIMER maintains excellent adhesion property in long-term storage by the optimum combination of the ingredients.

**Facts**
- Does not require toxic Hydrofluoric Acid (HF)
- Use with any porcelain, composite, hybrid ceramics, and metal oxide ceramics (Alumina and Zirconia)
- Fast and easy application with one component (No mixing needed)
- Contains the dependable adhesive monomer MDP, the same monomer used in PANAVIA™ and CLEARFIL™ SE BOND
- Bonds directly to resin cement (No bonding agent needed)
- Bonds directly to restorative composites for intra-oral repairs
- Long, stable shelf-life (2 years from manufacturing)

**Indications**
- Surface treatment of porcelain, ceramics, hybrid ceramics or composite resin
- Intra-oral repairs of fractured crowns/bridges made of porcelain, ceramics, hybrid ceramics or composite resin

**Product Code**
#2550KA CLEARFIL™ CERAMIC PRIMER: 4 ml

**Integrated System Recommendations**
- #2901KA CLEARFIL™ ESTHETIC CEMENT EX Kit
- #1973KA CLEARFIL™ REPAIR Multi Purpose
CLEARFIL™ PORCELAIN BOND ACTIVATOR

Facts
- Pre-treatment for restorations made of porcelain or composite resin
- Contains the silane coupling agent MPS for strong, permanent adhesion to all materials for esthetic restorations
- Fresh mixing with CLEARFIL™ Bonds guarantees high bond strength
- Suitable for intra-oral and extra-oral use

Indications
- Repair of porcelain or porcelain fused-to-metal crowns and bridges
- Restoration of gingival porcelain areas where bonding to porcelain is necessary
- Increased retention of porcelain inlays, onlays, crowns and veneers
- Increased retention of composite inlays and onlays

Description
CLEARFIL™ PORCELAIN BOND ACTIVATOR is a silane coupling agent, when used in combination with CLEARFIL™ S3 BOND PLUS, CLEARFIL™ PHOTO BOND or CLEARFIL™ NEW BOND, the primers only of the following bond systems: CLEARFIL™ SE BOND, CLEARFIL™ SE PROTECT, or CLEARFIL™ LINER BOND 2V, assures high bond strength. The fresh mixture can be applied directly onto the surface of restorations made of porcelain, hybrid ceramic or composite resin to create the bond. The adhesion system is convenient, uncomplicated, and time-saving.

Product Code
#061KA CLEARFIL™ PORCELAIN BOND ACTIVATOR: 4 ml

Integrated System Recommendations
#2890KA CLEARFIL™ S3 BOND PLUS Set

Procedure Guides
Activate silane by mixing CLEARFIL™ SE BOND Primer and CLEARFIL™ PORCELAIN BOND ACTIVATOR in a ratio of 1:1 in a mixing well.

Apply silane to the restoration and allow to react for 5 sec. Then apply mild airflow.

* This product needs to be mixed with a CLEARFIL™ Bonding Agent before using.

Additional information is available at www.kuraraydental.com
ALLOY PRIMER

**Description**
ALLOY PRIMER is a pre-treatment agent for conditioning metal and is used to secure the adhesive capability of resins to gold, titanium, and other dental alloys. Tin-plating is not required since the ALLOY PRIMER creates excellent bond strength to the metal surface.

**Product Code**
#064KA ALLOY PRIMER: 5 ml

**Integrated System Recommendations**
- #2550KA CLEARFIL™ CERAMIC PRIMER: 4 ml
- #1973KA CLEARFIL™ REPAIR Multi Purpose

**Facts**
- Easy intra- and extra-oral use
- Increases bond strength to all metal surfaces
- Replaces the procedure of tin-plating

**Indications**
- Adhesion support of metal inlays, onlays, crowns and bridges
- Adhesion of metal cast posts
- Repair of fractured resin-based facing crowns and porcelain-fused metal crowns and bridges
- Repair of dentures

**Procedure Guide:**
- Sandblast the inner surface of the crown
- Apply ALLOY PRIMER to the inner surface of the crown
- Apply ALLOY PRIMER to the metal core
- Apply ALLOY PRIMER to the metal abutment and tooth structure
- Cement using PANAVIA® paste

**ALLOY PRIMER**
One Size Does Not Fit All

In a market crowded with wide ranging cementation materials of varied effectiveness, finding the right cement for each procedure has become a challenge for many dentists. Often practices operate utilizing multiple cements to fulfill all of their restoration needs. In fact, a recent study indicates that over half of practicing dentists feel overwhelmed by the number of available products, agreeing with the statement, “There are too many resin cements available; it’s hard to choose the right one”.

What if one product line could eliminate the guesswork and provide consistent, long-lasting results? Kuraray’s full performance line of resin cements is specially engineered to meet every restoration need with one of four easy-to-use formulas: CLEARFIL™ ESTHETIC CEMENT EX, PANAVIA™ F 2.0, PANAVIA™ 21 and PANAVIA™ SA CEMENT.

The Future of Cementation is Kuraray

Kuraray’s extensive research with hundreds of dentists has told us exactly what dental professionals want: adhesive strength, minimal post-operative sensitivity, accurate color matching and easy handling. Our continued innovation has resulted in not one, but four superior products, and each one delivers those qualities deemed most important by dental professionals.

CLEARFIL™ ESTHETIC CEMENT EX, PANAVIA™ F 2.0, PANAVIA™ 21 and PANAVIA™ SA CEMENT are indicated for almost any restoration, and all four proprietary formulas provide adhesion to dentin, metal oxide and silica-based ceramics, and precious and non-precious metals. Simple delivery methods and a unique shade matching system ensure that every application is durable, accurate and nearly effortless, with minimal sensitivity.
The Technology that Dentists Need, the Look that Patients Want

All Kuraray Dental products are manufactured to meet or exceed exacting scientific standards. Advanced mechanical properties, a high filler load and consistently reliable sealing make CLEARFIL™ ESTHETIC CEMENT EX, PANAVIA™ F 2.0, PANAVIA™ 21 and PANAVIA™ SA CEMENT highly effective and easily workable cements for every restoration need. All four Kuraray Dental cements are formulated to work within our integrated system of bonds, composites and core build-ups. Dentists who use Kuraray resin cements also enjoy:

• Superior strength and longevity
• Easy-to-match shades and color stability
• Advanced delivery methods and ease of use
• Little or no post-operative sensitivity

Clinicians know that they have made the right choice for cosmetic and adhesive performance with CLEARFIL™ ESTHETIC CEMENT EX, PANAVIA™ F 2.0, PANAVIA™ 21 and PANAVIA™ SA CEMENT.
### Overview

<table>
<thead>
<tr>
<th>Indications</th>
<th>Crowns &amp; bridges</th>
<th>Inlays/onlays</th>
<th>Veneers</th>
<th>Maryland bridges</th>
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1) Must be used with CLEARFIL™ CERAMIC PRIMER or CLEARFIL™ PORCELAIN BOND ACTIVATOR  
2) Must be used with ALLOY PRIMER

Additional information is available at www.kuraraydental.com
<table>
<thead>
<tr>
<th>Posts</th>
<th>Metal oxide ceramics</th>
<th>Silica-based ceramics</th>
<th>Precious metal</th>
<th>Non-precious metal</th>
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<th>Fluoride release</th>
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</table>

Indications

Curing systems

1) dual-cure
2) self-cure
CLEARFIL™ ESTHETIC CEMENT EX

Facts
• Virtually no post-operative sensitivity / dentin sealing with a self-etch bond
• Easy to use with automix dispensing directly into restorations
• Try-in paste accurately matches the cement color and film thickness
• Bond strength higher than most other cements, including the industry-standard PANAVIA™
• Minimum shade selection for very wide applications
• Superior physical properties, including strong wear resistance
• Most cementation needs combined in one kit

Indications
• Cementation of crowns, bridges, inlays and onlays made of porcelain, ceramic, hybrid ceramic, composite resin or metal
• Cementation of veneers
• Cementation of adhesion bridges
• Cementation of metal cores, resin cores, metal posts or glass-fiber posts

Description
A significant increase in ceramic (including zirconium oxide and aluminum oxide) restorations has been noted in recent years, as has the steady rise of metal-free restorations. This trend will continue to gather force. CLEARFIL™ ESTHETIC CEMENT EX has been developed to meet this need. CLEARFIL™ ESTHETIC CEMENT EX is available in 4 color shades which can be used with CLEARFIL™ CERAMIC PRIMER to offer strong adhesion to esthetic materials. The light-cure generates good marginal sealing of the restoration and high wear resistance of the cement surface. The Try-in pastes allow you to test the color you wish to use for the restoration, and they can be easily and quickly washed away. The practical automix syringe mixes the two pastes of the cement. The cement can be applied directly into the restoration without creating air bubbles. For intra-oral repair using CLEARFIL™ CERAMIC PRIMER, see page 27. For direct restorations using CLEARFIL™ DC BOND, see page 18.

Automix Syringe
The CLEARFIL™ ESTHETIC CEMENT EX kit contains a compact Automix Syringe which eliminates the need for mixing. The Try-in paste accurately conforms to the color and film thickness of the cement. The cement is easy to handle.
Product Codes

Standard Kit
CLEARFIL™ ESTHETIC CEMENT EX
(kit is available in 3 shades)
#2901KA Universal Kit
#2903KA Clear Kit
#2904KA Opaque White Kit
1 CLEARFIL ESTHETIC CEMENT EX Paste A 4.6 g (2.3 ml), Paste B 4.4 g (2.3 ml), 1 Try-in paste (1.8 ml), 1 CLEARFIL DC BOND Liquid A (4 ml), 1 Liquid B (4 ml), 1 CLEARFIL CERAMIC PRIMER (4 ml), 1 K-ETCHANT GEL (6 ml), 1 ALLOY PRIMER (5 ml), 20 Mixing tips, 1 Light-blocking plate, 1 Mixing dish, 50 Disposable brush tips (white), 50 Disposable brush tips (black), 1 Brush tip handle (white), 1 Brush tip handle (black)

Mini Kit
CLEARFIL™ ESTHETIC CEMENT EX
(kit is available in 3 shades)
#2911KA Universal Kit
#2913KA Clear Kit
#2914KA Opaque White Kit
1 CLEARFIL ESTHETIC CEMENT EX Paste A 2.4 g (1.2 ml), Paste B 2.3 g (1.2 ml), 1 Try-in paste (1.8 ml), 1 CLEARFIL DC BOND Liquid A (1 ml), 1 Liquid B (1 ml), 1 CLEARFIL CERAMIC PRIMER (2 ml), 10 Mixing tips, 1 Light-blocking plate, 1 Mixing dish, 50 Disposable brush tips (white), 1 Brush tip handle (white)

Refills
#2921KA CLEARFIL™ ESTHETIC CEMENT EX Universal Paste A 4.6 g (2.3 ml) and B 4.4 g (2.3 ml)
#2922KA CLEARFIL™ ESTHETIC CEMENT EX Chroma Paste A 4.6 g (2.3 ml) and B 4.4 g (2.3 ml)
#2923KA CLEARFIL™ ESTHETIC CEMENT EX Clear Paste A 4.6 g (2.3 ml) and B 4.4 g (2.3 ml)
#2924KA CLEARFIL™ ESTHETIC CEMENT EX Opaque White Paste A 4.6 g (2.3 ml) and B 4.4 g (2.3 ml)
#2931KA CLEARFIL™ ESTHETIC CEMENT EX Try-in Paste Universal 2.4 g (1.8 ml)
#2932KA CLEARFIL™ ESTHETIC CEMENT EX Try-in Paste Chroma 2.4 g (1.8 ml)
#2933KA CLEARFIL™ ESTHETIC CEMENT EX Try-in Paste Clear 2.4 g (1.8 ml)
#2934KA CLEARFIL™ ESTHETIC CEMENT EX Try-in Paste Opaque White 2.4 g (1.8 ml)
#2512KA CLEARFIL™ DC BOND 1 Bond Liquid A (4 ml)
#2513KA CLEARFIL™ DC BOND 1 Bond Liquid B (4 ml)
#2550KA CLEARFIL™ CERAMIC PRIMER (4 ml)
#013KA K-etchant GEL (6 ml)
#2535KA Mixing tips, pack of 20
#902 Mixing dish
#945 Paper pad
#906 Spatula
#968 Disposable brush tips (white), pack of 50
#967 Disposable brush tips (black), pack of 50
#965 Brush tip handle (white)
#966 Brush tip handle (black)
CLEARFIL™ ESTHETIC CEMENT EX
Color Selection System

Kuraray has created a new color selection system that minimizes the time necessary to choose a shade. Its researchers developed four essential color families, arranged by restoration type. This chart summarizes the variety of shade options by each restoration type.

Shade Matching & Shade Systems

<table>
<thead>
<tr>
<th>Shade Matching and Shade Descriptions</th>
<th>UNIVERSAL</th>
<th>CHROMA</th>
<th>CLEAR</th>
<th>OPAQUE WHITE</th>
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<tr>
<td>Inlay/Onlay (Porcelain, All Ceramic, Hybrid Ceramics, Composite Resin, Metal)</td>
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<tr>
<td>Crown (Porcelain, All Ceramic, Hybrid Ceramics, Composite Resin, Metal)</td>
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</tbody>
</table>

- **Universal**: A shade having a dentin color with an optimal average balance of hue, color, value, and transparency. Ideal for most inlays, onlays, and generally a wide range of shade matching cases.
- **Chroma**: A shade that provides a higher chroma than the Universal shade, this shade is especially suitable for cases where high chroma is necessary at marginal areas of inlays and onlays.
- **Clear**: A colorless and transparent shade is suitable for veneers, crowns and other cases where the underlying tooth color provides most of the color needs.
- **Opaque White**: A shade with high opacity and higher value, suitable for veneers and other cases requiring higher value.

Additional information is available at www.kuraraydental.com
PANAVIA™ 21

**Facts**
- MDP adhesive monomer
- High bond strength to enamel, dentin, metal, metal alloys, ceramics and composite resin restorations
- Reliable cement system with a self-etch “ED Primer” for tooth structure
- User-friendly dispenser
- Available in EX (white), TC (tooth color) and OP (opaque)
- Radiopaque and insoluble

**Indications**
- Cementation of “adhesion” bridges or splints
- Cementation of metal crowns, bridges and inlays/onlays
- Cementation of silanated porcelain and cured composite crowns or inlays/onlays
- Cementation of preformed posts or cast post and cores
- Bonded amalgam restorations

**Description**
PANAVIA™ 21 is an anaerobic-curing adhesive resin cement which cures only when oxygen is eliminated, i.e., when there is direct contact between two surfaces. This provides for optimal working time since the pastes cannot cure before the restoration has been inserted. PANAVIA™ 21 develops a reliable adhesive strength between tooth structure and restorations. Its use in combination with the self-etch ED Primer makes an effective and gentle preparation of enamel and dentin in one step. Etching with acidic agents and rinsing becomes unnecessary, eliminating post-operative sensitivity. The enclosed etching gel is to be used on uncut enamel and adhesion bridge cases.

**Product Codes**
- #450KA PANAVIA™ 21 EX Kit (white)
- #460KA PANAVIA™ 21 TC Kit (tooth color)
- #470KA PANAVIA™ 21 OP Kit (opaque)
- 1 PANAVIA™ 21 Catalyst: 7.9 g (4 ml), 1 PANAVIA™ 21 Universal: 7.6 g (4 ml), 1 ED Primer Liquid A (4 ml),
  1 ED Primer Liquid B (4 ml), 1 OXYGUARD™ II (6 ml),
  1 PANAVIA™ Etching Agent V (5 ml), 1 Paste dispenser,
  1 Mixing pad, 1 Spatula, 1 Mixing dish, 1 Box sponge pledgets,
  2 Brush tip handles (white & black), 2x50 Disposable brush tips

**Refills**
- #455KA PANAVIA™ 21 EX Catalyst paste: 7.9 g (4 ml) & Universal paste: 7.6 g (4 ml)
- #465KA PANAVIA™ 21 TC Catalyst paste: 7.9 g (4 ml) & Universal paste: 7.6 g (4 ml)
- #475KA PANAVIA™ 21 OP Catalyst paste: 7.9 g (4 ml) & Universal paste: 7.6 g (4 ml)
- #1053KA ED Primer Liquid A: 4 ml
- #1054KA ED Primer Liquid B: 4 ml
- #032 KA OXYGUARD™ II: 6 ml
- #016KA PANAVIA™ Etching Agent V: 5 ml
- #930KA PANAVIA™ 21 Dispenser
- #945 PANAVIA™ 21/F 2.0 Mixing pad (M)
- #906 Spatula
- #902 Mixing dish
- #941 Sponge pledget
- #965 Brush tip handle (white)
- #966 Brush tip handle (black)
- #967 Disposable brush tips (black), pack of 50
PANAVIA™ F 2.0

**Facts**
- MDP adhesive monomer
- Self-cure or light-cure
- One-step, self-etch primer “ED Primer II” significantly reduces sensitivity
- Convenient working and setting times with high bond strength
- Fluoride releasing
- Radiopaque and insoluble
- Complete kit includes everything for cement procedure

**Indications**
- Cementation of crowns, bridges, inlays and onlays made of conventional porcelain, ceramic, hybrid ceramics, composite resin or metal
- Cementation of veneers
- Cementation of adhesion bridges
- Cementation of metal cores, resin cores, metal posts or glass-fiber posts
- Amalgam bonding

**Description**
PANAVIA™ F 2.0 is a universal resin cement which shows high bond strength for all indications and materials. PANAVIA™ F 2.0 has been regarded as an exponent for permanent adhesion technique in the areas of all ceramic and metal restorations, especially for high quality and difficult cases. It is recommended by leading universities as a premium product. The resin cement has rare post-operative sensitivity and provides consistently good results. The anaerobic curing properties (which do not begin until direct contact has been made with the restoration; no more contact with oxygen; and flexible consistency) make PANAVIA™ F 2.0 a popular aid in daily practice. Even after releasing fluoride, the cement maintains its high mechanical strength, due to the special surface coating technology of sodium fluoride.

**Product Codes**
PANAVIA™ F 2.0 Complete Kit
- #501KA PANAVIA™ F 2.0 Complete Kit TC (tooth color)
- #502KA PANAVIA™ F 2.0 Complete Kit White
- #503KA PANAVIA™ F 2.0 Complete Kit Opaque
- #504KA PANAVIA™ F 2.0 Complete Kit Light

PANAVIA™ F 2.0 Paste A: 5.0 g (2.3 ml), PANAVIA™ F 2.0 Paste B: 4.6 g (2.3 ml), ED Primer II Liquid A: 4 ml, ED Primer II Liquid B: 4 ml, CLEARFIL™ CERAMIC PRIMER: 4 ml, ALLOY PRIMER: 6 ml, PANAVIA™ F 2.0 OXYGUARD™ II: 6 ml, Spatula, Mixing pad, Disposable brush tips, Brush tip handle, Mixing dish, Light-blocking plate, Disposable nozzles

PANAVIA™ F 2.0 (Introductory Kit)
- #480KA PANAVIA™ F 2.0 TC (tooth color)
- #481KA PANAVIA™ F 2.0 White
- #482KA PANAVIA™ F 2.0 Opaque
- #483KA PANAVIA™ F 2.0 Light

PANAVIA™ F 2.0 Paste A: 2.1 g (1 ml), PANAVIA™ F 2.0 Paste B: 1.9 g (1 ml), ED Primer II Liquid A: 1 ml, ED Primer II Liquid B: 1 ml, PANAVIA™ F 2.0 OXYGUARD™ II: 6 ml, Brush tip handle, Disposable brush tips (50), Disposable nozzles (5), Light-blocking plate, Mixing pad

Additional information is available at www.kuraraydental.com
Refills

#493KA PANAVIA™ F 2.0 A Paste: 5.0 g/2.3 ml
#494KA PANAVIA™ F 2.0 B Paste (TC): 4.6 g/2.3 ml (tooth color)
#495KA PANAVIA™ F 2.0 B Paste (White): 4.6 g/2.3 ml
#496KA PANAVIA™ F 2.0 B Paste (Opaque): 4.6 g/2.3 ml
#497KA PANAVIA™ F 2.0 B Paste (Light): 4.6 g/2.3 ml
#491KA PANAVIA™ F 2.0 ED Primer II Liquid A: 4 ml
#492KA PANAVIA™ F 2.0 ED Primer II Liquid B: 4 ml
#490KA PANAVIA™ F 2.0 OXYGUARD™ II: 6 ml
#945KA PANAVIA™ 21/F 2.0 Mixing pad (M)
#906 Spatula
#902 Mixing dish
#965 Brush tip handle (white)
#967 Disposable brush tips (black), pack of 50
#917KA Disposable nozzles (OXYGUARD™ II) (20)

Available in four color shades

**TC (tooth color)**  Color support for the natural tooth.

**Light**  Lighter than TC.

**White**  Opaque; affects dark tooth and tooth discolorations optimally and naturally.

**Opaque**  Covers the underlying surface completely. Especially suitable for precious/non-precious alloys and adhesion/Maryland bridges. Opaque paste should not be light-cured, but allowed to self-cure with the use of OXYGUARD™ II.
PANAVIA™ SA CEMENT

**Description**

PANAVIA™ SA CEMENT is a self-adhesive resin cement that features a dual-cure (light- and/or self-cure) formulation; automix delivery, and is fluoride-releasing. It has been developed for cementing indirect restorations made of metal, all-ceramic (Zirconia, Alumina), or composite. PANAVIA™ SA CEMENT does not require phosphoric acid treatment or any special primer or adhesive for bonding to tooth structure. This simplified self-adhesive resin cement provides a higher level of adhesion and mechanical strength compared with other general-purpose cements (including self-adhesive cements, glass ionomer cements, resin-modified glass ionomer cements, zinc phosphate cements, or polycarboxylate cements). PANAVIA™ SA CEMENT resolves problems encountered with complicated procedures and insufficient bond strength in the cementing of crowns, bridges, inlays and onlays, or cementing prefabricated dental posts in daily clinical cases. PANAVIA™ SA CEMENT’s adhesive strength is rarely affected by the dryness on the adherent surface of the tooth structure, due to Kuraray’s adhesion technology (based on a proprietary adhesive phosphate monomer). In addition, the water sorption of PANAVIA™ SA CEMENT is lower than that of most general luting cements, resulting in a product that is very forgiving in clinical technique and application. In addition, this reliable and simplified self-adhesive cement offers unrivaled easy removal of excess cement. Excess removal and clean-up is accomplished very quickly with short chair time and without damaging the gingiva. PANAVIA™ SA CEMENT provides the benefits of resin cement, the features of glass ionomer and Kuraray’s legendary adhesive technology.

**Facts**

- Exceptional handling, especially with excess cement removal
- Very low technique sensitivity, with consistent bond strength even to overdry and wet dentin/enamel
- High bond strength, for any restorations including Zirconia and Alumina
- Excellent marginal sealing, protection from marginal leakage
- Low solubility and low film thickness, for optimal cementation
- Simple to use, self-adhesive, no primers, silane or bonding agents needed
- Fluoride releasing
- Available in automix or economical handmix

**Indications**

- Cementation of crowns, bridges, inlays, and onlays made of conventional porcelain, ceramic, hybrid ceramics, composite resin or metal
- Cementation of metal cores, resin cores, metal posts or glass-fiber posts

Additional information is available at www.kuraraydental.com
Product Codes

PANAVIA SA CEMENT Automix
# 2980KA Universal (A2)
# 2981KA White
Content: 1 syringe:
• Paste A: 4.3 g (2.3 ml)
• Paste B: 4.0 g (2.3 ml)
Mixing Tip: 20 tips

PANAVIA SA CEMENT Hand Mix
# 2970KA Universal (A2)
# 2971KA White
Content: 1 syringe:
• Paste A: 4.4 g (2.5 ml)
• Paste B: 4.2 g (2.5 ml)

Value Kits

PANAVIA™ SA CEMENT Automix VALUE KIT
# 2982KA Universal (A2)
# 2983KA White
Content: 3 syringes:
• Paste A: 4.3 g (2.3 ml)
• Paste B: 4.0 g (2.3 ml)
Mixing tip: 2 x 20 tips
Endo tip: 10 tips

Refills

#2988KA PANAVIA™ SA CEMENT Mixing Tips, pack of 20
#2989KA PANAVIA™ SA CEMENT Endo Tips, pack of 20

Integrated System Recommendations

#2831KA CLEARFIL™ DISPENSER (5 ml)

CLEARFIL™ DISPENSER makes paste dispensing easier and more controllable, especially for endodontic use.
The Fusion of Beauty, Strength and Usability

Too often dental professionals are forced to sacrifice one important quality for another in their dental products. Ease of use gives way to esthetics, or the need for structural reinforcement can override cosmetic factors. Finally, there is a product line that requires zero compromise. Kuraray CLEARFIL MAJESTY™ ES-2, Flow and Posterior restorative composites fuse beauty, strength and usability into one integrated system.

Now dentists can restore function and integrity to damaged and decayed teeth with confidence. Kuraray’s composites offer state-of-the-art technology in natural looking restorations. With advanced esthetics and superior strength, CLEARFIL MAJESTY™ ES-2, Flow, and Posterior offer a composite solution for almost every restorative situation.

Breakthrough Technology for Total Composite Satisfaction

Esthetic dental composites were first introduced in the 1960’s, but suffered serious limitations in their physical properties and durability. Developments in polymer science over the last two decades have allowed for vast improvements in shade matching, translucency, resilience and shrinkage, creating beautiful and reliable restorations.

Kuraray, through intensive research and development, has arrived at the forefront of composite technology. Nationwide testing among hundreds of doctors told us exactly what dental professionals want in a composite, and we responded. Dentists who use the CLEARFIL MAJESTY™ line of products have reported increased durability, improved usability and complete patient satisfaction in both comfort and appearance.
Ideal Solutions

CLEARFIL MAJESTY™ is a full line of restorative and esthetic composites, each specifically engineered to offer unique benefits: from radiant restorations achieved with CLEARFIL MAJESTY™ ES-2’s light diffusion technology; to the exceptional strength and ease of use provided by CLEARFIL MAJESTY™ Flow; to one of the lowest polymerization shrinkages of CLEARFIL MAJESTY™ Posterior. All CLEARFIL MAJESTY™ composites are specially designed to work with Kuraray’s bonding agents, cements and core build-ups to achieve strong, natural looking restorations. Studies indicate that Kuraray’s unique composite properties appear more like natural teeth than those of their competitors, resulting in increased satisfaction for both patients and doctors. Advantages of CLEARFIL MAJESTY™ ’s composite resins include:

• Advanced esthetics in light diffusion and polishability
• Exceptional strength
• Flexible shade matching
• Low polymerization shrinkage
• Radiopacity
• An easy to use product from a certified biocompatible, integrated system

Dental professionals can give patients beautiful anterior and posterior restorations and repairs with Kuraray’s CLEARFIL MAJESTY™ line of natural-looking, strong, easy-to-match, and easy-to-use composites.
Overview

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Additional information is available at www.kuraraydental.com
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*for liner use only

- **Recommended**
- **Adequate**
- **OK, but not recommended**
CLEARFIL MAJESTY™ ES-2 Classic

Facts
- The ONLY composite with VITA Approved Shades which match the VITA Classical Shade Guide
- Unsurpassed natural shade blending with surrounding tooth structure
- Single shade placement technique, no complex multi-shade layering due to Kuraray’s pioneering LD (light-diffusion) Technology
- Easy polishing with durable gloss
- Long working time for easy sculpting with no slumping
- Universal for anterior and posterior use
- Virtually no post-cure color change

Indications
- Direct restorations for anterior and posterior teeth (Class I – V cavities)
- Direct veneers
- Correction of tooth position and tooth shape (e.g. diastema closure, dwarfed tooth, etc.)
- Intra-oral repairs of fractured crowns/bridges

Description
CLEARFIL MAJESTY ES-2 Classic is a light-cure, radiopaque universal nano-hybrid composite — the only composite with VITA approved shades. CLEARFIL MAJESTY ES-2 Classic features a single-shade, intuitive color matching system with Kuraray’s proprietary LD, or light-diffusion technology. This new LD Technology is like having millions of micro-sized prisms, all refracting and transmitting color and light from the surrounding dentin and enamel through the composite. Precise color blending that begins at placement and continues from one visit to the next. CLEARFIL MAJESTY ES-2 also has a consistency that is easy to shape, with high polishability and low polymerization shrinkage.

Syringes: 3.6 g / 2.0 ml
PLTs: 20 plts (0.25 g each)
CLEARFIL MAJESTY™ ES-2 Premium

**Facts**
- The ONLY composite with a VITA Approved Shade Concept
- Unsurpassed natural shade blending with surrounding tooth structure
- Light diffusion property similar to natural teeth
- Long working time for easy sculpting with no slumping
- Easy polishing with durable gloss
- Universal for anterior and posterior use
- Virtually no post-cure color change
- Direct restorations for anterior and posterior teeth (Class I-V cavities)
- Direct veneers
- Correction of tooth position and tooth shape (e.g. diastema closure, dwarfed tooth, etc.)
- Intraoral repairs of fractured crowns/bridges
- E shade for enamel replacement
- D shade for dentin replacement

**Indications**
- Direct restorations for anterior and posterior teeth (Class I - III, V cavities, cervical caries, root erosion)
- Cavity base / liner
- Intra-oral repairs of fractured crowns/bridges/composite resin

**Description**
CLEARFIL MAJESTY ES-2 Premium is redefining composite technology. With the only VITA approved shade concept, Kuraray’s new composite material covers 15 VITA classical shades with only five enamel and dentin shades. Kuraray’s proprietary light-diffusion, or LD technology, adds the finishing touch, easily blending to the color of the surrounding tooth structure. Available in syringe or PLT (preloaded tip), CLEARFIL MAJESTY ES-2 Premium combines exceptional aesthetics and economical value, perfect for any dental practice.

Syringes: *3.6 g / 2.0 ml
PLTs: 20 plts (0.25 g each)
CLEARFIL MAJESTY™ Flow

**Description**

CLEARFIL MAJESTY™ Flow is a flowable, superfilled, light-cure, radiopaque restorative composite resin with the filler particles treated with a proprietary new surface coating technology. The resulting resin matrix is reinforced with a high filler loading of 81 wt%, a loading similar to many universal composite resins. In addition to the high filler loading, CLEARFIL MAJESTY™ Flow has a low viscosity for good handling and easy placement.

CLEARFIL MAJESTY™ Flow exhibits high mechanical properties (compressive strength: 329MPa, flexural strength: 145MPa), high wear resistance, high radiopacity (290 %Al) and very low polymerization shrinkage. These features make it a very versatile product with multiple uses (including as a universal composite resin, e.g. Class I, II). CLEARFIL MAJESTY™ Flow has excellent consistency, appropriate flowability, and is not runny or sticky. CLEARFIL MAJESTY™ Flow restorations will not pull away from the margins or surrounding walls. Equally significant is the new CLEARFIL MAJESTY™ Flow dispenser, a new syringe that provides virtually bubble-free and controllable dispensing, as well as dramatically easy handling.

This picture visually illustrates the superior viscosity of CLEARFIL MAJESTY™ Flow that makes it incredibly easy to use with great handling.

Syringes: 3.2 g / 1.5 ml

**Facts**

- High radiopacity for better radiographic detection
- New syringe with on-demand delivery and bubble-free dispensing
- Very high filler loading (62 vol%) for exceptional strength and wear resistance even for posterior restorations
- Liner material or restorative material with dentin-like properties
- Lowest polymerization shrinkage of the current flowables
- Medium viscosity so it stays where you place it, yet it flows where it needs to
- Esthetic shades for optimal cosmetic results

**Indications**

- Direct restorations for anterior and posterior teeth (Class I - III, V cavities, cervical caries, root erosion)
- Cavity base / liner
- Intra-oral repairs of fractured crowns/bridges/composite resin

Additional information is available at www.kuraraydental.com
CLEARFIL MAJESTY™ Posterior

**Description**

CLEARFIL MAJESTY™ Posterior is a light-cure, radiopaque restorative composite resin composed of nano- and micro-inorganic filler, treated with a proprietary new surface coating technology. The new surface technology permits a larger quantity of nanofiller to be dispersed in the resin matrix, which consists of monomer and microfiller. The resulting resin matrix is reinforced with a filler loading of 92 wt% (82 vol%).

CLEARFIL MAJESTY™ Posterior has an improved high surface hardness close to that of human enamel (high wear resistance, but friendly against an antagonist tooth), high mechanical strength (compressive strength: 504 MPa, flexural strength: 177 MPa), high durability, high curing depth, low polymerization shrinkage (1.5 vol%) and a low thermal expansion coefficient. These features assure a reliable posterior restoration with better marginal adaptation and a restoration that will last. In spite of the extremely high filler loading, CLEARFIL MAJESTY™ Posterior has an easy-to-shape consistency. The high refractive matrix provides another essential benefit: very minor transparency shift after light-curing.

- Syringes: 4.9 g / 2.0 ml
- PLTs: 20 plts (0.25 g each)

**Facts**

- Highest filler loading (92 wt%, 82 vol%)
- High surface hardness, close to human enamel (high wear resistance), but friendly against an antagonist tooth
- High mechanical properties (strength, durability) and high curing depth
- Low polymerization shrinkage and low thermal expansion
- Better marginal adaptation, even for a long time period
- Easy handling
- Versatile, simple, accurate shade selection for posterior restorations

**Indications**

- Direct restorations for anterior and posterior teeth (Class I – V cavities)
- Correction of tooth position and tooth shape (e.g. diastema closure, dwarfed tooth, etc.)
- Intra-oral repairs of fractured crowns/bridges
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<td>ENAMEL</td>
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<td>Flow #2621-Ka</td>
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<td>HIGH OPACITY A4 (OA4) WITH REDDISH TINT</td>
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<td>Flow #2632-Ka</td>
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<td>OPAL Shade</td>
<td>HIGH OPACITY / A3</td>
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<td>Flow #2635-Ka</td>
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<td>BLEACH Shade</td>
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<td>Flow #1015-Ka</td>
<td>CLEARFIL™ MAJESTY Flow Needle Tips (20 Pieces)</td>
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<tr>
<td>Enml/dntn Starter Kit #3011-Ka</td>
<td>#3101-Ka</td>
<td>Premium A1E, A1D, A2E, A2D</td>
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<td>PLT Prof Kit #3100-Ka</td>
<td>Classic: A1, A2, A3, W; Premium: A1E, A2E, A3E, WE, A1D, A2D, A3D, WD; Translucent: Clear, Amber, Blue Gray; Shade Guide</td>
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<td>Shade Guide #3000-Ka</td>
<td>Compact Shade Guide</td>
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</table>
**Technique Guide**

Lightness/Value based shade taking with unique
**CLEARFIL MAJESTY ES-2 Shade guide**
(For most restorations, *VITA Classical shade guide* also can be used.)

Option of single (Classic) and dual (Premium) shade systems

**Classic** : Single-shade technique by VITA Approved Shades
Incorporating Kuraray light diffusion technology

**Premium** : Dual-shade technique by VITA Approved Shade Concept
Biomimetic layering system
Dentin replaced with a Dentin shade and Enamel with Enamel shade

### Shade Description Chart

<table>
<thead>
<tr>
<th>Layering method</th>
<th>Shade category</th>
<th>Shade</th>
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<tbody>
<tr>
<td>Single-shade</td>
<td>Classic</td>
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Other shades

<table>
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<tr>
<th>Shade category</th>
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<tr>
<td>Classic</td>
<td>A8</td>
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<tr>
<td>Translucent</td>
<td>Clear, Amber, Blue, Gray</td>
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</tbody>
</table>

*All five lowest lightness in Classic shades.
*Translucent shades can be used for fine characterization of the restoration.

"CLEARFIL" and "CLEARFIL MAJESTY" are trademarks of KURARAY CO., LTD.
"VITA" is a trademark of VITA Zahnfabrik, Bad Sackingen, Germany.
Single-shade technique (Classic system)

Shade-taking
Step 1:
Select the closest lightness/value tab from 6 exposed tab options of the Shade guide.
Step 2:
Pull out the chosen tab from the holder and select the corresponding shade.

Restoration

Dual-shade Technique (Premium system)

Shade-taking
Select the closest lightness/value tab from 6 exposed tab options of the Shade guide.
For teeth lighter than W (white) shade, pull-out the tab for XW (extra-white) shade taking.

Restoration
1. Select the corresponding pastes of Premium shades (Enamel/Dentin).
   For example, when A1 tab is chosen, then select A1E and A1D shades.
2. Replace dentin space with a respective Dentin shade, and enamel space with a respective Enamel shade.
CLEARFIL™ AP-X

Facts
- Superior physical properties
- High strength, resistance, and durability
- High polishability
- Accurate color matching
- Radiopaque
- Easy handling, no stickiness
- Available in syringes and PLTs

Indications
- Class I, II, V restorations of posterior teeth
- Class III, IV, V restorations of anterior teeth
- Cervical cavities or defects involving tooth surfaces

Available Shades (PLTs & syringes)

Available shades (Syringes)
#1721KA  A2  4.6 g
#1722KA  A3  4.6 g
#1723KA  A3.5  4.6 g
#1724KA  A4  4.6 g
#1725KA  B2  4.6 g
#1726KA  B3  4.6 g
#1727KA  B4  4.6 g
#1728KA  C1  4.6 g
#1729KA  C2  4.6 g
#1730KA  C3  4.6 g
#1731KA  C4  4.6 g
#1732KA  XL  4.6 g
#1733KA  CL  4.6 g
#1734KA  HO  4.6 g

Available Shades (PLTs)
20 PLTs per package
#1741KA  A2  0.2 g
#1742KA  A3  0.2 g
#1743KA  A3.5  0.2 g
#1744KA  A4  0.2 g
#1745KA  B2  0.2 g
#1746KA  B3  0.2 g
#1751KA  XL  0.2 g
#1754KA  HO  0.2 g
CLEARFIL™ ST Opaquer

**Facts**
- High opacity
- Immediate coverage of metal with a single application

**Indications**
- Masking of metal during intra-oral repair of porcelain-fused-to-metal crowns
- Masking of metal in restoration of post and core crowns
- Lightening of stained or discolored teeth in porcelain or composite veneer restorations
- Masking of pulp capping materials

**Description**
CLEARFIL™ ST Opaquer is a light-cure, opaque resin used to mask underlying metal darkness and tooth discoloration.

**Product Codes**
- #636KA  L, (B1), 1 syringe: 4.0 g
- #637KA  US, (A2), 1 syringe: 4.0 g

SURFACE COAT™

**Facts**
- Colorless, transparent gloss that “feels good” to your patient
- Glazed surface resists staining
- High gloss that can protect the restoration surface
- Excellent physical properties, especially surface hardness
- Virtually no oxygen inhibition layer
- Fast, simple application procedure
- Almost no color change after polymerization

**Indications**
- Direct and indirect composite resins
- Acrylic provisional crowns and bridges
- Acrylic appliances
- Glass ionomers and resin-modified glass ionomers

**Product Codes**
- #263KA SURFACE COAT™: 5.0 ml

Additional information is available at www.kuraraydental.com
The Strength of Technology

Long term durability and reliability are essential features of quality dental care, and dental professionals need to know that they can consistently rely on their dental products. Core build-up materials are only one aspect of daily practice, but their trusted high compressive strength, hardness, and adhesion are fundamental in the construction of both vital and non-vital teeth.

Similar to constructing a building’s foundation, dental professionals must select only the strongest and hardest core build-up materials to ensure a dependable tooth substructure. Enter the Kuraray CLEARFIL™ line of core build-up composites. Innovative and easy to use, Kuraray technology uses precise formulations that result in dependable restorations that last.

Feels Like Dentin, Cuts Like Dentin

With superior compressive and flexural strength, improved adhesive qualities and esthetically sound color, Kuraray’s CLEARFIL™ DC CORE PLUS, CLEARFIL™ PHOTO CORE, and CLEARFIL™ CORE products are ideal for dependable core build-up. Balanced fillers, fast light-curing methods and a non-sticky formulation create the flexibility needed for a variety of substructure applications and procedures for both vital and non-vital teeth. After curing, our core build-ups have the added advantage of feeling and cutting like dentin.
A Trusted Product Line

Kuraray CLEARFIL™ CORE build-up materials are part of a full line of restorative and esthetic composites, each specifically engineered to offer unique benefits. All of our products are specially designed to work with Kuraray bonding agents, cements and restorative composites to achieve strong, natural looking restorations. Advantages of Kuraray core build-up include:

- Superior compressive strength and durability
- Easy handling
- Fast light-cure, self-cure or dual-cure choices
- Cuts like dentin
- Economical
- Radiopaque

Discover Kuraray CLEARFIL™ DC CORE PLUS, CLEARFIL™ PHOTO CORE and CLEARFIL™ CORE NEW BOND build-up composites: the technology that clinicians depend on for the fast and easy construction of strong, reliable core build-up.

<table>
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<th></th>
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<th>Radiopaque</th>
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*Dentin and White
**CLEARFIL™ PHOTO CORE**

**Facts**
- High polymerization depth
- No increments needed
- Esthetic translucent shade
- Cuts like dentin
- Easy handling
- Radiopaque
- Non-stick formulation

**Indications**
- Core build-up of vital or non-vital teeth

**Description**
CLEARFIL™ PHOTO CORE is a light-cure core build-up composite for the most demanding esthetic requirements. The material has a balanced filler content (83 wt%, 65 vol%) which has been specifically selected for the construction of dependable core build-up. Thanks to its high polymerization depth, clinicians are able to simplify their procedure by eliminating copper bands, matrix bands, and incremental layering. CLEARFIL™ PHO TO CORE cuts like dentin after curing, is radiopaque and does not stick to instruments during application, thanks to its special formula. With a compressive strength of 334 MPa, CLEARFIL™ PHOTO CORE is ideal for small or large core build-up on vital or non-vital teeth.

**Product Codes**
- #355KA CLEARFIL™ PHOTO CORE (3 syringes): 4.4 g/2 ml each
- #356KA CLEARFIL™ PHOTO CORE (1 syringe): 4.4 g/2 ml
- #366KA CLEARFIL™ PHOTO CORE PLT (30 tips): 0.4 g each

**Integrated System Recommendations**
- #1970KA CLEARFIL™ SE BOND
- #2890KA CLEARFIL S3 BOND PLUS Set
- #2893KA CLEARFIL S3 BOND PLUS Value Pack (3 Bottles of Bond (4ml))
- #2895KA CLEARFIL S3 BOND PLUS Single Dose (pack of 50 unit-dose 0.1 ml/tip)
- #2896KA CLEARFIL S3 BOND PLUS Single Dose VALUE Pack (pack of 100 unit-dose 0.1 ml/tip)
- #2870KA CLEARFIL™ SE Protect Kit
CLEARFIL™ PHOTO CORE

Procedure Guide: CLEARFIL™ PHOTO CORE and PHOTO CORE PLT

1. Apply PRIMER gently.
2. Dry with mild air flow.
3. Apply BOND.
4. Air flow gently.
5. Light-cure.
6. Placement.
7. Light-cure & Refer to the instructions for use after light-curing time.
8. Prepare the abutment teeth.

Additional information is available at www.kuraraydental.com
CLEARFIL™ DC CORE PLUS

**Facts**
- Excellent and desired physical properties
- Superior bond strength with CLEARFIL S³ BOND PLUS
- Flows with control; no matrix band needed
- Specially designed guide tip for deep root canals
- Long-term durability
- Post cementation
- Cuts and feels like dentin
- Radiopaque

**Indications**
- Core build-up of vital or non-vital teeth
- Post cementation with the use of CLEARFIL S³ BOND PLUS

**Description**
CLEARFIL DC CORE PLUS is a dual-cure, radiopaque two-component core build-up material supplied in a convenient automix delivery system. CLEARFIL DC CORE PLUS has superior compressive and flexural strength with a filler loading of 74wt%. CLEARFIL DC CORE PLUS cuts like dentin when being prepared, and affords long-term durability. Core build-ups are faster, easier and stronger than ever when used with our one-step bonding agent: CLEARFIL S3 BOND PLUS, also offering the added benefits of fluoride release and greatly reduces postoperative sensitivity. CLEARFIL DC CORE PLUS provides the dentist with the confidence of durable, lasting restorations.

**Product Codes**
- #2942KA CLEARFIL DC CORE PLUS (Dentin)
- #2943KA CLEARFIL DC CORE PLUS (White)
- Catalyst paste 9.9 g (4.5 ml), Universal paste 9.8 g (4.5 ml), Automix syringe, 20 Mixing tips, 20 Guide tips

**Refills**
- #1029KA Guide Tip (L) (For DC CORE PLUS): 20 tips
- #1030KA Guide Tip (S) (For DC CORE PLUS): 20 tips
- #1031KA Mixing Tip (For DC CORE PLUS): 20 tips

**Integrated System Recommendations**
- #2890KA CLEARFIL S³ BOND PLUS Set
- #2893KA CLEARFIL S³ BOND PLUS Value Pack 4mL x3
- #2895KA CLEARFIL S³ BOND PLUS Single Dose Standard Pack (50 Pcs)
- #2896KA CLEARFIL S³ BOND PLUS Single Dose Value Pack (100 Pcs)

**Integrated System Recommendations**
- #2890KA CLEARFIL S3 BOND PLUS Set
- #2893KA CLEARFIL S3 BOND PLUS Value Pack (3 Bottles of Bond (4ml))
- #2895KA CLEARFIL S3 BOND PLUS Single Dose (pack of 50 unit-dose 0.1 ml/tip)
- #2896KA CLEARFIL S3 BOND PLUS Single Dose VALUE Pack (pack of 100 unit-dose 0.1 ml/tip)

- #2510KA CLEARFIL™ DC BOND Kit
CLEARFIL™ CORE NEW BOND

Facts
- Cuts like dentin
- Economical use
- Simple handling
- Radiopaque
- Predictable curing

Indications
- Core build-up of vital or non-vital teeth

Description
CLEARFIL™ CORE NEW BOND is a self-cure composite core build-up material (filler content: 78 wt%, 63 vol%) that has a unique shade and high compressive strength. It is especially suitable for the construction of immediate core build-up. The contrasting esthetically sound color, the good adhesive properties, the characteristic setting qualities, and hardness which can be compared to dentin, make it possible to build a dependable substructure very simply and quickly. CLEARFIL™ CORE NEW BOND is suitable for the construction of both vital and non-vital teeth.

Product Code
#315KA CLEARFIL™ CORE NEW BOND
1 Catalyst paste 23 g & Universal paste 21 g
TEETHMATE™ F-1

Facts
- High bond strength to enamel
- Proven adhesive MDP monomer
- Long-lasting fluoride release with molecular stability
- Easy handling
- Convenient flow control

Indications
- Pit and fissure sealant

Description
The new, single-liquid formulation of TEETHMATE™ F-1 makes it fast and easy to provide patients with a great defense against caries. TEETHMATE™ F-1 is a fluoride-releasing, light-cure pit and fissure sealant material with strong adhesive properties. A newly developed pin application system simplifies the “flow control.” A stable copolymer which releases fluoride is one of Kuraray’s own inventions. TEETHMATE™ F-1 is an unfilled composite of low viscosity that penetrates deep into pits and fissures for better long-term sealing and minimal occlusal wear. The balanced product formula of TEETHMATE™ F-1 includes the adhesive MDP monomer, which is also used in the resin cement PANAVIA™ F 2.0 and the bonding system CLEARFIL™ SE BOND.

The special properties of the monomer MDP give TEETHMATE™ F-1 a genuine chemical adhesion and better retention on the etched tooth enamel.

Product Codes
- #1760KA TEETHMATE™ F-1 Kit (natural)
- #1790KA TEETHMATE™ F-1 Kit (opaque)
- 2 Syringes (2.5 ml), 1 K-etchant GEL (6 ml), 2 Disposable nozzles (25 pcs), 1 Brush tip handle, Disposable brush tips (white, 50 pcs), 10 Mixing dishes

Refills
- #1765KA TEETHMATE™ F-1 (natural): 2.5 ml
- #1795KA TEETHMATE™ F-1 (opaque): 2.5 ml
- #013KA K-etchant GEL: 6 ml
- #919 TEETHMATE™ Applicator nozzles (25)
- #912 TEETHMATE™ Mixing dishes (25)
- #965 Brush tip handle (white)
- #968 Disposable brush tips (white), pack of 50
CLEARFIL™ REPAIR Multi Purpose

**Facts**
- Repairing fixed prosthetic restorations fabricated from porcelain, ceramics, hybrid ceramics, composite resin, or metal oxide restorations
- Very high bond strength to metal oxide, like Zirconia
- No toxic Hydrofluoric Acid (HF) needed
- Long, stable shelf-life
- Re-glazing porcelain and composite restorations

**Indications**
- Repairing fixed prosthetic restorations fabricated from porcelain, ceramics, hybrid ceramics, or composite resin (e.g., inlays/onlays, crowns, bridges, and the superstructure of implants)
- Re-glazing fixed intra-oral restorations (e.g., cured direct/indirect composite resin, provisionals, acrylic appliances, glass ionomers)

**Description**
CLEARFIL™ REPAIR Multi Purpose is a universal, light-cure adhesive system which enables the rapid repair of all tooth-related fractures. The system provides high bond strength in direct bonding procedures with protection against microleakage and minimal decalcification.

**Product Code**
- #1973KA CLEARFIL™ REPAIR Multi Purpose
- K-etchant Gel (6 ml), ALLOY PRIMER (5 ml), SURFACE COAT (5 ml), CLEARFIL™ CERAMIC PRIMER (4 ml), CLEARFIL™ ST OPAQUER US (4 g)
- 1 Mixing dish, 1 Mixing pad, 2 Brush tip handles (white & black), Disposable brush tips (50), Disposable flat brush tips (20), 1 Light-blocking plate

**Refills**
- #013KA K-etchant Gel 6 ml
- #064KA ALLOY PRIMER 5 ml
- #263KA SURFACE COAT 5 ml
- #2550KA CLEARFIL™ CERAMIC PRIMER: 4 ml
- #637KA CLEARFIL™ ST OPAQUER US: 4 g
- #902 Mixing dish
- #965 Brush tip handle (white)
- #966 Brush tip handle (black)
- #968 Disposable brush tips, pack of 50
- #1010KA Disposable brush tips, flat type, pack of 20
- #945 PANAVIA™ Mixing pad (M)

**Procedure Guide: CLEARFIL™ REPAIR Multi Purpose**

1. Roughen the surface with a diamond point, rinse & dry.
2. Apply K-etchant GEL on surface, leave in place for 5 seconds, rinse & dry.
3. If the surface contains metal, apply ALLOY PRIMER.
4. Apply CLEARFIL™ CERAMIC PRIMER to the surface & dry.
5. If the surface contains metal, apply CLEARFIL™ ST OPAQUER & light-cure.
6. Place & light-cure composite resin (e.g. CLEARFIL MAJESTY™ ES-2).

Roughen the surface with a diamond point, rinse & dry.
Apply K-etchant GEL on surface, leave in place for 5 seconds, rinse & dry.
If the surface contains metal, apply ALLOY PRIMER.
Apply CLEARFIL™ CERAMIC PRIMER to the surface & dry.
If the surface contains metal, apply CLEARFIL™ ST OPAQUER & light-cure.
Place & light-cure composite resin (e.g. CLEARFIL MAJESTY™ ES-2).

Additional information is available at www.kuraraydental.com
Caries Detector

Facts
- Fast and easy to use
- Stains only non-remineralized carious dentin
- Helps clinicians to preserve healthy tissue

Indications
- Disclosing carious dentin in all cavity preparations

Description
Caries Detector is an excellent caries disclosing agent for conservative dentistry. It aids in the excavation of the outer decalcified and infected carious dentin layer, permitting optimal caries removal. It also helps minimize the removal of remineralized, healthy dentin, protecting the vitality of the pulp and, as a result, conserve the maximum amount of healthy tissue.

Product Code
#220KA Caries Detector, 2 bottles: 6 ml x 2

K-etchant GEL

Facts
- Thixotropic properties provide controlled application
- 40% phosphoric acid

Indications
- Etching the enamel and dentin for adhesive restorations

Description
K-etchant GEL is a thixotropic etching gel which is used to etch tooth enamel, dentin, porcelain, hybrid ceramics and cured composites for adhesive restorations. Its special feature: When you shake the bottle, the material becomes liquefied, simplifying the application of K-etchant GEL. When it comes into contact with oxygen, it reverts to the gel state, ensuring that only those areas which are supposed to be treated are etched.

Product Code
#013KA K-etchant GEL: 6 ml
Warranty
All data herein are based on actual measurements performed by Kuraray Medical, Inc. All information contained herein is presented in good faith and without warranty.

Kuraray Medical, Inc. will replace any product that is proved to be defective. Neither Kuraray Medical, Inc., nor the distributor, accept liability for any loss or damage, direct, consequential or special, arising out of the application or use of or the inability to use these products. Before using, the user shall determine the suitability of the products for the intended use and the user assumes all risk and liability whatsoever in connection therewith.

Note
Please read Instructions for Use thoroughly before using these products.

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