omniCHROMA

Resin-based Dental Restorative Material
Shade Adjustment with Typical Composites

Competitors

All universal composites currently on the market offer multiple shades to match all patients’ tooth shades.

Multi-layer system

- Filtek Supreme Ultra: Shade 36
- Premise: Shade 34
- Estelite Omega: Shade 11

One-layer system

- Estelite Sigma Quick: Shade 20
- TPH Spectra: Shade 26+7
- Clearfil Majesty ES-2 Classic: Shade 18
- TPH Spectra ST: Shade 5
The first universal composite that offers ONE SHADE to match any patient and almost any case.
A Primer on Light and Color

What is color?

Color is nothing more than the wavelength of light that reaches our eyes.

From violet, which is the smallest wavelength, to red, which is the largest, these wavelengths make up the visible spectrum of color that we can see. White light contains all wavelengths of color.
Human teeth fall exclusively in the red-to-yellow color space.
Two Types of Color Producing Phenomenon

Chemical Color

Molecules of the material reflect particular wave lengths.

Chemical color is the most common form of color visible to us.

The chlorophyll in this plant, for instance, absorbs every wavelength of color except for green, which is reflected, so we see the plant as green.
Typical Composites Today

Rely on the chemical color of added dyes and pigments
Have specific shades for specific teeth
Some have limited shade-matching ability, but not much

Estelite Sigma Quick, for instance, is well known for its shade matching capabilities, but when a C3 shade of Estelite Sigma Quick is used to restore a C1 tooth, it doesn’t match well, as shown in the diagram below.
Two Types of Color Producing Phenomenon

Structural Color

Structure of the material amplifies or weakens different wave lengths. Structural color is rare.

The morpho butterfly to the right isn’t actually blue, but appears blue because of the way the microscopic structure of its wings interact with wavelengths of light.

The color visible on a soap bubble is produced by the film thicknesses of the bubble interacting with different wavelengths of light.

The color visible on a CD is produced by the the engravings on the disc interacting with different wavelengths of light.
OMNICHROMA is the first use of structural color in composite dentistry as the main color mechanism.

- No added dyes or pigments
- Fillers themselves generate red-to-yellow structural color, which combines with the color of the surrounding tooth.

Smart Chromatic Technology
OMNICHROMA
When spread out on black and white paper backgrounds, some filler materials can exhibit structural color, as seen in the colors visible below. White light reflected by the white background is very strong, which is why a structural color phenomenon is not visible on the white background.
Components
OMNICHROMA

Monomers
UDMA/TEGDMA
Filler loading
79wt% (68vol%)

Filler
Uniform sized supra-nano spherical filler
(260nm SiO2-ZrO2)
Round shaped composite filler
(including 260nm spherical SiO2-ZrO2)

SEM image of OMNICHROMA
(Magnified x5,000)
OMNICHROMA System

- Simplified inventory management
- Reduction of composite shades that only see incidental use
- Reduction of unused composite wastage
- Never be short stocked on a shade
Features & Indications
OMNICHROMA

Features:
- Unprecedented shade matching ability
- Shade matches both before and after bleaching
- High polishability inherited from ESTELITE
- Excellent physical-mechanical properties inherited from ESTELITE

Indications:
- Direct anterior and posterior restorations
- Direct bonded composite veneer
- Diastema closure
- Repair of porcelain/composite
Clinical Procedure
OMNICHROMA

Posterior

Preparation: Add chamfers to help eliminate margin visibility and aid shade matching.
Apply bonding agent.
Fill with OMNICHROMA.
Light cure. (Curing time varies depending on intensity of curing light.)
Finish and polish.

Anterior

Bevel

Preparation: Add bevels to help eliminate margin visibility and aid shade matching.
Apply bonding agent and fill OMNICHROMA.
Light cure. (Curing time varies depending on intensity of curing light.)
Finish and polish.

Note: OMNICHROMA appears opaque-white before curing, allowing for higher visibility and easier placement. It becomes the perfect match to the surrounding tooth after curing.
OMNICHROMA appears opaque-white before curing, and then become the perfect match to the surrounding tooth after curing.
In large Class III and IV cases, shade-matching interference may occur due to a lack of surrounding dentition.

OMNICHROMA BLOCKER overcomes this limitation by working as a supplementary material to reduce shade-matching interference.

Can also mask slight staining or be used to reconstruct a highly opaque tooth.
How to Use OMNICHROMA Blocker

OMNICHROMA BLOCKER is used as a lingual layer for large Class III or Class IV restorations with limited surrounding dentition. After applying and curing OMNICHROMA BLOCKER, OMNICHROMA is applied as the second layer.

- **Preparation and apply bonding:** Add chamfers or bevels to help eliminate margins and aid shade matching.
- **Apply BLOCKER as a lingual layer.** Thickness of the lingual layer can vary, but 0.5mm is illustrated as a guide. Cure 20 secs.
- **Apply OMNICHROMA as a secondary layer.** Note that OMNICHROMA is opaque white before curing. It blends naturally after curing.
- **Light cure for 20 secs, finish, and polish.**
Twenty-five doctors completed a total of 841 cases in examining OMNICHROMA.

92.7% rated good or excellent for total average among all shades & classes.
OMNICHROMA Case Images
Class II

Before

After

Case image courtesy of Dr. James Chae, Diamond Bar, CA
OMNICHROMA Case Images
Class II

Before

After

Case image courtesy of Dr. James Chae, Diamond Bar, CA
OMNICHROMA Case Images
Class V– D4

Before

After

Case image courtesy of Dr. Peter Auster, Pomona, NY
OMNICHROMA Case Images

Class V – Light Shade

Before

After

Case image courtesy of Dr. Peter Auster, Pomona, NY
OMNICHROMA Case Images
Class III

Before

After

Case image courtesy of Dr. Peter Auster, Pomona, NY
OMNICHROMA Case Images
Class IV with Blocker

Before

After

Case image courtesy of Dr. James Chae, Diamond Bar, CA
The results show that both TOKUYAMA’s ESTELITE SIGMA QUICK & OMNICHRROMA produce extremely high glossiness.

Polishing test using Sof-Lex™ Superfine* for 60second
Excellent Esthetic Properties
High Polishability

Polishing test using Sof-Lex™ Superfine* for 60 second

Fig. Relationship of glossiness to polishing time

Source: Tokuyama Dental R&D
The flexural strength of OMNICHROMA is of average or higher levels among commercially available resin composites, ensuring clinically acceptable results.

* in accordance with ISO4049

Three-point bending test*

| Composite |

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Source: Tokuyama Dental R&D
Excellent Physical Properties
Strength

The compressive strength of OMNICROMA is higher than most commercially available resin composites, ensuring clinically acceptable results.

Compressive strength test

Source: Tokuyama Dental R&D
OMNICHROMA exhibits an excellent balance between volume loss of the composite resin and wear of the human tooth. OMNICHROMA is a composite resin that is less likely to abrade opposing teeth while not easily becoming abraded itself, similar to ESTELITE SIGMA QUICK.

Excellent Physical Properties
Lower Wear and Abrasion

**Wear resistance (50,000 cycle)**

- **Composite wear** (decrease of composite volume) (mm$^3$)
- **Opposing tooth abrasion** (abrasion depth of opposing teeth) (μm)

Source: Tokuyama Dental R&D
Compared to many other commercially available resin composites, OMNICHROMA exhibits low polymerization shrinkage.
Excellent Physical Properties
Staining Resistance (Color Stability)

The extent of staining for OMNICHROMA after soaking in coffee was relatively low among commercially available resin composites, meaning OMNICHROMA will resist staining for the life of the restoration.

Coffee staining test

Composites were immersed in 7.4wt% coffee solution (Nescafe Excella, Nestle) for 24 hours at 80°C.

Color change ($\Delta E^*$) between before and after was measured.
OMNICHROMA offers ample working time for almost all restorative procedures.
Typically, low results in color and translucency change are considered desirable traits. However, as OMNICHROMA is a single shade composite with wide shade-matching ability that appears opaque-white before curing, a large change in color and translucency is measured. Because of the nature of OMNICHROMA, this is a positive result.
Excellent Physical Properties
Radiopacity

The radiopacity of OMNICHROMA is average and sufficient for prognosis observations.

Source: Tokuyama Dental R&D
OMNICHROMA
Pricing

$99.99
4g

$103.99
0.2gX20