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

36

Premise

34

Estelite Omega

11

One-layer system

Estelite Sigma Quick

20

Clearfil Majesty ES-2 Classic

18

TPH Spectra

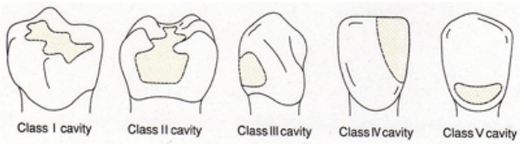
26+7

TPH Spectra ST

5

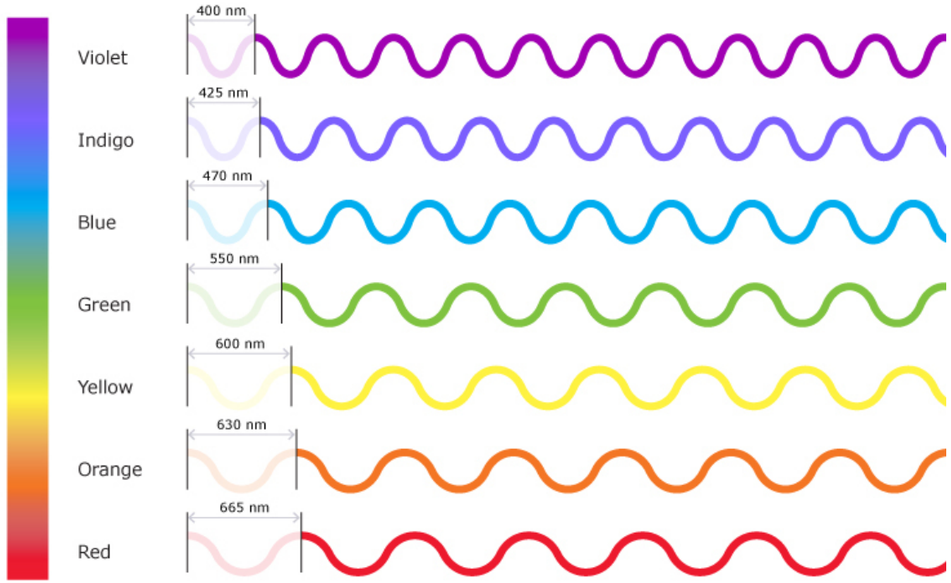
omniCHROMA

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?



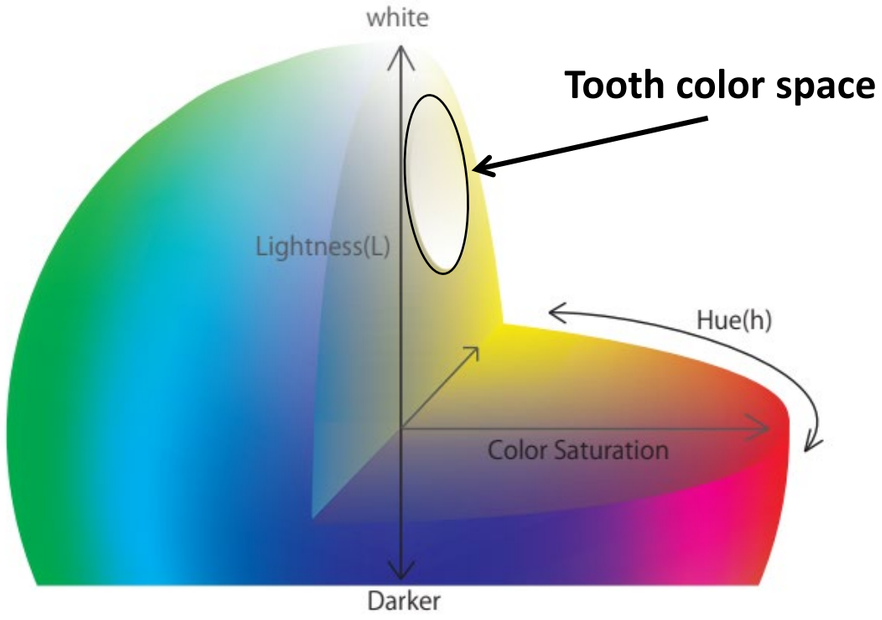
Color is nothing more than the wavelength of light that reaches our eyes.

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.

A Primer on Light and Color

Color and teeth

Human teeth fall exclusively in the red-to-yellow color space.



Two Types of Color Producing Phenomenon

Chemical Color

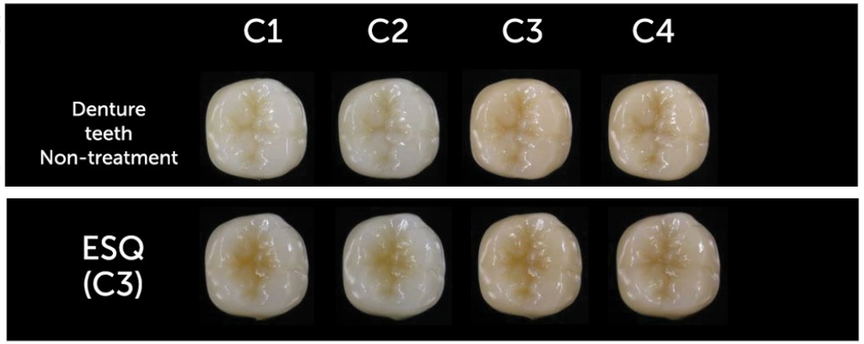
Molecules of the material reflect particular wave lengths.

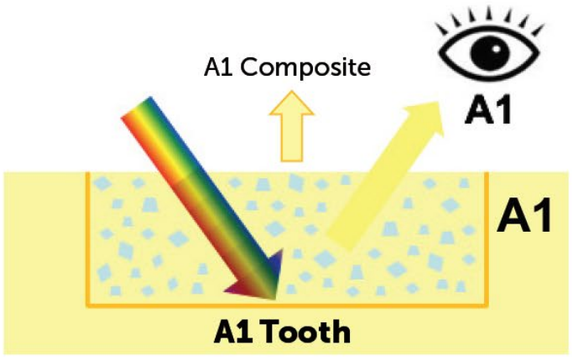
Chemical color is the most common form of color visible to us.

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.

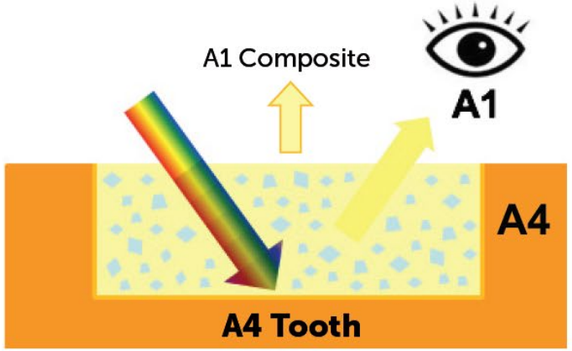
Typical Composites Today
Chemical Color

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





Excellent color match



Poor color match

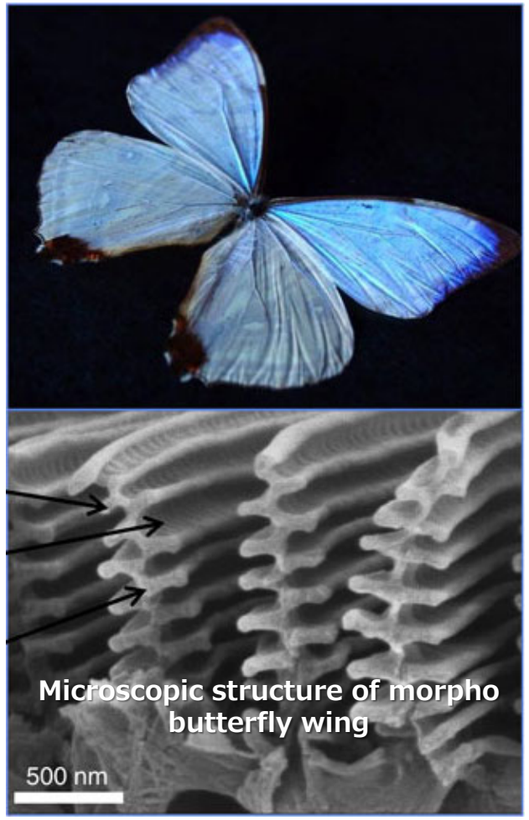
Estelite Sigma Quick, for instance, is well known for its shade matching capabilities, but when a C3 shade of Estelite Sigma Quick is used to restore a C1 tooth, it doesn't match well, as shown in the diagram below.

Two Types of Color Producing Phenomenon

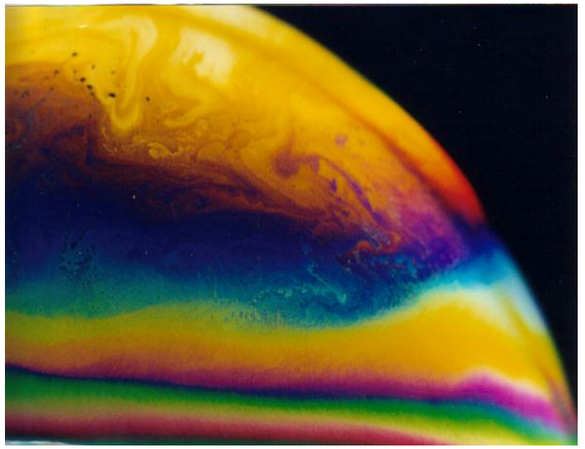
Structural Color

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.



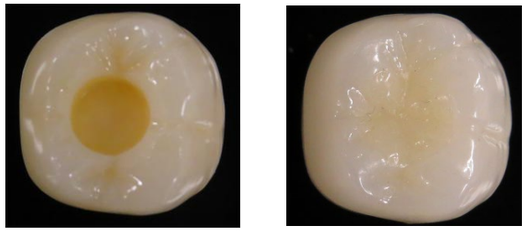
The color visible on a soap bubble is produced by the film thicknesses of the bubble interacting with different wavelengths of light.

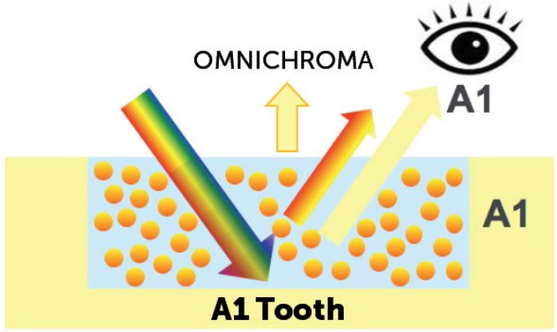


The color visible on a CD is produced by the the engravings on the disc interacting with different wavelengths of light.

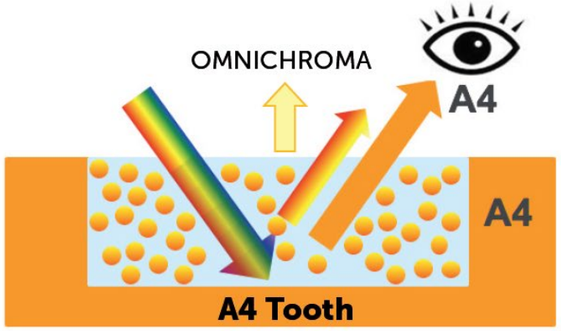
Smart Chromatic Technology
OMNICHROMA

- 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

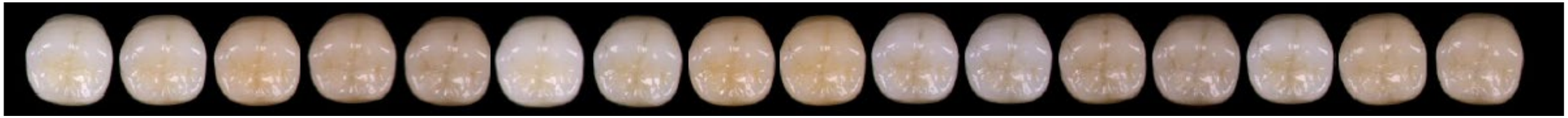




Excellent color match

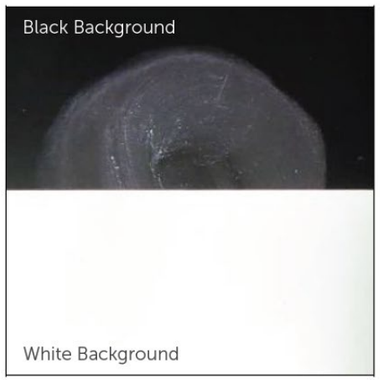


Excellent color match



Relationship Between Particle Size & Structural Color
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.



Red to yellow color visible

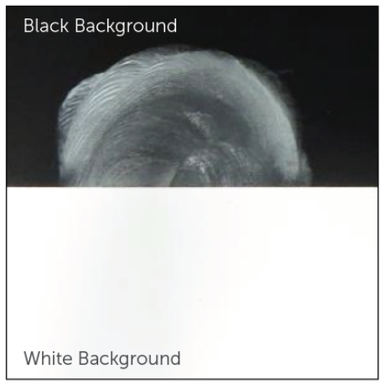
No color visible

260nm spherical filler powder

Blue color visible

No color visible

180nm spherical filler powder



White color visible

No color visible

4μm irregular shaped filler powder

No color visible

No color visible

Fumed silica (<50nm) powder

Components
OMNICHROMA

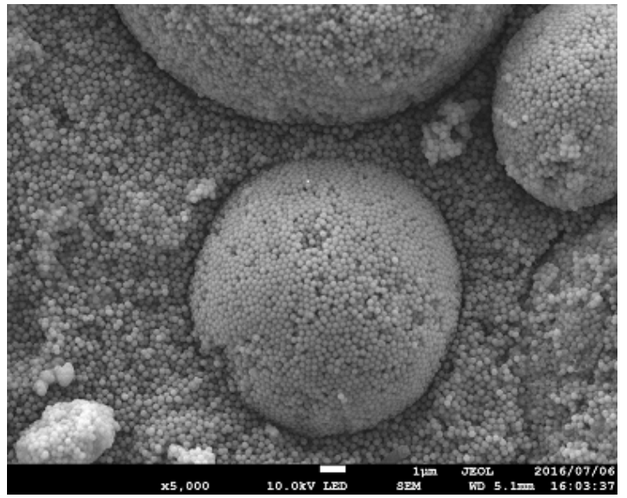
Filler
Uniform sized supra-nano spherical filler
(260nm SiO2-ZrO2)
Round shaped composite filler
(including 260nm spherical SiO2-ZrO2)

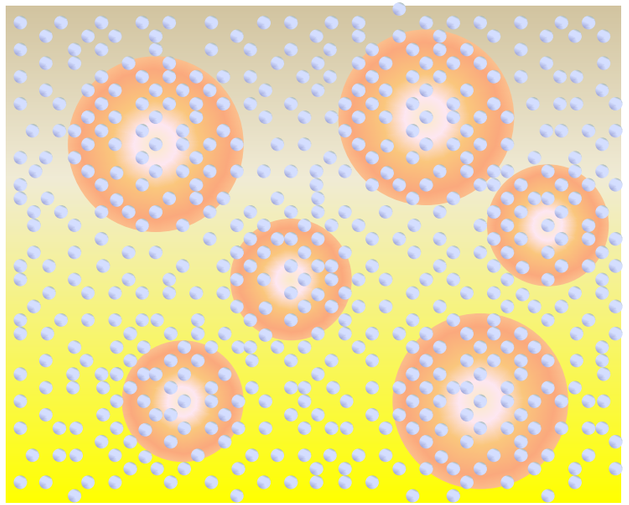
Monomers
UDMA/TEGDMA

Filler loading

79wt% (68vol%)

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

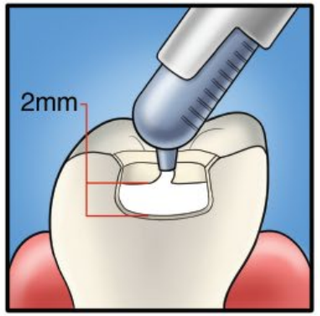
Indications:
- Direct anterior and posterior restorations
- Direct bonded composite veneer
- Diastema closure
- Repair of porcelain/composite

Clinical Procedure
OMNICHROMA

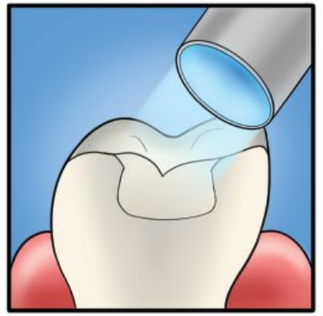
Posterior

Preparation:
Add chamfers to help eliminate margin visibility and aid shade matching.

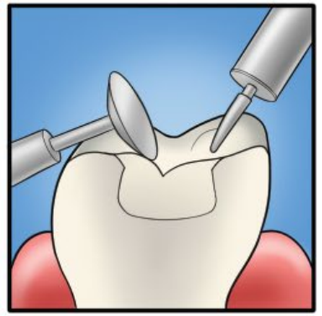
Apply bonding agent.



Fill with OMNICHROMA.

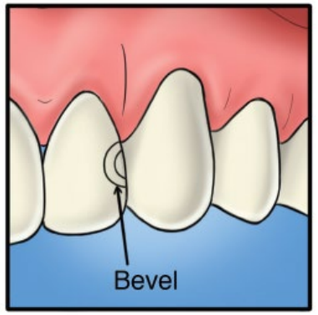


Light cure.
(Curing time varies depending on intensity of curing light.)

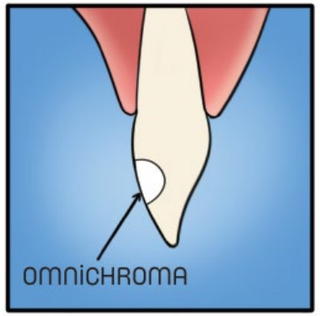


Finish and polish.

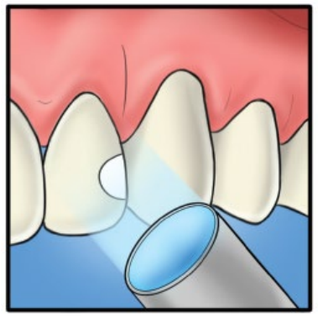
Anterior



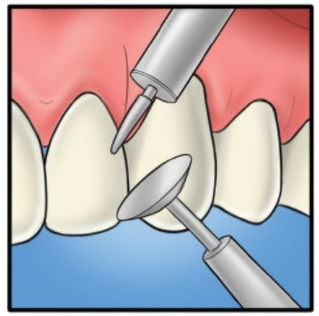
Preparation: Add bevels to help eliminate margin visibility and aid shade matching.



Apply bonding agent and fill OMNICHROMA.



Light cure.
(Curing time varies depending on intensity of curing light.)

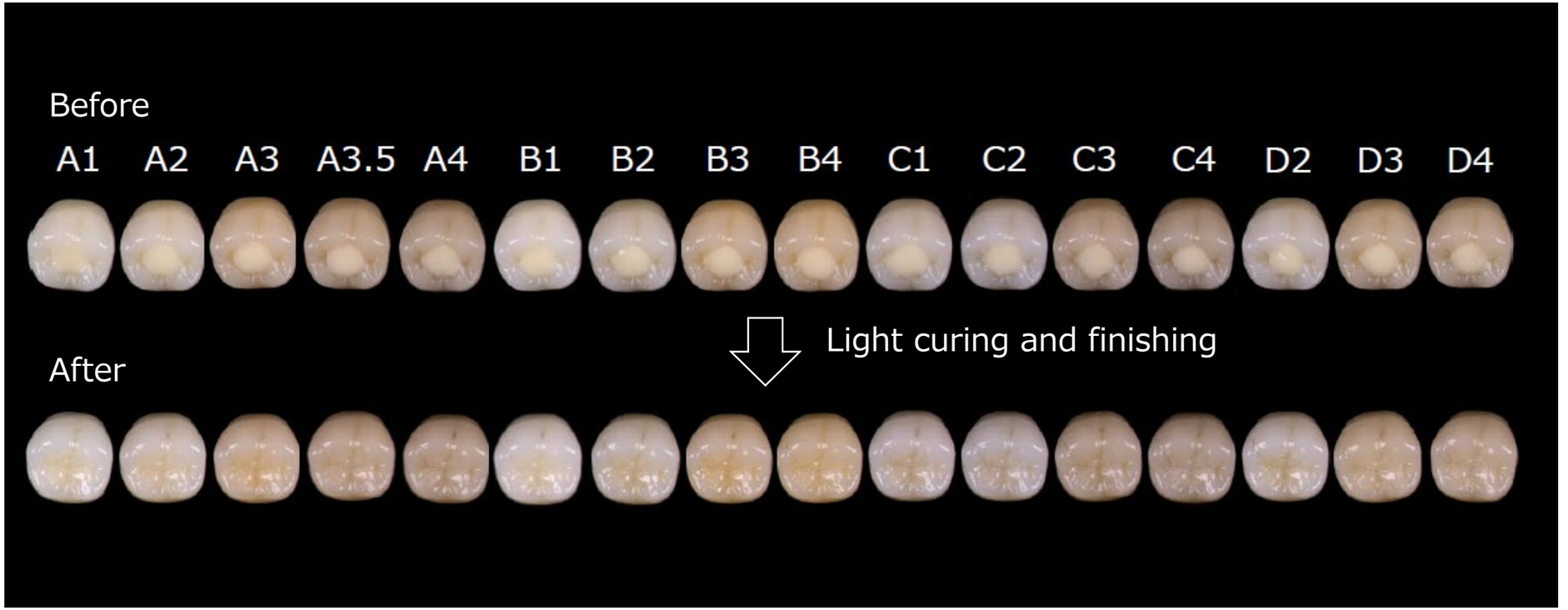


Finish and polish.

Tokuyama

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.

Before & After
OMNICHROMA



OMNICHROMA appears opaque-white before curing, and then become the perfect match to the surrounding tooth after curing.

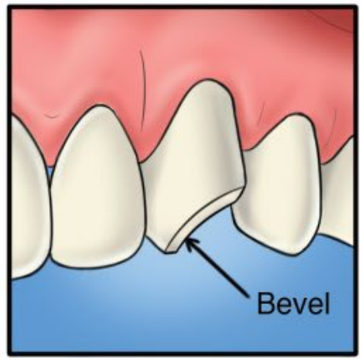
Large Anterior Cases
OMNICHROMA

- 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

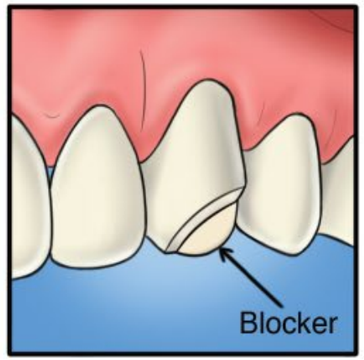
How to Use OMNICHROMA Blocker

OMNICHROMA

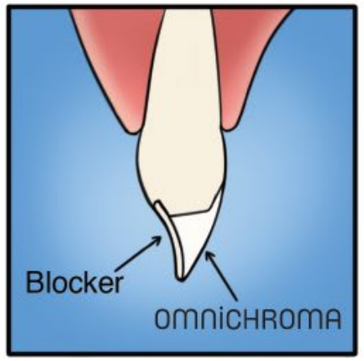
OMNICHROMA BLOCKER is used as a lingual layer for large Class III or Class IV restorations with limited surrounding dentition. After applying and curing OMNICHROMA BLOCKER, OMNICHROMA is applied as the second layer.



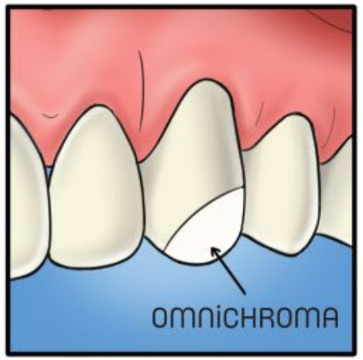
Preparation and apply bonding: Add chamfers or bevels to help eliminate margins and aid shade matching.



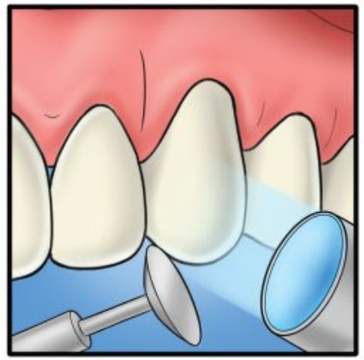
Apply BLOCKER as a lingual layer. Thickness of the lingual layer can vary, but 0.5mm is illustrated as a guide. Cure 20 secs.



Apply OMNICHROMA as a secondary layer.



Note that OMNICHROMA is opaque white before curing. It blends naturally after curing.

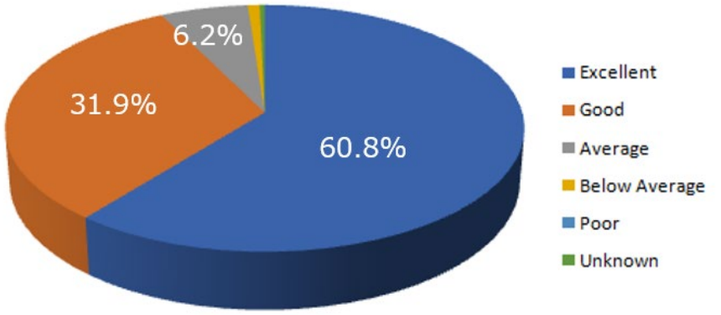


Light cure for 20 secs, finish, and polish

Clinical Evaluations
OMNICHROMA

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.



Color Matching Ratings

Excellent	511	60.8%
Good	268	31.9%
Average	52	6.2%
Below Ave	7	0.8%
Poor	0	0.0%
Unknown	3	0.4%
Total	841	

	Polishability	Stability under Ambient Light	Handling
Excellent	15	11	13
Good	8	12	11
Average	0	0	1
Fair	0	0	0
Poor	0	0	0
Blank	2	2	0

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

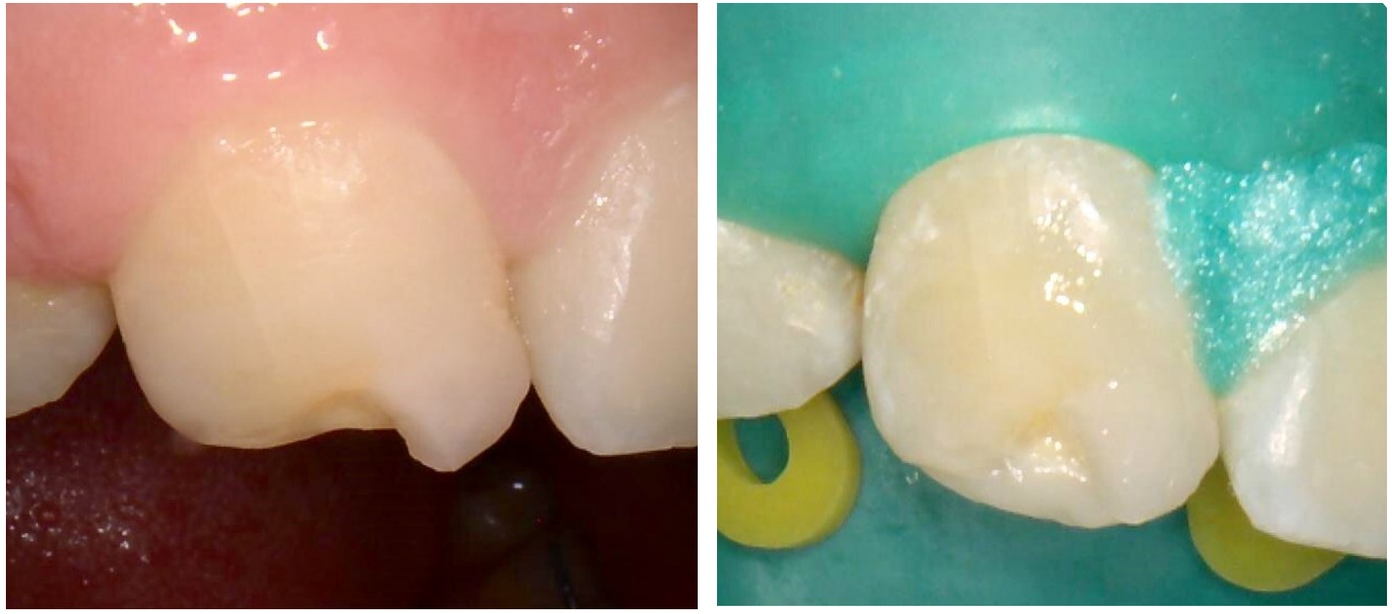
After

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

Excellent Esthetic Properties
High Polishability

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

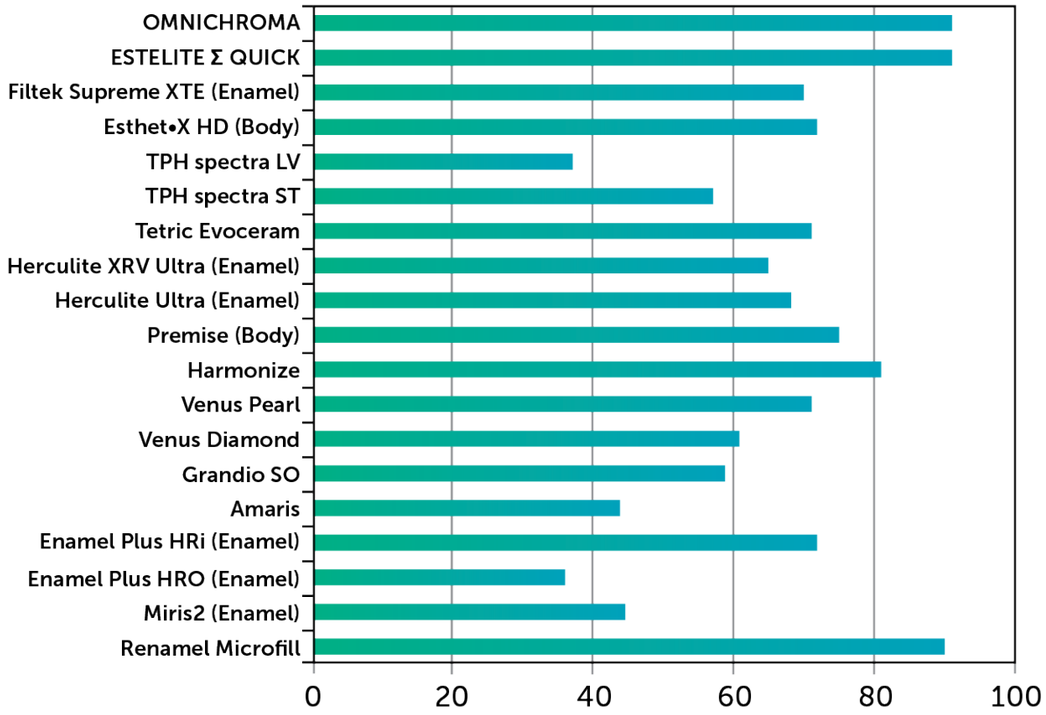
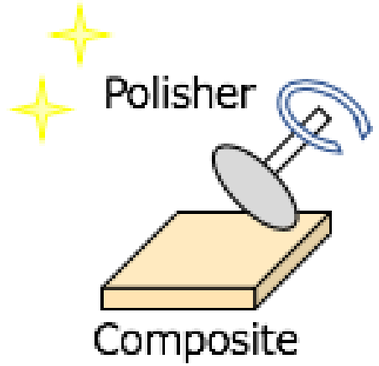


Fig. Surface Glossiness



* 3M-ESPE

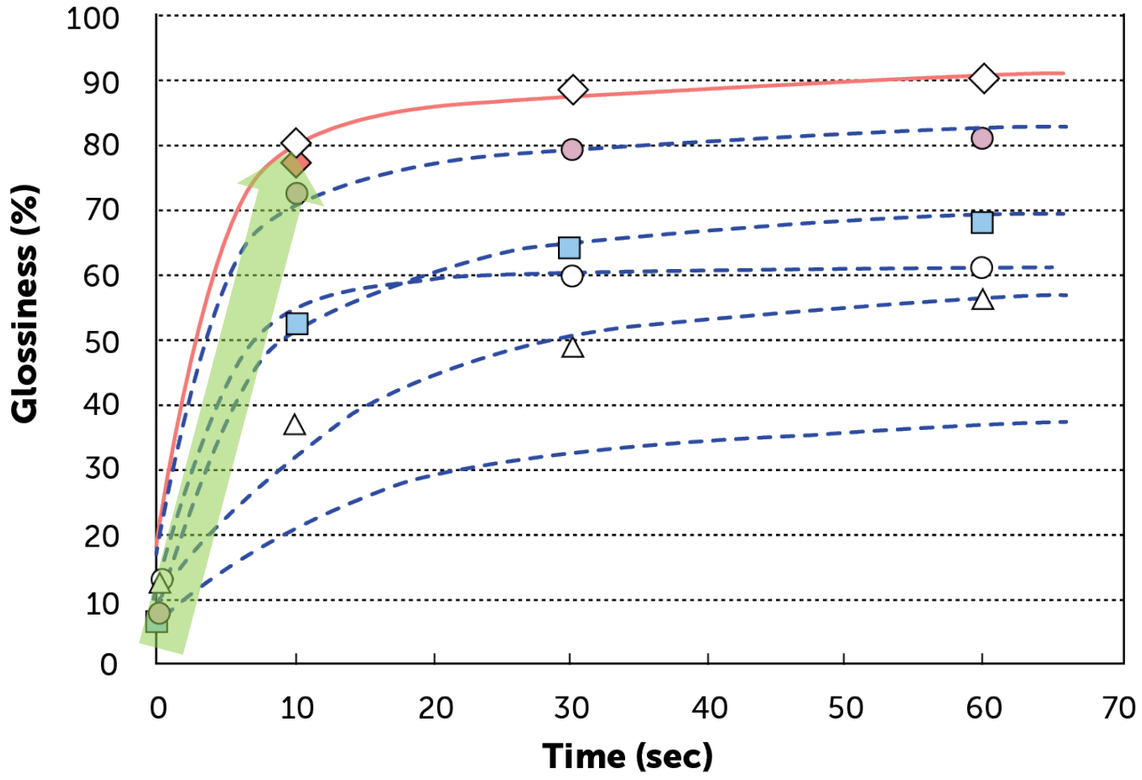
The results show that both TOKUYAMA's ESTELITE SIGMA QUICK & OMNICHROMA produce extremely high glossiness.

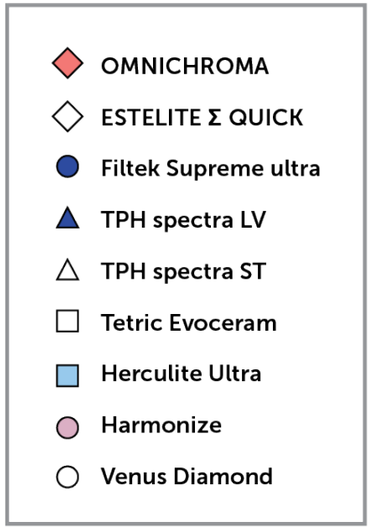
Source: Tokuyama Dental R&D

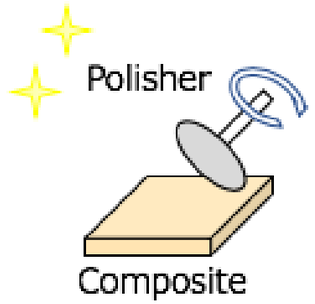
Excellent Esthetic Properties

High Polishability

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







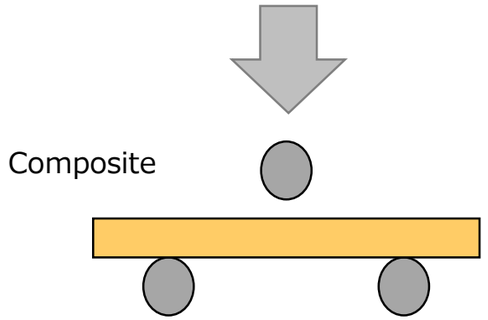
* 3M-ESPE

Fig. Relationship of glossiness to polishing time

Source: Tokuyama Dental R&D

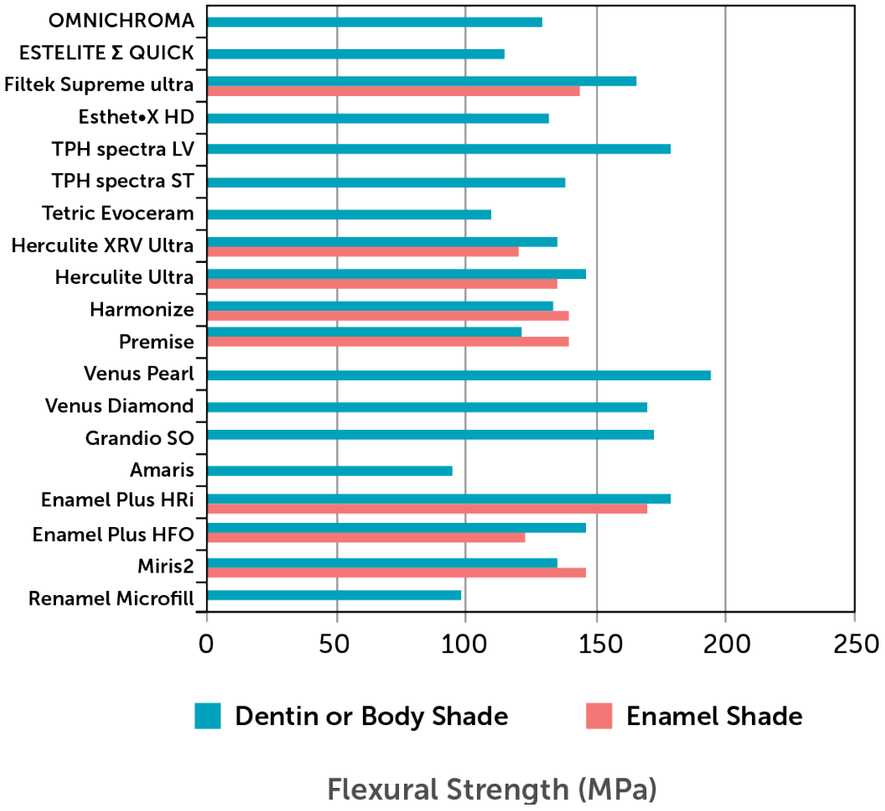
Excellent Physical Properties
Strength

The flexural strength of OMNICHROMA is of average or higher levels among commercially available resin composites, ensuring clinically acceptable results.



* in accordance with ISO4049

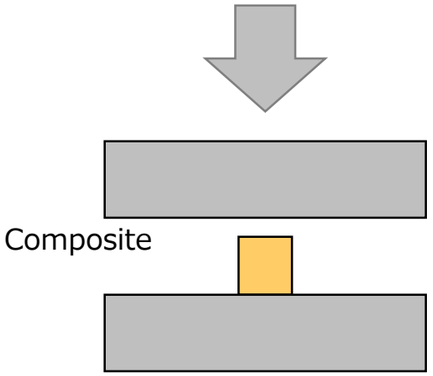
Three-point bending test*



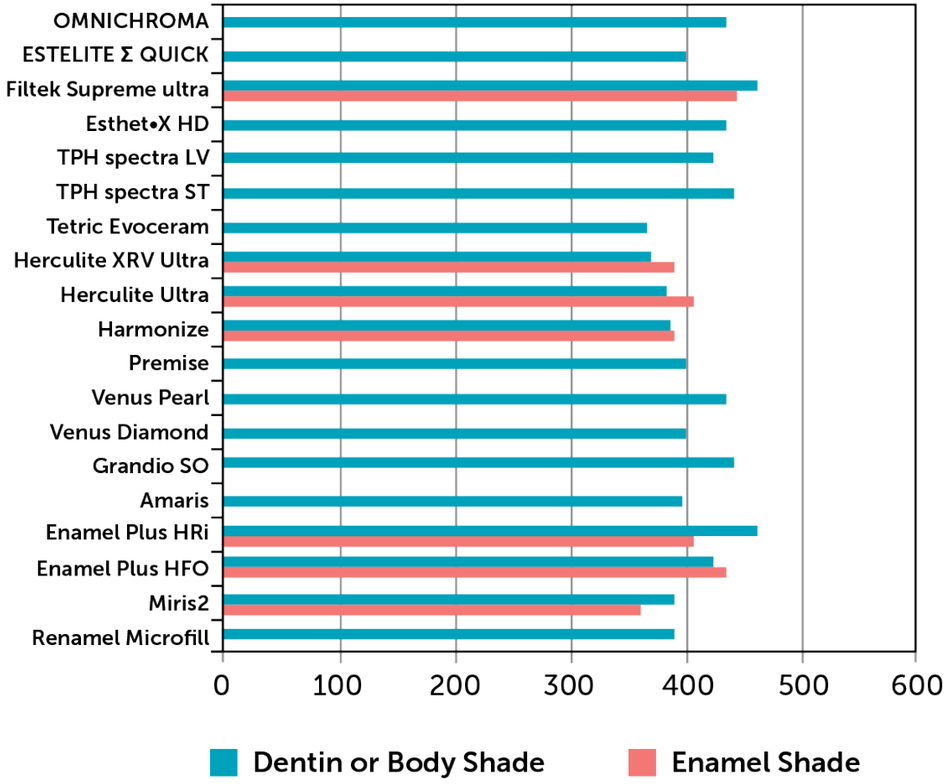
Source: Tokuyama Dental R&D

Excellent Physical Properties
Strength

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



Compressive strength test

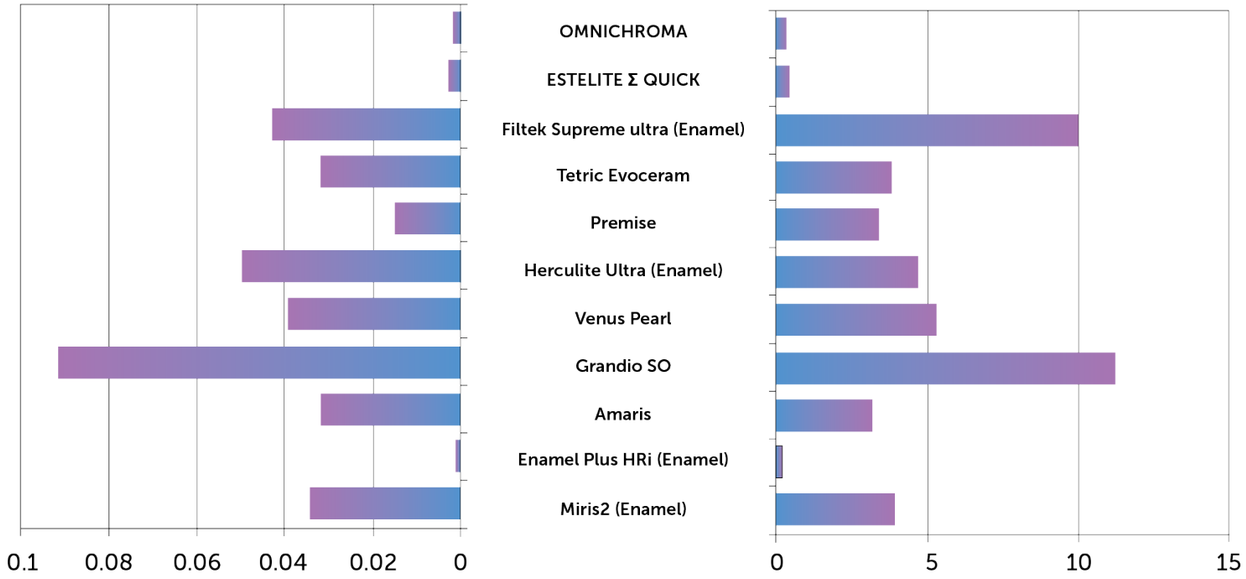


Source: Tokuyama Dental R&D

Excellent Physical Properties

Lower Wear and Abrasion

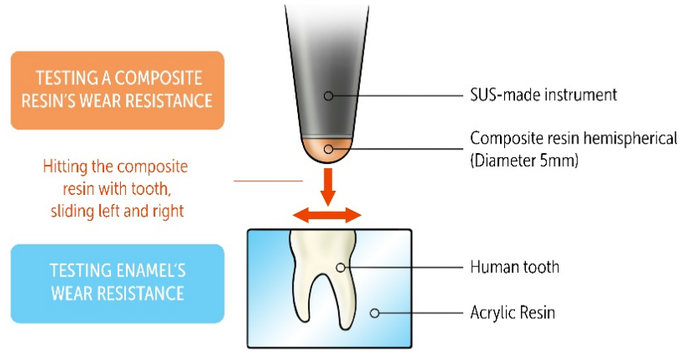
OMNICHROMA exhibits an excellent balance between volume loss of the composite resin and wear of the human tooth. OMNICHROMA is a composite resin that is less likely to abrade opposing teeth while not easily becoming abraded itself, similar to ESTELITE SIGMA QUICK.



Composite wear
(decrease of composite volume) (mm^3)

Opposing tooth abrasion
(abrasion depth of opposing teeth) (μm)

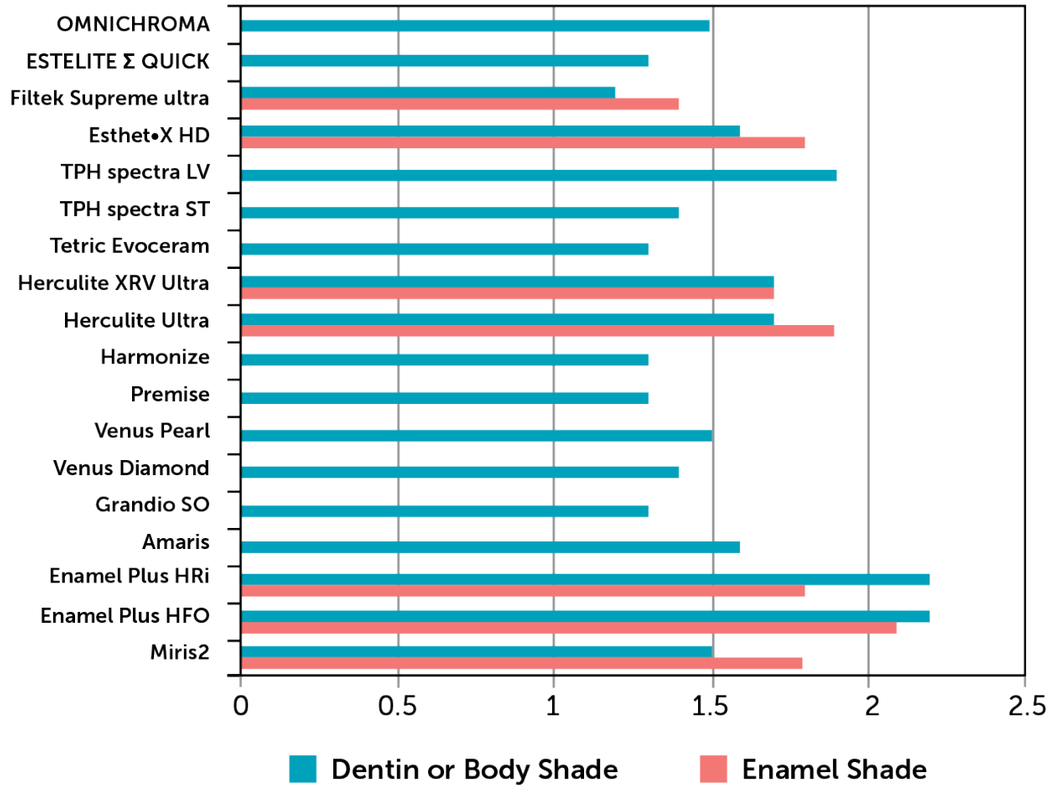
Wear resistance (50,000 cycle)



Source: Tokuyama Dental R&D

Excellent Physical Properties

Lower Shrinkage



Compared to many other commercially available resin composites, OMNICHROMA exhibits low polymerization shrinkage.

Source: Tokuyama Dental R&D

Excellent Physical Properties

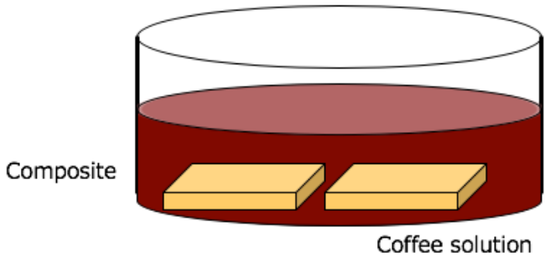
Staining Resistance (Color Stability)

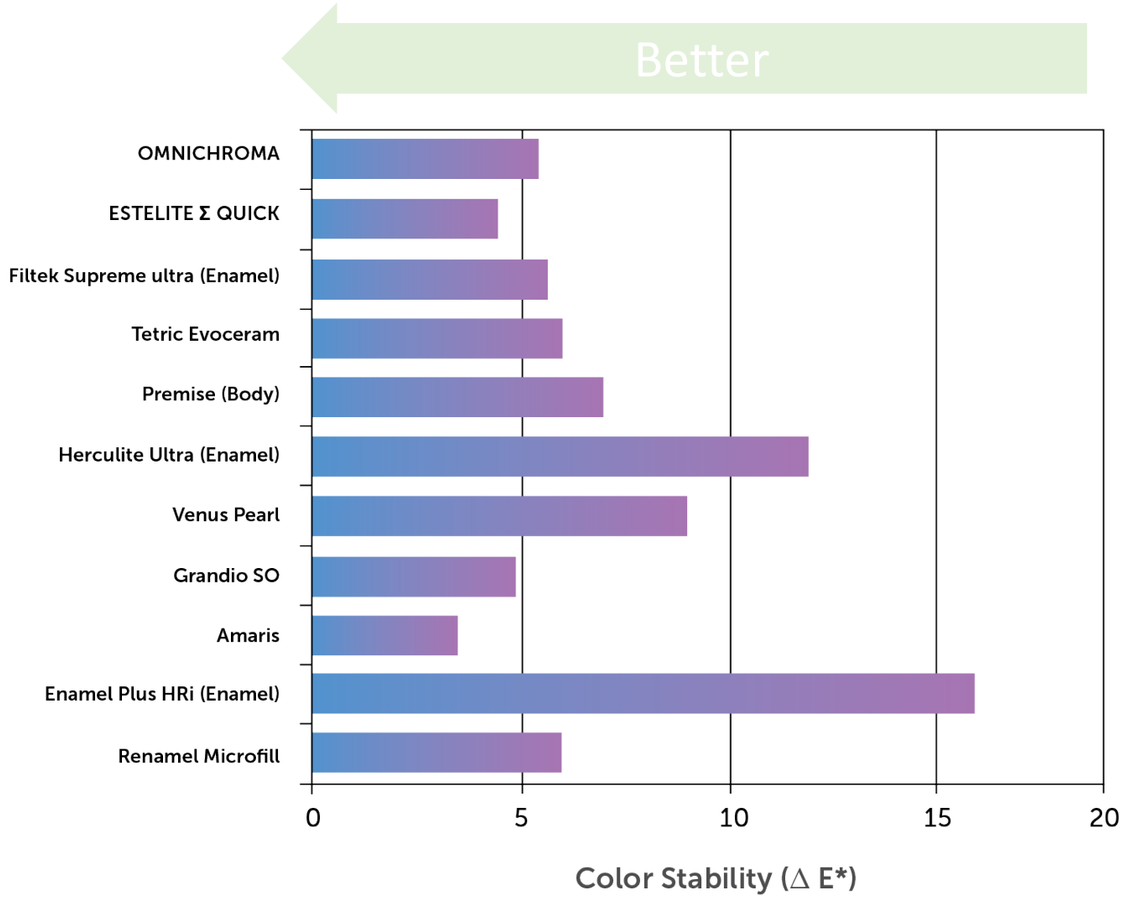
The extent of staining for OMNICHROMA after soaking in coffee was relatively low among commercially available resin composites, meaning OMNICHROMA will resist staining for the life of the restoration.

Coffee staining test

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

Color change (ΔE*) between before and after was measured.

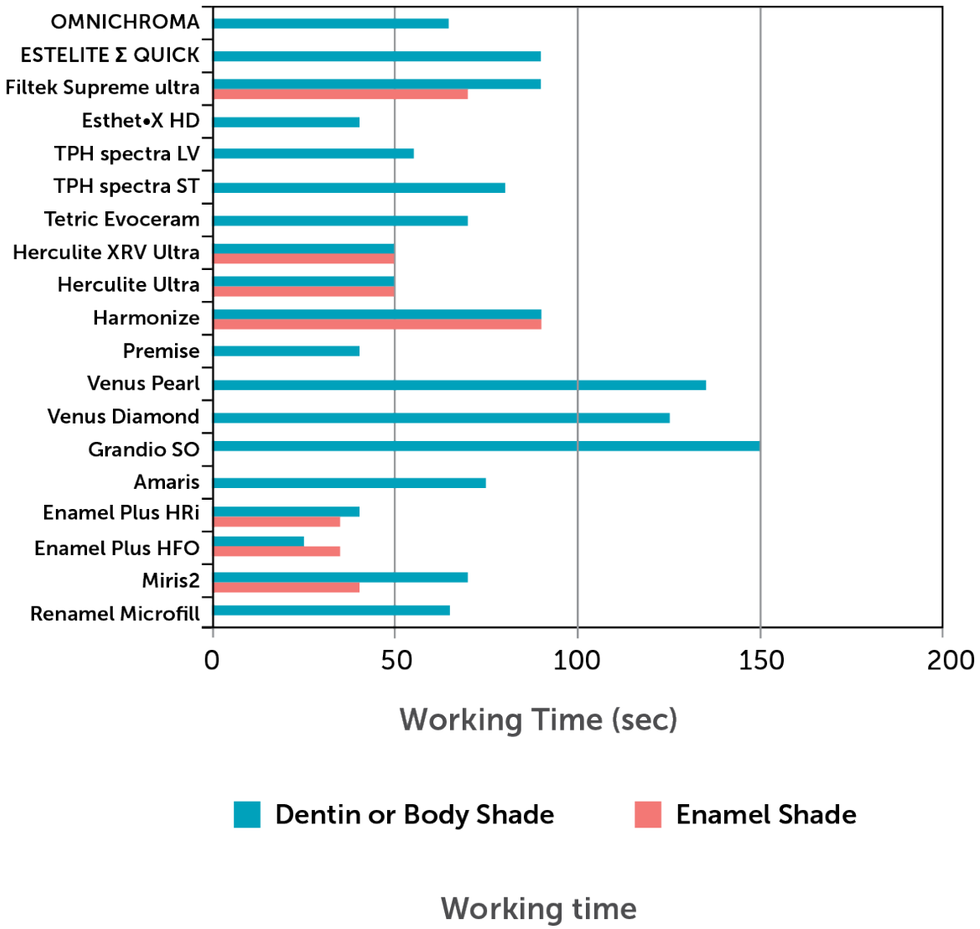




Source: Tokuyama Dental R&D

Excellent Physical Properties
Working Time

In accordance with ISO 4049



OMNICHROMA offers ample working time for almost all restorative procedures.

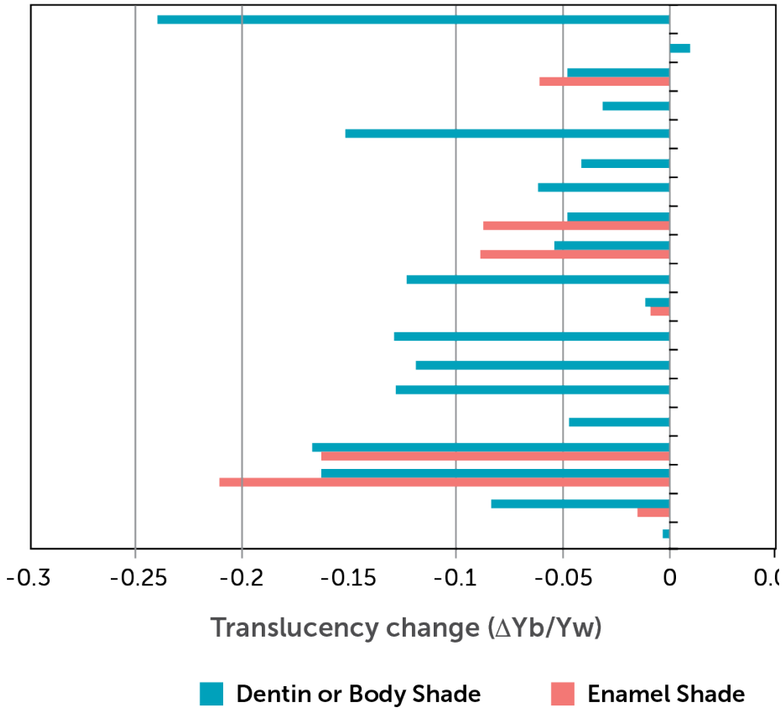
Source: Tokuyama Dental R&D

Excellent Physical Properties

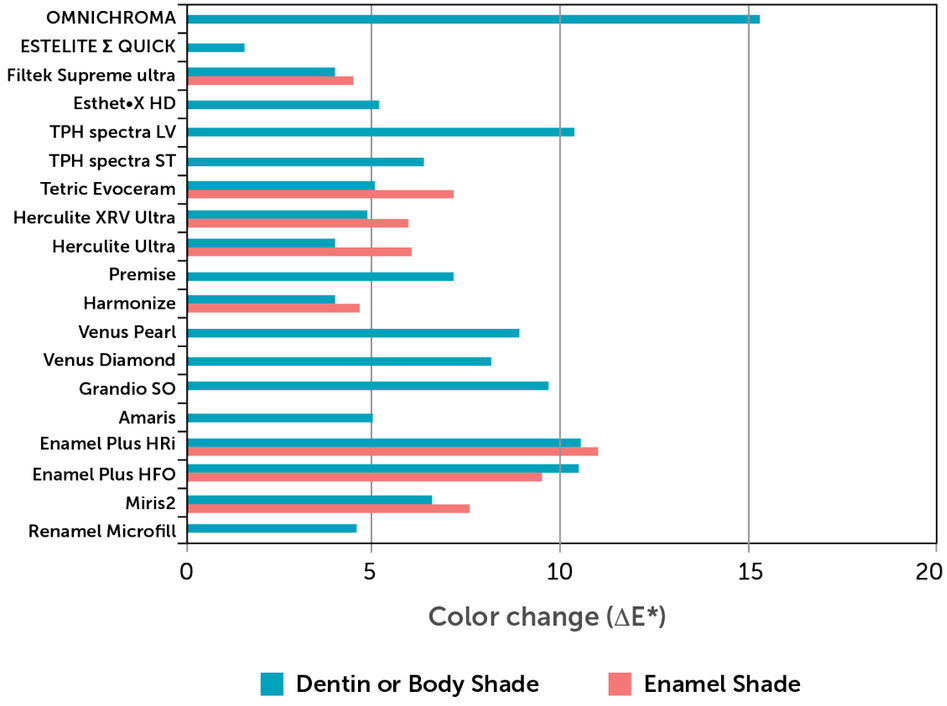
Polymerization

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.

Color and Translucency Change Before and After Polymerization



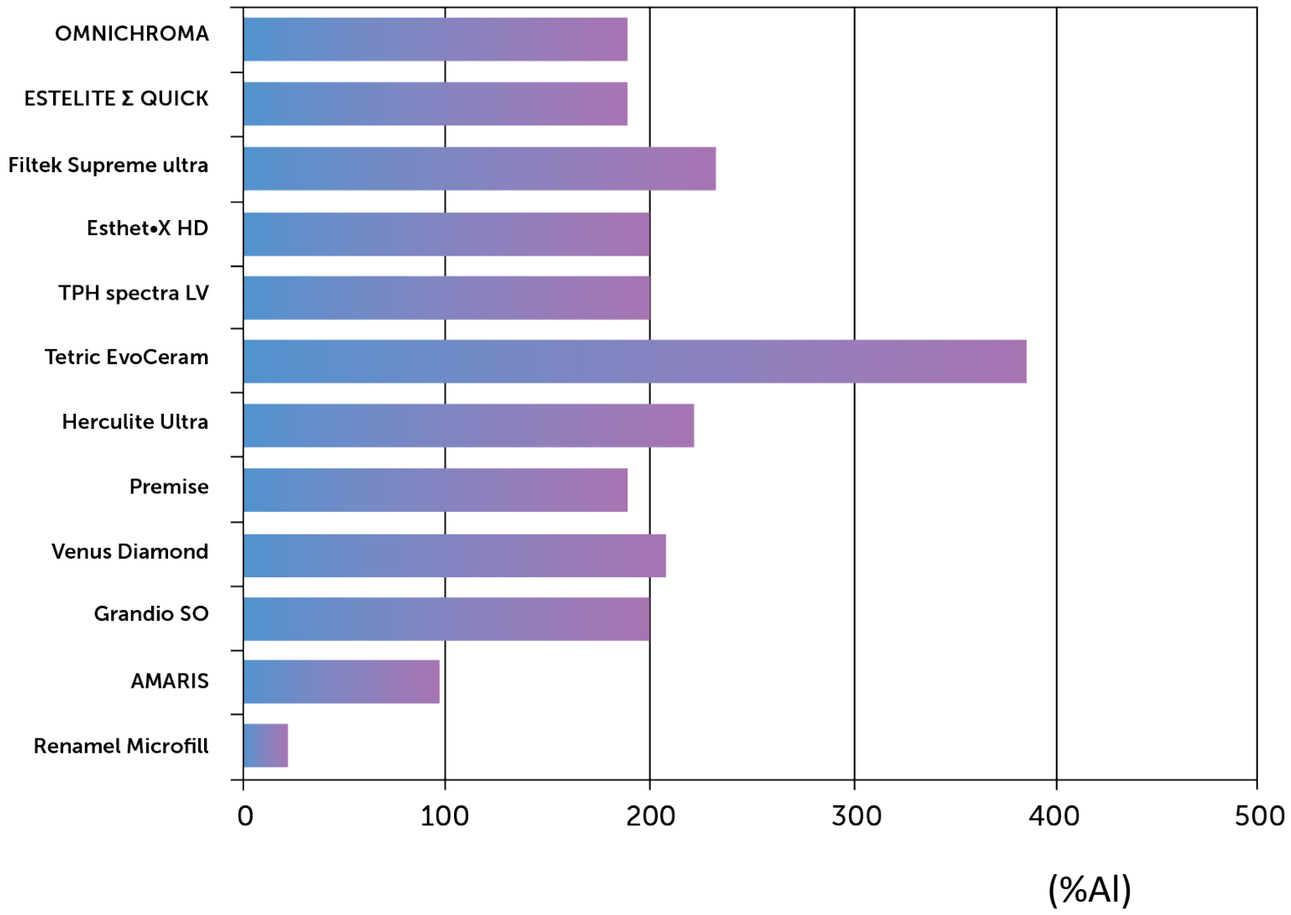
Change of translucency before and after polymerizatio



Change of color before and after polymerization

Source: Tokuyama Dental R&D

Excellent Physical Properties
Radiopacity



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

Source: Tokuyama Dental R&D

OMNICHROMA

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