

Dental **PRODUCT
SHOPPER**

JUST ONE 'SHADE' with ENDLESS POSSIBILITIES

Tokuyama Dental's breakthrough universal composite, OMNICHROMA, delivers on promise to esthetically match every patient.



 **Tokuyama**



Not 'Just Another' Composite

omni**CHROMA** from Tokuyama Dental
can be a game-changer in daily efficiency

Groundbreaking. Game-changing. Breakthrough. These are all words that have been used to describe new restorative products. However, many dentists sigh at the thought that a restorative material, like a universal composite, can make that much of an impact on their daily routine.

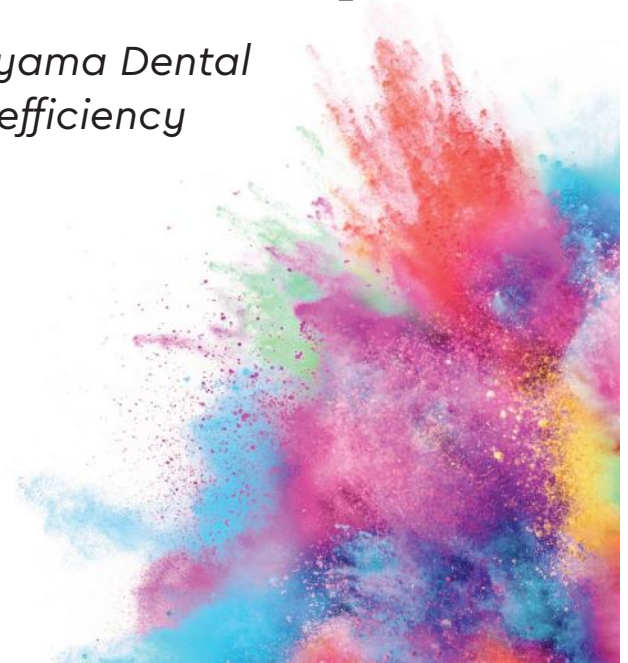
"How many times in my 30-plus years of practicing have I heard the promise of one-shade-fits-all? A universal-shade composite has always been the holy grail for dental composites," Dr. Brian Gray of Washington, D.C., told *Dental Product Shopper*.

So when Dr. Gray was told that there was a composite, OMNICHROMA by Tokuyama Dental, that could match any tooth, from A1 to D4, and he'd only have to inventory a single material, he was less than optimistic. If it were true, he'd be able to eliminate the tedious and often frustrating task of matching shades for direct restorations.

Dr. Gray was intrigued that the company behind OMNICHROMA was Tokuyama Dental, a manufacturer known for, what he calls, "continuous and meticulous" R&D and an innovative approach to problem-solving.

"They offer consistently high-quality materials and have typically been willing to make adjustments in response to user feedback," Dr. Gray explained. "So I agreed to give OMNICHROMA a try before it was brought to market." The results were astounding—the Holy Grail had been attained.

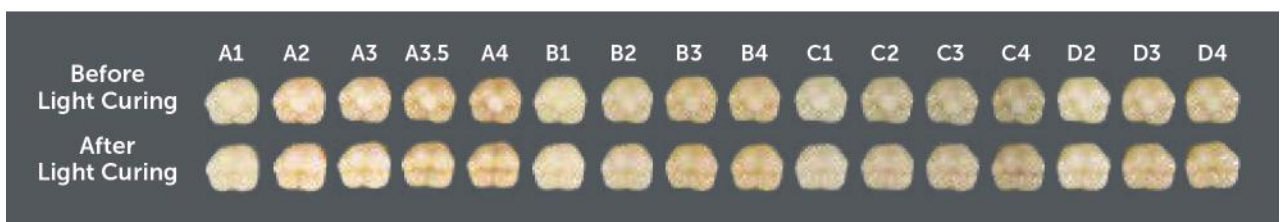
Dr. Kevin Brown of Seattle, WA, had a similar experience. Known as a "dental nerd" to his team,



Dr. Brown put OMNICHROMA through rigorous testing before trying it out on patients.

"I was initially skeptical of its universal matching claims, assuming it would turn out to be gray from over-translucency, like other composites that have come with similar assertions," Dr. Brown recalled. However, once it cured, the material transformed and its optical properties absorbed the surrounding tooth color. "In short, my initial reaction was disbelief," he said. "It's as though it had magic pixie dust in its chemistry!"

After trying OMNICHROMA, the dental assistants at Dr. Randy Halihan's practice in Crystal Lake, IL, renamed it the 'magic composite' and the 'invisible composite' as it seemed to disappear right before their eyes after light-curing, as demonstrated in the various shades of teeth in the chart below.



INDICATIONS

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

FEATURES & BENEFITS

- Simplified inventory management
- Reduction of composite shades that only see incidental use
- Reduction of unused composite wastage
- Avoiding being short stocked on a particular shade

While magic is pretty neat, so are phenomena in physical science. That's what's really behind OMNICHROMA, a material that represents the culmination of 35 years of research and development.

How It Works

While most composites depend on chemical color from dyes and pigments to match the most common shades in teeth, OMNICHROMA can transform into an A1, D4, or any other shade of tooth. This is thanks to Tokuyama Dental's use of structural color in a process called "Smart Chromatic Technology." As light passes through the fillers, they reflect the red-to-yellow range of colors found in all teeth. These colors then combine with the color of the surrounding tooth, allowing for unprecedented color-matching ability.

"The science behind OMNICHROMA gives me confidence when placing a composite, because I know I'm getting ideal shade matching in a product that offers excellent wear characteristics, low polymerization shrinkage, high stain resistance, and high strength," said Dr. Sia Abai of Tustin, CA.

Practical Benefits

OMNICHROMA's color-matching formulation is not its only "wow" factor. Dentists are also impressed by its ability to reduce shade selection, reduce unused composite waste, and simplify inventory management.

"I despise looking through my dental



"I quickly saw how beneficial this product could be with my patient cases," said Dr. Halihan. "To produce a one-shade composite system capable of matching all tooth shades is extremely forward thinking, and will benefit the end product and ultimately an overall satisfied patient."

materials and finding something that has barely been used and is now expired," said Dr. Pamela Maragliano-Muniz of Salem, MA. "OMNICHROMA, a one-shade composite, can improve a dental practice because it greatly reduces the amount of inventory that has to be maintained in the office. Since OMNICHROMA can be used in nearly every direct restorative clinical situation, it is unlikely that this material will be wasted."

Dr. Brown adds that OMNICHROMA not only simplifies the restorative procedure by removing the guesswork in shade selection, but also simplifies the ongoing expense and tracking of inventory of a standard composite. "We are practicing dentistry in a challenging time, with insurance reimbursements continually tumbling and overhead costs rising almost daily. To have the ability to stock one shade of composite for the majority of cases removes a huge burden," he said.

KEY CHARACTERISTICS OF OMNICHROMA

- 1. Shade-Matching** – single shade of composite matches any smile from A1 to D4 in just one application
- 2. Esthetic** – produces extremely glossy results and maintains its cured color very well, resisting the effects of staining on its appearance
- 3. Minimal Wear** – excels in minimizing wear in both the composite itself and in opposing dentition, resulting in long-lasting restorations
- 4. High Strength** – exhibits compressive and flexural strength equal to or exceeding that of other commercially available composites, assuring dentists that patients can bite with confidence

THE SCIENCE BEHIND

SMART CHROMATIC TECHNOLOGY

What we perceive as "color" is really nothing more than wavelengths of light that reach 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. There's also white light, which is not a color but contains all wavelengths of color. Human teeth fall exclusively in the red-to-yellow color space, as seen in the shade diagram below.

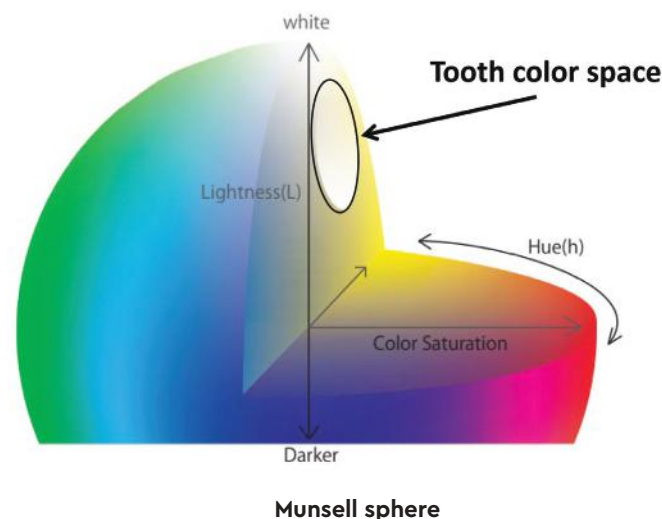
There are two color-producing phenomena, which relate to teeth shading:

1. CHEMICAL COLOR is the most common form of visible color and results when molecules of the material reflect particular wavelengths. Added dyes and pigments, including those found in many composites, provide chemical color. Most composites today require multiple shades to match every smile. They depend on the color of red and yellow dyes added to the resin material to emulate tooth shades. This means that dentists must keep a large inventory of different composites to accommodate a variety of patients.

2. STRUCTURAL COLOR occurs when different wavelengths of light are amplified or weakened by the structure of a material itself, expressing colors other than what the material may actually be. Structural color is rare, and the results can be stunning. We see examples in nature, from morpho butterflies to peacocks, as well as in soap bubble film and CD surfaces.

Tokuyama Dental has introduced OMNICHROMA as the first use of structural color in composite dentistry as the main color mechanism, with no added dyes or pigments. The fillers themselves generate red-to-yellow structural color, which combines with the color of the surrounding tooth to produce a perfect match.

The "secret" of Tokuyama Dental's Smart Chromatic Technology is in the material components. OMNICHROMA is made with 260 nm spherical fillers, which are the exact size and shape needed to generate red-to-yellow color as ambient light passes through the composite. The red-to-yellow color generated by the spherical fillers combines with the reflected color of the patient's surrounding dentition, creating the ideal match from A1 to D4 and beyond.



A1-D4 range of tooth shades



Dr. Kevin Brown documents a Class V restoration on No. 11.

"In its uncured state, OMNICHROMA looked opaque white. Once cured, it somehow transformed, and its optical properties absorbed the surrounding tooth color," Dr. Kevin Brown described. When he first tried OMNICHROMA, he used the material on extracted teeth that were all in the shade range of A1 to A3, so he didn't know if it would work on lighter or darker shades. He finally had the opportunity to try OMNICHROMA on elderly patients with darker teeth in the A4+ and D4+ range.

"On the small-to-medium posterior restorations, it was perfect," Dr. Brown said. "On the larger Class II and III fillings, it was still very close, but the slight difference was only because there was minimal natural tooth structure that could provide the color absorption, and the old silver fillings had darkened the pulpal floor. On average-to-even-lighter teeth, the larger fillings still turn out amazing. It even disappears on crazy bleach-white teeth!"

Overall, Dr. Brown feels confident about OMNICHROMA's color-matching ability in a wide range of clinical situations, particularly on Class Vs. He frequently sees new patients with bucco-gingival fillings that are too light or too dark, or have a "weird grayness," he explains. Even if it extends from gingival to mid-facial, and if there is a natural color transition from A3.5 gingival to A2 mid-facial, OMNICHROMA will reflect that natural color transition.

In a series of case photos (left), Dr. Brown documents a Class V restoration on No. 11. The fillings show how OMNICHROMA changes color when set and how well it blends to reflect the natural color transition. Typically, Dr. Brown uses a polychromatic layering technique on anterior direct composites so he can layer OMNICHROMA to just shy of the final facial contour and cures. He then uses stained resins—white, blue, and tan—to add any incisal characterization needed to match the rest of the anterior segment. Finally, he covers it with a thin top layer of OMNICHROMA to the final contour.

CASE VERSATILITY



Class V



Class II



Class IV

Before-and-after case photos show OMNICHROMA's versatility. Courtesy of Dr. James Chae, Diamond Bar, CA.

ELIMINATE INTERFERENCE

For Class IV fractures or for any case where you're adding a significant amount of unsupported OMNICHROMA, Tokuyama Dental developed OMNICHROMA BLOCKER. This material is designed to reduce intraoral shade-matching interferences created by other parts of the mouth. OMNICHROMA BLOCKER can also mask slight staining or be used to reconstruct a highly opaque tooth.



