

A Quantum Leap in Universal Composites

Discover how Quantum redefines restorative dentistry with optimized handling, high polishability, low shrinkage, and predictable esthetics—making anterior and posterior restorations easier, faster, and more reliable than ever.



A New Standard in Universal Composites

Quantium is engineered for optimized handling, low shrinkage, and high polishability in everyday restorative cases.

When the team at BISCO set out to develop Quantum nearly a decade ago, the goal was clear: create a material that addresses the most common challenges clinicians face with universal composites. It needed to be easy to handle, polish beautifully, and deliver superior esthetics. Quantum delivers on those fronts and more, offering dentists a strong, truly universal composite they can rely on for both anterior and posterior cases—simplifying procedures and streamlining inventory.

"The chemistry in today's composites is very strong, and Quantum has taken the best elements that make composites easier to place and combined them into one material," said Dr. Lauren Yasuda Rainey, an educator and general dentist practicing in Seattle, WA.

Quantium is formulated with a range of filler sizes, resulting in low shrinkage and high polishability. It is available in 6 VITA shades in both enamel and body translucencies, as well as bleach and incisal shades, enabling dentists to deliver consistently beautiful restorations for a wide variety of clinical situations.

In the short time since entering the market in 2025, Quantum has already become a workhorse material for many dentists. The light-cured composite checks all the boxes—enhancing the placement experience for clinicians while delivering improved outcomes for patients.

"This one doesn't have that asterisk where you choose to use it mostly in the posterior," said Dr. Howard Glazer, past president of the Academy of General Dentistry. "I'm comfortable using it in any restoration and any classification—and it works."

Backed by science and developed by a company dentists have trusted for decades, Quantum stands out for its low marginal shrinkage, high radiopacity, optimized handling, and beautiful esthetics. In this ebook, we explore how the new composite overcomes common clinical challenges—and why it may be time to make the leap.



RAISING EXPECTATIONS IN COMPOSITE DENTISTRY

Quantium offers several advantages over other universal composites, including:

Durability: High strength, wear resistance, and low shrinkage help restorations stand the test of time.

Esthetics: Available in multiple shades, Quantum is stain resistant and doesn't shade shift, so restorations maintain their beauty over time.

Polishability: A unique blend of microfillers and nanofillers makes polishing fast and predictable.

Low volumetric shrinkage: Microleakage is minimized, ensuring marginal adaptation.

Easy handling: At room temperature, the composite is more packable/sculptable and does not stick to instruments. For a softer handling, unit-dose capsules can be warmed without sacrificing performance.

High radiopacity: Quantum is easy to spot on radiographs, helping with post-treatment evaluation and allowing clinicians to confidently monitor restoration integrity.

The Feel Factor

How handling, consistency, and material science come together to improve composite placement and outcomes

Dentists can tell if they like a composite the moment they put it in their hands. It's a highly personal, tactile experience, and one that's essential to clinical success. If dentists don't like a material's handling properties, procedures become more difficult and the quality of final restorations may suffer.

Quantium is designed to make handling easier and placement an enjoyable experience. The material is optimized with a filler blend that allows it to be sculptable at room temperature, with no slumping, or warmed for a more flowable consistency—without sacrificing performance. The physical properties remain intact when warmed to a more flowable state, so it doesn't matter which consistency dentists prefer or what the case calls for; Quantum can deliver esthetic, durable restorations either way. There's no need to switch back and forth between a packable and a flowable.

Dr. Rainey was initially drawn to Quantum because the unit-dose capsules can be warmed—her preference for composite placement—without damaging the chemistry. The warmed material is easy to manipulate, seamlessly flowing into all the fine anatomical details and internal line angles. And Quantum stays where she puts it, whether at room temperature or warmed.

"Warming can be better for ergonomics, too," Dr. Rainey said. "You don't have to push as hard to get the material



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Dr. Rainey also likes that the composite doesn't stick to instruments or lift during placement, a common issue with other composites that can lead to voids.

Offering a composite with "the least amount of stickiness" no matter what instrument is used was a focus for the R&D team, BISCO Manager of Clinical Marketing Dr. Rolando Nuñez said. Addressing that pain point makes placement more enjoyable and leads to better results.

Dr. Jennifer Derse, a nationally recognized leader in cosmetic and restorative dentistry, believes Quantum accomplished that mission. "There's not a lot of pull-back with this," she said. "I don't feel like this is a sticky composite by any means."

The Secret Sauce

To create the universal composite the R&D team had in mind, it was critical to balance particle sizes. The result is an optimized blend of filler sizes that delivers both strength and esthetics. Quantum combines nanofillers for enhanced polishability and radiopacity with microfillers to reinforce strength and reduce volumetric shrinkage. BISCO's proprietary pre-polymerization process allows for increased filler loading without sacrificing polishability or handling. This unique filler makeup leverages the best of micro- and nanofillers in an aggregated filler.

That combination of pre-polymerized fillers (PPF) is the "secret sauce," Dr. Nuñez said. "We made our own fillers to achieve optimal strength, polishability, nonstickiness, and radiopacity."

WARMING UP TO QUANTIUM

Quantium compules (not the syringe) can be warmed to 68°C (154°F) for up to 1 hour in any composite-warming device—per device manufacturer instructions. This makes the material more flowable for dentists who prefer a lower viscosity composite, or for cases, like deep restorations, that require a flowable material but without sacrificing performance.



Where Strength Meets Shine—and Stays There

By eliminating the traditional trade-off between filler load and polishability, Quantum delivers durable restorations that finish to a high-gloss shine quickly and efficiently.

A composite's filler size directly affects its performance. Higher filler loads improve strength and reduce shrinkage but often compromise polishability. Smaller fillers can achieve a high-gloss finish, yet require more resin, making them weaker and more prone to shrinkage and microleakage. As a result, many composites demand time-consuming, multi-step polishing, and esthetics can still fall short.

Quantum addresses this longstanding trade-off with BISCO's custom PPF filler blend, which combines the advantages of microfilled and nanofilled technologies. The result is a composite optimized for both strength and esthetics—one that polishes quickly and easily to a high-gloss finish while saving valuable chair time.

"It's exceptional," said Dr. Troy Schmedding, a lecturer and practitioner based in Walnut Creek, CA. "It only takes a 2-step polishing process. For other composites, I've used a 3- or even a 4-step polishing system. With Quantum, polishability goes way up. It's quicker, more efficient, and you get a superior result."

Quantum's high gloss retention, stain resistance, and ease of polish help restorations maintain their appearance over time. "What I really like about Quantum is that it's not opaque—you can just grab any regular polisher and get a shine out of it really quickly," said Dr. Luis Abrahante, a dentist in Mountain Brook, AL.

As a truly universal composite suitable for both anterior and posterior restorations, Quantum also supports practice efficiency. That versatility is especially important to



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—Troy Schmedding, DDS



Dr. Derse, who prefers not to stock multiple composite systems for different areas of the mouth.

"You want something you can use throughout the mouth," she said. "You need something that the shade matches nicely and that looks pretty when you polish it. You get that with Quantum."

Beautiful Outcomes

Universal composites often perform well in the posterior but fall short in the anterior, where materials can appear gray or overly translucent, Dr. Schmedding noted. Shade compatibility presents another challenge, as many systems don't align with the VITA Shade Guide, making natural shade matching more difficult. Shade shift over time further complicates predictable esthetic results.

Quantum is designed to match the VITA shade guide and is formulated to blend seamlessly with natural tooth structure when applied with a single shade or layered with multiple shades. At a time when single-shade systems have become more common, BISCO decided to take a different approach with Quantum. The composite is available in 6 VITA shades with both enamel and body translucencies that don't shade shift over time.

"I'm not a huge universal one-shade-does-it-all composite guy. I like to have versatility in my composite line," Dr. Schmedding said. "Quantum gives me the ability to create different types of artistic dentistry."

Quantum also offers bleach and incisal effect shades, rounding out what Dr. Glazer describes as a "nice range of shades."

"You have options to finesse the restoration depending on how much you choose to do," he said.

Dr. Rainey appreciates the esthetics the shades provide as well as the packaging. Everything is clearly labeled, so she can easily find the enamel or body shade she needs, without having to turn the compule over and read through the fine print. It's easy to make a mistake when you have to search the labels, and such mistakes can lead to poor esthetics and unhappy patients.

Dr. Schmedding said his patients have been consistently pleased with restorations placed using Quantum, pointing to the esthetic results this universal composite helps him achieve.

Quantum esthetics have that "wow factor," Dr. Glazer said, pointing out that if patients say, "Oh wow," when they look in the mirror for the first time, you know you're using the right material.

"This material basically covers all restorations in dentistry, everything from the anterior to the posterior," Dr. Schmedding said. "It gives you a multitude of shades and opacities that allow you to create really beautiful, life-like dentistry."

You Know Exactly Where It Is

Quantum is "very radiopaque," Dr. Derse said, so it's easy to find on radiographs. Not every composite is. Some blend into the enamel, making it difficult to distinguish between them. With Quantum, Dr. Derse can see, without a doubt, that everything is sealed properly.

MANAGING MICROLEAKAGE

Shrinkage stress has always been a challenge with composites, and it's another pain point BISCO addresses with Quantum. The material exhibits low volumetric shrinkage, which minimizes microleakage and ensures marginal adaptation.

"When I use other composites on a Class I or II restoration and take a picture, I can see a white halo between the composite and the tooth," Dr. Abrahante said. "I haven't seen that with Quantum. When you take a picture, the transition between tooth and composite is almost seamless."



"You need something that the shade matches nicely and that looks pretty when you polish it. You get that with Quantum."

—Jennifer Derse, DDS

Dr. Rainey agreed.

"With the increased radiopacity, it's clear where the material is and where the tooth structure is," she said. "I can dismiss patients confidently, knowing there isn't material where it shouldn't be, nothing is stuck in the gums, and everything is radiographically sealed."

Making Its Mark

In just a short time, Quantum has proven able to solve common universal composite pain points. It's easy to handle; can be used as a packable that doesn't slump or warmed to become a flowable without sacrificing performance; doesn't stick to instruments; polishes easily;

blends seamlessly; and can be confidently used in the anterior.

Dr. Derse describes Quantum as a "solid composite" that's easy to work with and exhibits good esthetics, while Dr. Rainey said she's been pleased with how it handles, shapes, and polishes.

Both clinicians were eager to try it simply because it came from BISCO, a company they trust and that Dr. Schmedding said is known for developing "exceptional" materials backed by research.

"I know BISCO always has science at the heart of their products," Dr. Rainey said. "That's why I use BISCO products. They really put science first, and have a strong reputation in the market."

CASE IN POINT: FRACTURED TO FLAWLESS

Dr. Abrahante recently restored a patient's fractured central incisor and achieved symmetry using Quantum universal composite.



ADDITIONAL RESOURCES



QUANTUM™ UNIVERSAL COMPOSITE UNIT DOSE TIPS

Quantum is a light-cured, radiopaque, universal dental composite.

14 options / From \$124.00



QUANTUM™ UNIVERSAL COMPOSITE SINGLE SYRINGES

Quantum is a light-cured, radiopaque, universal dental composite.

14 options / From \$124.00



QUANTUM™ UNIVERSAL COMPOSITE KITS

The Quantum Intro Kit is a light-cured dental composite system designed for both anterior and posterior restorations, offering versatile...

2 options / From \$300.00