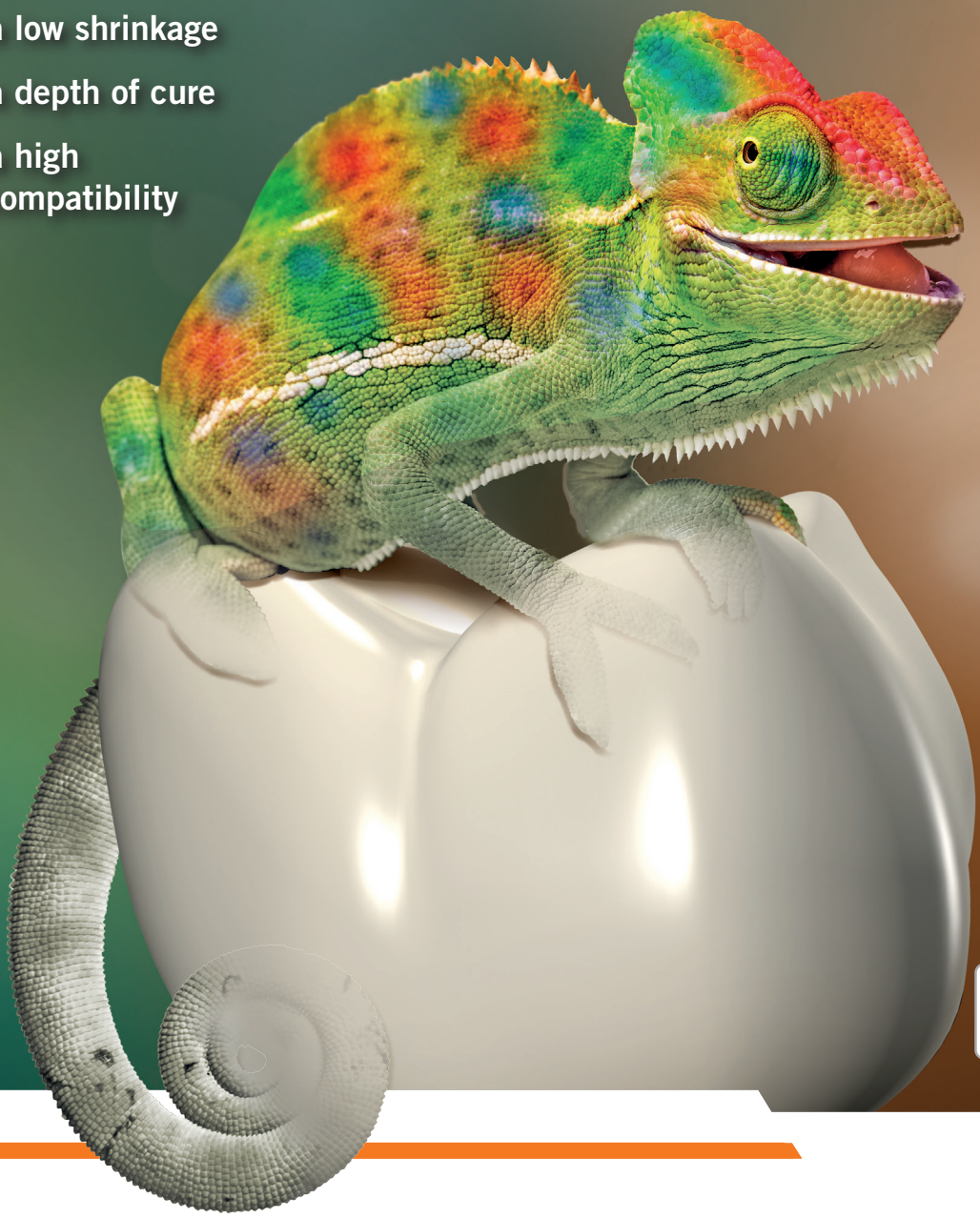
SIMPLICITY IN 1 SHADE

+ X-TRA

- x-tra low shrinkage
- x-tra depth of cure
- x-tra high biocompatibility



pure silicate technology

omni-chromatic

Admira Fusion x-tra

SINGLE-SHADE OMNI-CHROMATIC NANO-ORMOCER® RESTORATIVE

EDITORS' CHOICE DENTAL ADVISOR +++++

MADE IN GERMANY 100%

VOCO THE DENTALISTS

Admira Fusion x-tra

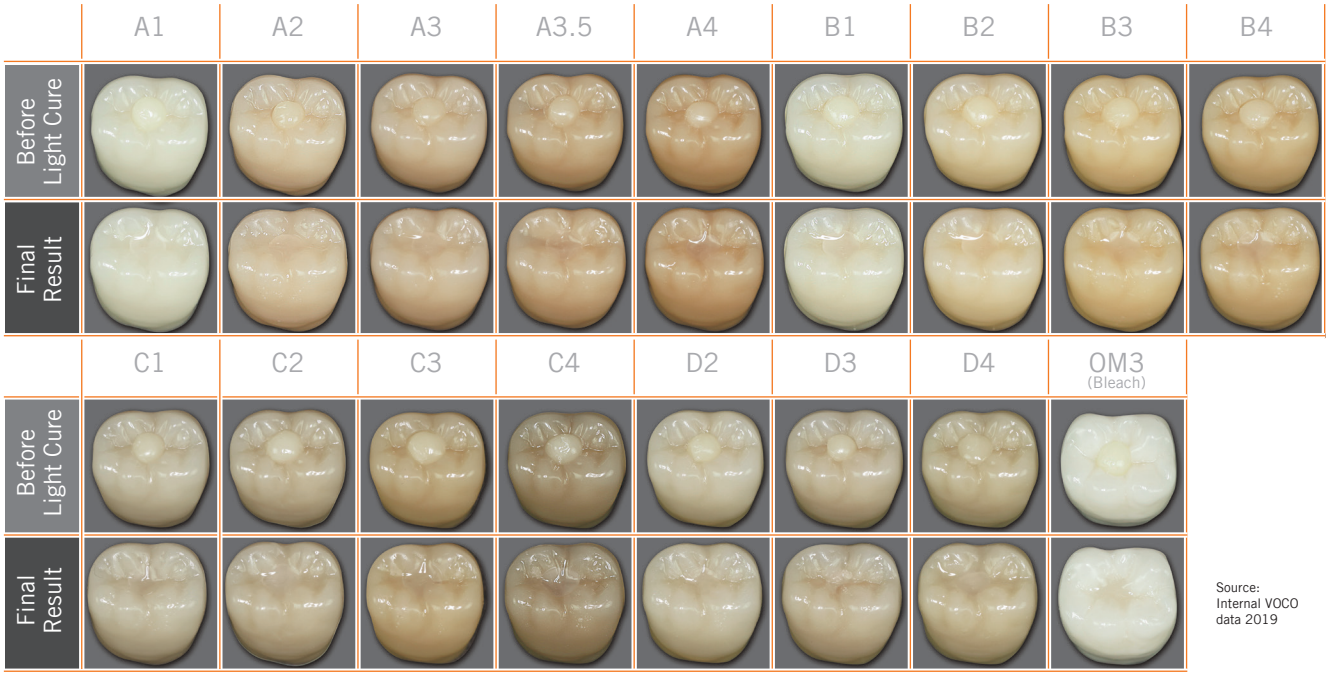
1 SHADE SIMPLICITY WITH SUPERIOR PHYSICAL PROPERTIES

Practitioners have never stopped striving for quality results and satisfied patients, and that will likely never change. What has changed is how they achieve these results, with practitioners embracing innovative ideas and new technologies within products that help them perform their procedures more quickly and easily. With that in mind, VOCO introduces Admira Fusion x-tra, the world's first single-shade omni-chromatic nano-ORMOCER restorative material, designed to deliver simplicity and ease-of-use in a single shade and backed by the high-quality performance of nano-ORMOCER technology.

Omni-Chromatic by design

Admira Fusion x-tra's nano-hybrid fillers are composed of a high ratio of nano-particles with additional micro particles – or glass fillers immersed in an ORMOCER matrix. When the nano-particles are viewed under an electron microscope, they are spherical in shape and measure 20–40 nanometers in diameter. Due to their size and shape, Admira Fusion x-tra's designer nano-particles do not diffract or refract light.

Rather, light passes through the nano-particles, hits the surrounding tooth structure and returns to the human eye now influenced by the shade and color of the surrounding tooth structure. It is for this reason that Admira Fusion x-tra has the unique ability to match the shade range of human dentition in a single omni-chromatic universal shade.



Source:
Internal VOCO data 2019

Admira Fusion x-tra

PHYSICAL PROPERTIES THAT OFFER THE NEXT LEVEL OF PERFORMANCE FOR A DIRECT RESTORATIVE

Admira Fusion x-tra sets new standards in restorative dentistry in respect to materials science. Practitioners now have the option of placing all ceramic-based restorations chairside, and in just the same straightforward way to which they are accustomed. Admira Fusion x-tra allows practitioners to offer their patients premium treatment with a level of quality previously never achieved.

"Pure Silicate Technology" inside

Silicon oxide forms the chemistry base for Admira Fusion x-tra, not only for the fillers (nano-fillers as well as glass ceramics) but also – and this represents the innovative achievement in development – for the ORMOCER matrix.

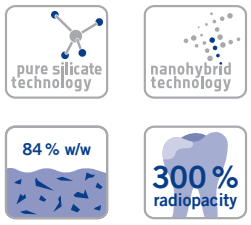
This unique "Pure Silicate Technology" not only makes the Admira Fusion family of restoratives the world's first all ceramic-based, but also makes Admira Fusion x-tra the world's only nano-ORMOCER single-shade, omni-chromatic restorative, with several remarkable advantages.

A NEW LEVEL OF BIOCOMPATIBILITY

Fact:
Fillers and ORMOCER matrix based purely on silicon oxide with no classic monomers.

Benefit to You:
Excellent biocompatibility[1], minimized allergy potential.

[1] Leyhausen et al., Hannover Medical School, report to VOCO, 2015.



ORMOCER® = Highly biocompatible

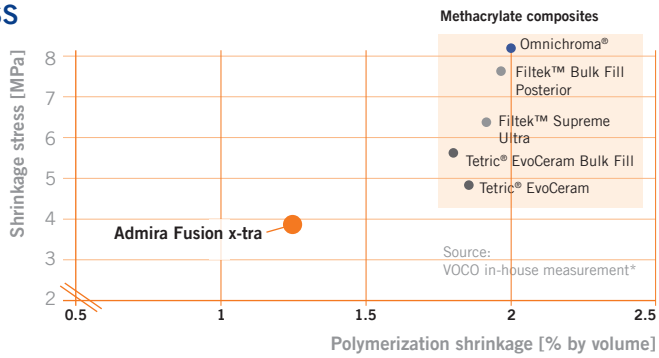
Admira Fusion x-tra contains no classic monomers, such as BisGMA, TEGDMA or HEMA, thus eliminating the potential for such substances to be released after polymerization. The ORMOCER (**OR**ganically **MO**dified **CER**amic), which have been used in place of conventional monomers, consist of large and pre-condensed molecules of an inorganic matrix with a high degree of cross-linking. With this ORMOCER technology, Admira Fusion x-tra's overall results are that of "excellent biocompatibility."[1]

[1] Leyhausen et al., Hannover Medical School, report to VOCO, 2015.

UP TO 50 % LESS SHRINKAGE AND SHRINKAGE STRESS

Fact:
Extremely low polymerization shrinkage (1.25 % by volume) and very low shrinkage stress (3.87 MPa).

Benefit to You:
Marginal integrity of the highest standard for fillings-remaining intact for the long term.



* Shrinkage acc to the method of Watts and Cash 1991
Shrinkage stress acc to the method of Watts et al 2003

Filtek Bulk Fill Posterior, Filtek Supreme Ultra, Tetric EvoCeram, Tetric EvoCeram Bulk Fill, Vita, and Omnichroma are not registered trademarks of VOCO GmbH.

Admira Fusion x-tra

NANO-TECHNOLOGY FOR STRENGTH, LONGEVITY AND ESTHETICS

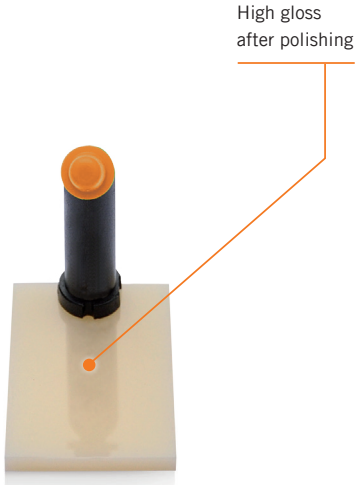
Much of Admira Fusion x-tra's strength, longevity and esthetics are derived from its especially small nano-particles. Two methods have traditionally been utilized for creating nano-particles. One method is referred to as flame-pyrolysis which has challenges associated with it in relation to limitations on fill rate and the inability to optimize physical properties due to agglomeration. The second method, and the one utilized in the manufacturing of the nano-particles within Admira Fusion x-tra, is called sol gel process, which is a controlled reaction between different chemistries that result in the creation and growth of uniform nano-spheres (nano-particles) that are harvested once they grow to the desired diametrical size (Admira Fusion x-tra's nano-particles' diameter = 20-40 nanometers).

In addition to being responsible for the unique interaction with visible light waves creating Admira Fusion x-tra's chameleon effect, Admira Fusion x-tra's nano-particles allow for a high fill rate, which improves handling, decreases wear, decreases stickiness, increases both short-term and long-term shade stability (staining) and increases the restoration's overall longevity.

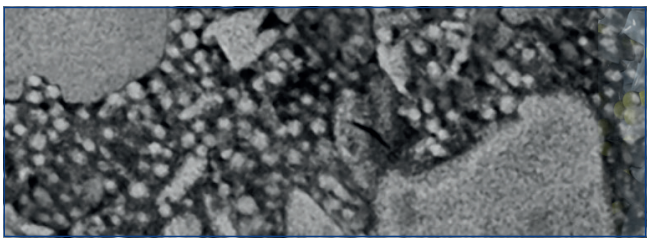
ELEVATED ESTHETICS WITH EXTENDED LONGEVITY

Fact:
Ultimate color stability, even in extreme conditions

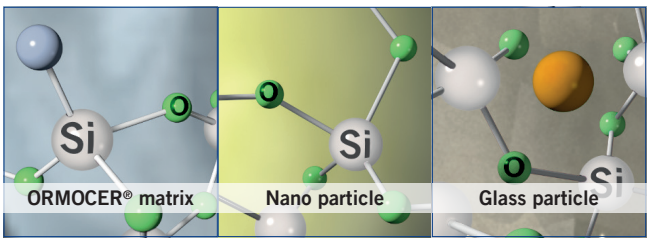
Benefit to You:
Long-lasting esthetic restorations equate to highly satisfied patients.



NANO-PARTICLES



TEM view of Admira Fusion x-tra, magnified 20,000 times;
Source: Prof. Dr.-Ing. Detlef Behrend, University of Rostock



Schematic drawing of the TEM image

Admira Fusion x-tra

UP TO 50 % LESS SHRINKAGE THAN CONVENTIONAL COMPOSITES

Composite resins have been in use within dentistry for almost 50 years, and concerns about the impact of their initial shrinkage have always accompanied them (initially as high as 5 % though currently around 2 to 3 %) as it relates to marginal integrity and micro-leakage, ultimately calling into question the overall integrity and longevity of the restoration. Today, Admira Fusion x-tra's nano-ORMOCER technology offers a step forward in the evolution of direct restorations, and specifically in the area of initial shrinkage with only 1.25 % (by volume), which is up to 50 % less shrinkage than conventional composites.

Marginal integrity of the highest standard

The special ORMOCER pre-condensed large molecular groupings in Admira Fusion x-tra help reduce the volume shrinkage to an extremely low level (1.25 % by volume) in conjunction with very low shrinkage stress (3.87 MPa). These two factors deliver optimal marginal integrity of the the restoration, thus significantly contributing to its long-term success. Illustrated in Fig 1. below is the difference between the polymerization of traditional monomers of a conventional composite vs. the large pre-condensed molecular groupings of an ORMOCER-based restorative like Admira Fusion x-tra. The distance required to travel to complete polymerization is considerably less, which results in reduced initial shrinkage.

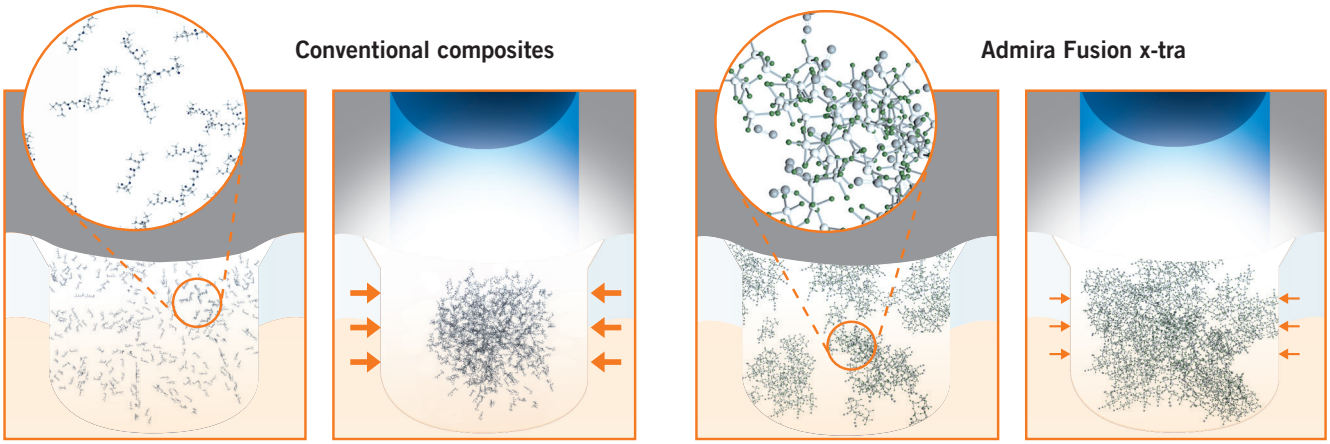


Fig. 1

Technical data					
Filler content	84.0 % by weight	DIN 51081	Compressive strength	307 MPa	analogous ISO 9917
Polymerization shrinkage	1.25 % by vol.	analogous Watts et al.	Radiopacity	296 %	ISO 4049
Shrinkage stress	3.87 MPa	analogous Watts et al.	Water Uptake	13.4 µg/mm³	ISO 4049
3-point flexural strength	136 MPa	ISO 4049	Solubility in Water	≤ 0.1 µg/mm³	ISO 4049
Modulus of elasticity	10.090 MPa	ISO 4049	Depth of cure	4 mm	ISO 4049

Admira Fusion x-tra

SINGLE-SHADE OMNI-CHROMATIC NANO-ORMOCER RESTORATIVE

Indications

Class I and II posterior restorations

Base in Class I and II cavities

Class V restorations

Locking, splinting of loose anteriors

Extended fissure sealing

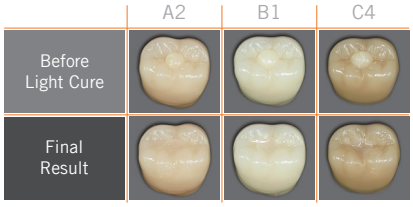
Repairing veneers, small enamel defects and temporary C&B-materials

Restoration of deciduous teeth

Core build-up

Advantages

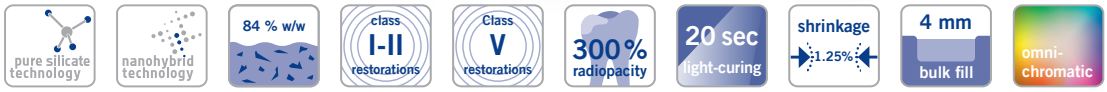
- Only one omni-chromatic shade: no guess work and no more wasted shades
- 4 mm depth of cure – saves time
- Easy to polish, highly stain resistant with a high gloss
- Exceptional longevity with low initial shrinkage of only 1.25 % (v/v)
- No traditional monomers (no Bis-GMA [No BPA], TEGDMA, UDMA, etc.) for superior biocompatibility
- Based on innovative Nano-ORMOCER Technology with enhanced physical properties
- Compatible with all conventional bonding agents



Presentation

REF 2810 Syringe 3 g universal

REF 2811 Caps 15 × 0.2 g universal



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