

THE FIRST **ALL CERAMIC**-BASED DIRECT RESTORATIVE

Admira Fusion

PURE SILICATE
ALL CERAMIC-BASED
PARADIGM SHIFT EVOLUTIONARY
A NEW LEVEL OF BIOCOMPATIBILITY
NEW **ADMIRA** 1.25%
NANO SOLUTION **FUSION** SHRINKAGE
NEXT GENERATION
INNOVATION
PRECISION
EXCELLENCE
VOCO
NANO ORMOCER TECHNOLOGY

THE **IDEA** IS NOW A **REALITY**



Admira Fusion

NANO-ORMOCER® DIRECT RESTORATIVE



VOCO
THE DENTALISTS

Admira Fusion

ALL CERAMIC-BASED DIRECT RESTORATIVE

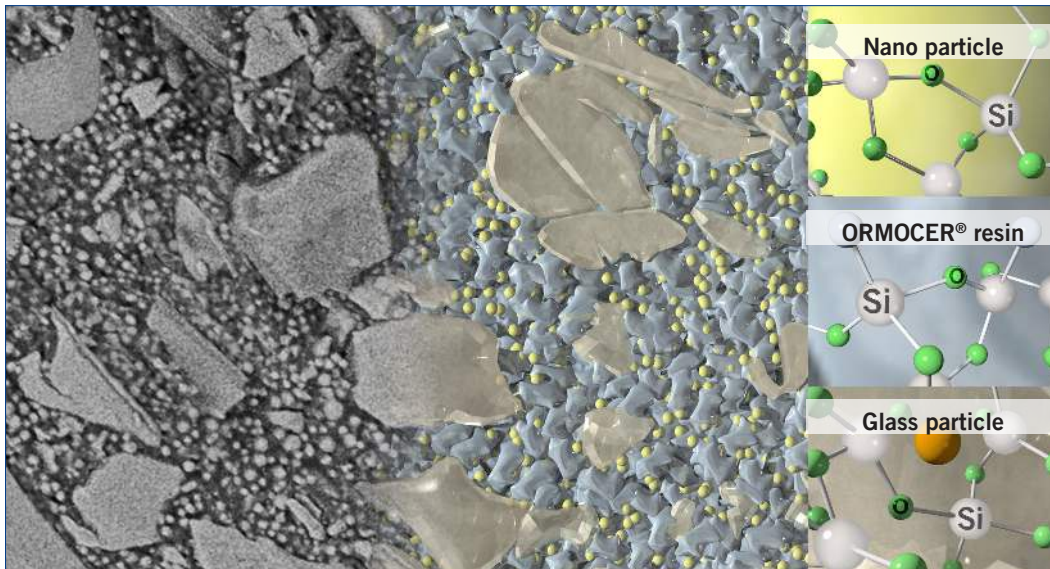
The highly innovative ORMOCER® technology – developed by the Fraunhofer Institute for Silicate Research ISC – was first used by VOCO as early as 1999 for the restorative composite Admira. Since then, this pioneering technology has been the subject of continued consistent and meticulous research and development. The aim was to launch an ORMOCER® restorative material completely free of classic monomers, while also implementing the nano-hybrid technology developed by VOCO, which was first introduced and utilized in 2003 with the launch of the nano-hybrid composite Grandio.

The outstanding results of this endeavor are a range of nano-hybrid ORMOCER® restorative materials that make up the Admira Fusion family of products.

“Pure Silicate Technology“ inside

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

This unique “Pure Silicate Technology“ makes Admira Fusion the world’s first all ceramic-based restorative material and offers several remarkable advantages.



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

Right image: schematic drawing of the TEM image, including commentary

ORMOCER® = Highly biocompatible

Admira Fusion 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**modified **CER**amics), which have been used in place of conventional monomers,

consist of large and precondensed molecules of an inorganic matrix with a high degree of cross-linking. With this ORMOCER® technology, the overall results on Admira Fusion is one of “excellent biocompatibility.”⁽¹⁾

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

Admira Fusion

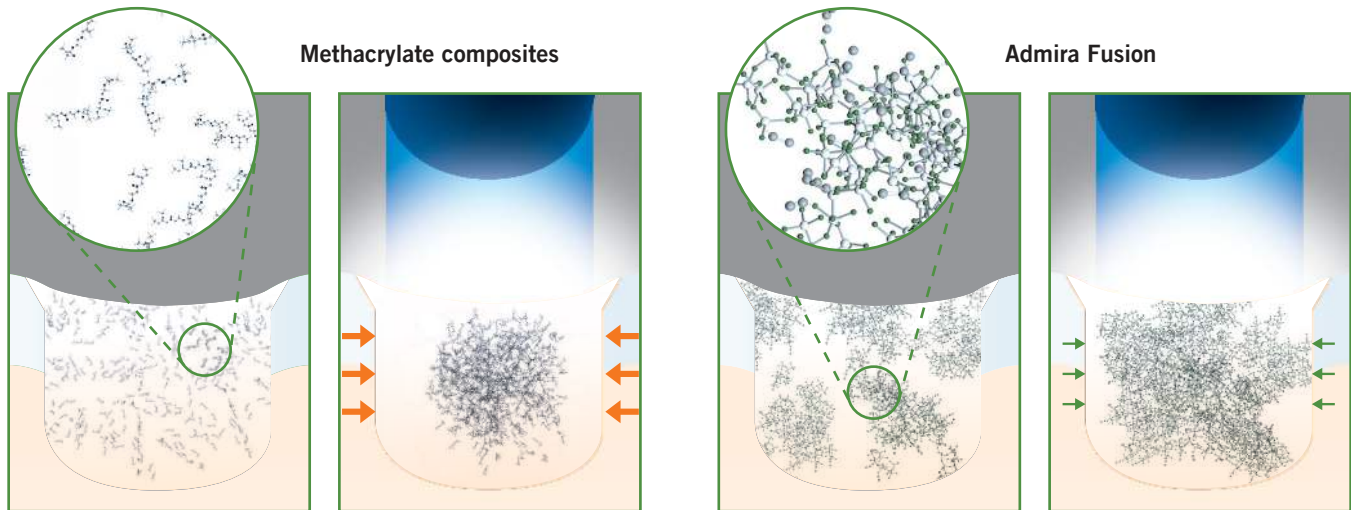
UP TO 50% LESS SHRINKAGE THAN CONVENTIONAL COMPOSITES

Composite resins have been in use within dentistry for almost 50 years, and along with their use has always been a concern regarding the impact of their initial shrinkage (initially as high as 5% though currently around 2 to 3%) as it relates to marginal integrity and micro-leakage, and in the end, the overall integrity and longevity of the restoration. Today Admira Fusion'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) shrinkage, which is up to 50% less shrinkage than many conventional composites.

Marginal integrity of the highest standard

The special ORMOCER® compound molecules in Admira Fusion 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 guarantee optimal marginal integrity of the restorative material and thus significantly contribute to the long-term success of the restoration.



Technical data					
Filler content	84.0% by weight	DIN 51081	Radiopacity	305 %AI	ISO 4049
Polymerization shrinkage	1.25% by vol.	analogous Watts et al.	Resistance to ambient light	198 s	ISO 4049
Shrinkage stress	3.71 MPa	analogous Watts et al.	Water absorption	13.4 µg / mm ³	ISO 4049
3-point flexural strength	132 MPa	ISO 4049	Water solubility	≤ 0.1 µg / mm ³	ISO 4049
Modulus of elasticity	9.8 GPa	ISO 4049:1988	Thermal expansion coefficient (α)	40.3*10 ⁻⁶ / K	Fraunhofer Institute Würzburg, Germany
Compressive strength	307 MPa	analogous ISO 9917	Depth of cure	2.7 mm	ISO 4049
Surface hardness	141.3 MHV	University of Rostock, Germany	Tensile bond strength to enamel (with Futurabond M+: self-etch mode)	30.0 MPa	University of São José dos Campos, Brazil
Edge strength	171.9 N	University of Manchester, UK	Tensile bond strength to dentin (with Futurabond M+: self-etch mode)	23.8 MPa	University of São José dos Campos, Brazil

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

Admira Fusion sets new standards in restorative dentistry in respect to materials science. Now you have the option of placing all ceramic-based restorations chairside, and in just the same straightforward way as you are accustomed to from working with a good restorative composite. Admira Fusion allows you to offer your patients premium treatments in tooth shades with a level of quality previously never achieved.

A NEW LEVEL OF BIOCOMPATIBILITY

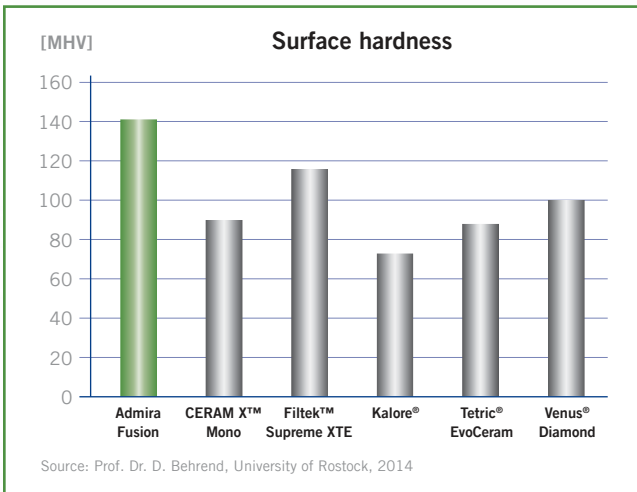
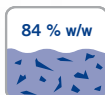
Fact:

Fillers and resin matrix based purely on silicon oxide, no content of classic monomers.

Benefit to You:

Excellent biocompatibility⁽¹⁾, minimized allergy potential.

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



HIGH SURFACE HARDNESS FOR BETTER LONGEVITY

Fact:

Very high surface hardness (141 MHV), coupled with simple and effective polishing procedure.

Benefit to You:

Highly stable and smooth fillings are best able to withstand the loads imposed on a daily basis by chewing, and they also impede the adhesion of micro-organisms.

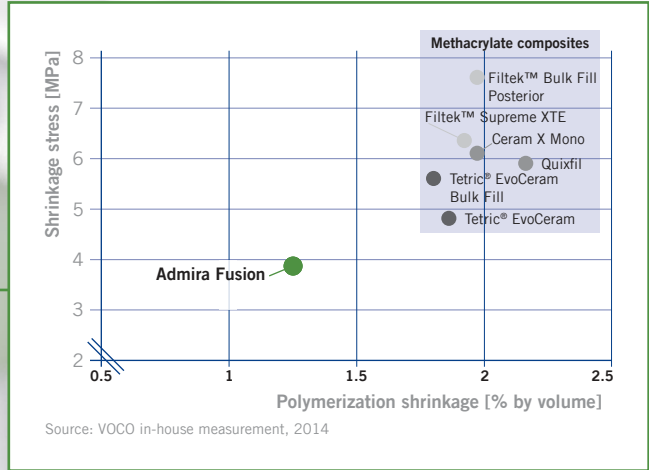
UP TO 50% LESS SHRINKAGE AND SHRINKAGE STRESS

Fact:

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

Benefit to You:

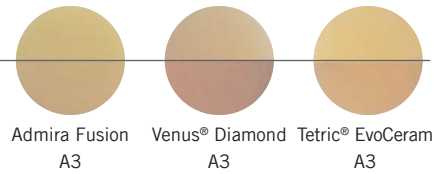
Marginal integrity of the highest standard for fillings remaining intact for the long term.



ELEVATED ESTHETICS WITH EXTENDED LONGEVITY

Initial

After 2 weeks of storage in red wine



Fact:

Ultimate color stability, even in extreme conditions (2 weeks storage in red wine).

Benefit to You:

Long lasting esthetic restorations equate to highly satisfied patients.

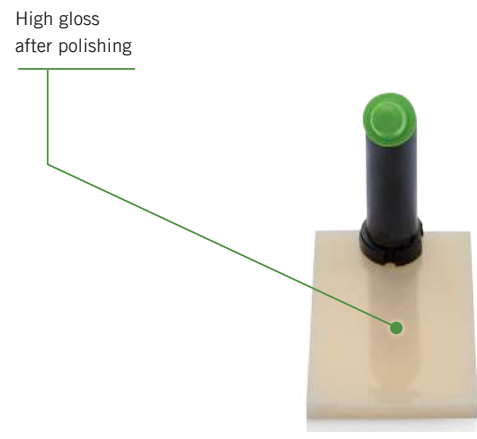
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Admira Fusion

UNIVERSAL. PREMIUM QUALITY. ESTHETIC.

Admira Fusion achieves results of the highest quality for anterior and posterior restorations. The combination of the innovative ORMOCER® technology with that of the tried and tested nano-hybrid technology means that you are able to work with a product that sets new standards, both with regard to its handling characteristics as well as its strength and stability. We invite you to convince yourself of the non-sticky, smooth consistency of this material, which adapts excellently to the cavity walls and can be modeled to perfection. The quick and

simple high-gloss polishing procedure, in conjunction with its high surface hardness, makes Admira Fusion a guarantor for restorations that are esthetic and remain intact for a long time. In accordance to the varying clinical requirements, needs and/or demands, Admira Fusion can be used either in a one-shade or a multiple-shade system. Three levels of translucency (i.e. opacity), are available for this purpose, while the 10 universal VITA shades are perfectly balanced, achieving realistic results even with just one shade.



Clinical Cases



Enamel-dentin fracture on tooth 9



Modeling of dentin core (OA2) and incisal edge (I)



Applying the final layer (A2) and sculpting the shape of the tooth



Esthetic result after polishing



Insufficient amalgam restorations in teeth 30 and 31



Prepared cavities



Modeling of the material which is still malleable at this stage (A2)



Finished, polished restorations

Source: Dr. Sanzio Marques, Passos / Brazil

Admira Fusion x-tra

SINGLE-SHADE OMNI-CHROMATIC NANO-ORMOCER RESTORATIVE MATERIAL

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 BisGMA [No BPA], TEGDMA, UDMA, HEMA, 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 x 0.2 g universal



Admira Fusion x-base

NANO-ORMOCER® FLOWABLE BASE RESTORATIVE

Indications

Base in class I and II cavities
 Cavity lining under direct restorative materials in class I and II cavities
 Small, non occlusal stress-bearing class I restorations according to minimal invasive filling therapy
 Class III and V restorations
 Extended fissure sealing
 Undercut blockout
 Repair of small enamel defects
 Repair of small defects in esthetic indirect restorations
 Repair of temporary C&B materials
 Core build-up

Advantages

- All ceramic-based direct flowable base restorative material
 - Pure Silicate Technology: Fillers and matrix are based purely on silicon oxide
 - No classic monomers (BisGMA [No BPA], UDMA, HEMA, TEGDMA, etc.)
 - Inert for outstanding shade stability
 - Compatible with conventional bonding agents
- 4 mm depth of cure
- Excellent wettability with smart self-leveling effect without slumping out of maxillary restorations
- Non-Dripping Syringe Technology (NDT®)
- Radiopaque

Presentation

REF 2812 Syringe 2 x 2 g universal, accessories
 REF 2148 Application Intraoral Tip Type 46, 100 pcs.



Admira Fusion

UNIVERSAL NANO-ORMOCER® RESTORATIVE MATERIAL

Indications

Class I to V restorations
 Base in class I and II cavities
 Reconstruction of traumatically damaged anteriors
 Facetting of discolored anteriors
 Correction of shape and shade for improved esthetic appearance
 Locking, splinting of loose anteriors
 Repairing veneers, small enamel defects and temporary C&B-materials
 Extended fissure sealing
 Restoration of deciduous teeth
 Core build-up
 Composite inlays



Advantages

- The world's first all ceramic-based direct universal restorative material
 - Pure Silicate Technology: Fillers and matrix are based purely on silicon oxide
 - No traditional monomers (No BisGMA [No BPA], TEGDMA, UDMA, HEMA, etc.) for superior biocompatibility
 - Nano-ORMOCER® technology reduces shrinkage and shrinkage stress by up to 50% compared to composites and leads to outstanding shade stability
- Non-sticky consistency for easy handling
- Perfect balance of translucency and opacity for natural looking restorations
- Easy to polish to a high shine luster
- High 84% fill rate for high wear resistance
- Compatible with all conventional bonding agents

Presentation

REF 2750 Kit
 syringe 5 x 3 g (A1, A2, A3, A3.5, Admira Fusion x-tra),
 shade guide

REF 2752 Shade guide

REF 2780 Kit
 Caps 75 x 0.2 g (15 each of A1, A2, A3, A3.5,
 Admira Fusion x-tra), shade guide

Shade	Syringe 3 g	Caps 15 x 0.2 g	Shade	Syringe 3 g	Caps 15 x 0.2 g	Shade	Syringe 3 g	Caps 15 x 0.2 g
A1	REF 2754	REF 2782	B1	REF 2762	REF 2790	OA3	REF 2772	REF 2800
A2	REF 2755	REF 2783	B2	REF 2763	REF 2791	OA3.5	REF 2773	REF 2801
A3	REF 2756	REF 2784	B3	REF 2764	REF 2792	BL	REF 2775	REF 2803
GA3.25	REF 2757	REF 2785	C2	REF 2766	REF 2794	Incisal	REF 2776	REF 2804
A3.5	REF 2758	REF 2786	D3	REF 2768	REF 2796	Mixed	–	REF 2806*
A4	REF 2759	REF 2787	OA1	REF 2770	REF 2798			
GA5	REF 2760	REF 2788	OA2	REF 2771	REF 2799			

* (3 each of B1, C2, D3, BL, Incisal)

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