

# Admira Fusion

**NANO-HYBRID ORMOCER® RESTORATIVE MATERIALS**



# Admira® Fusion

## PURELY CERAMIC-BASED

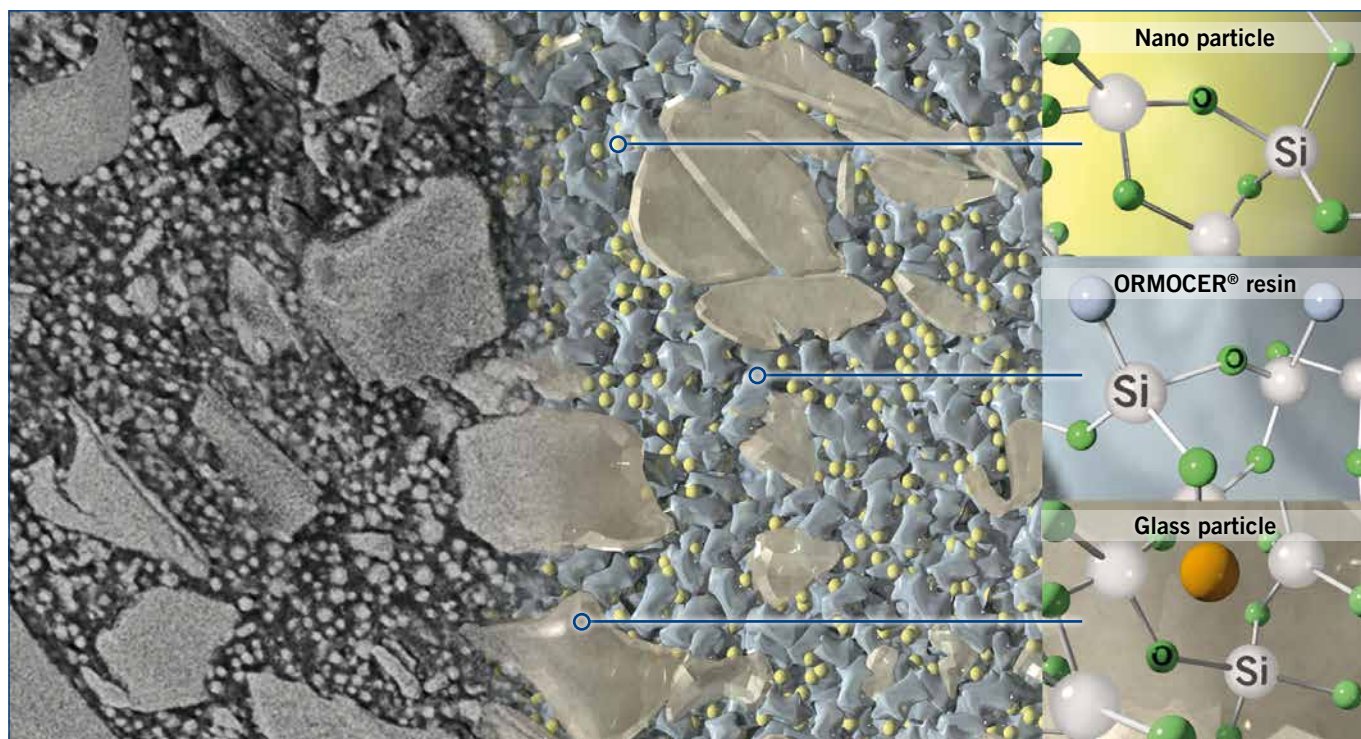
The highly innovative ORMOCER® technology – developed by the Fraunhofer Institute for Silicate Research ISC – was first used by VOCO as early as 1999, for the restorative composite Admira. Since then, this pioneering technology has been the subject of continued consistent and meticulous research and 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 employed in 2003 for the manufacture of the composite material Grandio.

**The outstanding results are the nano-hybrid ORMOCER® restorative materials of the Admira Fusion range.**

### “Pure Silicate Technology” inside

Silicon oxide forms the chemical base for all Admira Fusion products, 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 worldwide first purely ceramic-based restorative material and offers several remarkable advantages in one.



Left image: TEM view of Admira Fusion, magnified 20,000 times; Source: Prof. Dr.-Ing. Dettlef 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 Bis-GMA [BPA], TEGDMA or HEMA, thus eliminating the potential for such substances to be released after polymerisation. The ORMOCER®s (organically modified ceramics) which have been used instead consist of large and precon-

densed molecules of an inorganic matrix with a high degree of cross-linking. The overall verdict on Admira Fusion is one of “excellent biocompatibility”.<sup>[1]</sup>

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

# Admira® Fusion

**UNIVERSAL. BIOCOMPATIBLE. AESTHETIC.**

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

polishing procedure, in conjunction with high surface hardness, makes Admira Fusion a guarantor for restorations which are aesthetic and remain intact for a long time. According to requirement and allowing for varying demands, Admira Fusion can be used either in a one-shade or a multiple-shade system. Three levels of translucency, or rather opacity, are available for this purpose, while the 10 universal Vita shades are perfectly balanced, achieving realistic results even with just one shade.

10 universal Vita shades – perfect for everyday use

4 special shades provide helpful support in extraordinary situations

4 opaque dentine shades allow highly aesthetic layer system working

**NEW**

1 extra white bleach shade – perfect for aesthetic corrections

## Clinical Cases



Enamel-dentine fracture on tooth 21



Modelling of dentine core (OA2) and incisal edge (I)



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



Aesthetic result after polishing



Insufficient amalgam restorations in teeth 46 and 47



Prepared cavities



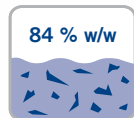
Modelling of the material which is still malleable at this stage (A2)



Finished, polished restorations

Admira Fusion sets new standards in restorative therapy in respect of materials science. Now you have the option of placing purely 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 which are of previously never achieved quality.



**Fact:**

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

**Your benefit:**

Excellent biocompatibility<sup>[1]</sup>, minimised allergy potential.

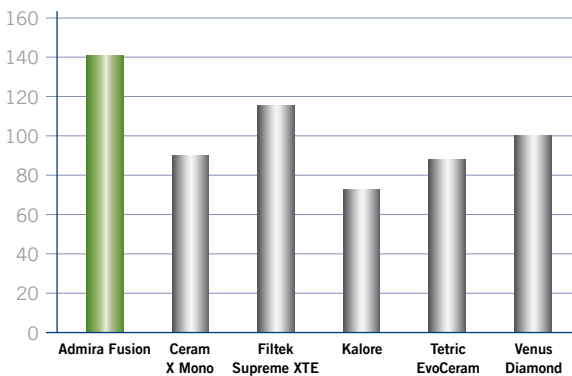
[1] Leyhausen et al., Hannover Medical School, report to VOCCO, 2015.

High gloss after polishing



[MHV]

**Surface hardness**



Source: Prof. Dr. D. Behrend, University of Rostock, 2014

**Fact:**

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

**Your benefit:**

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 microorganisms.

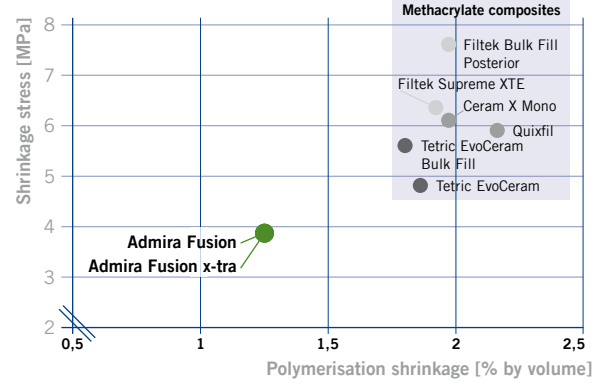
shrinkage  
 1.25%

**Fact:**

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

**Your benefit:**

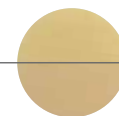
Marginal integrity of the highest standard for fillings remaining intact for the long term.



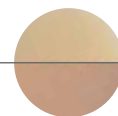
Source: VOCO in-house measurement, 2014

Initial

After 2 weeks of storage in red wine



Admira Fusion A3



Venus Diamond A3



Tetric EvoCeram A3

**Fact:**

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

**Your benefit:**

Lastingly aesthetic restorations equate to highly satisfied patients.

Ceram X Mono, Filtek Bulk Fill Posterior, Filtek Supreme XTE, Kalore, Quixfil, Tetric EvoCeram, Tetric EvoCeram Bulk Fill, Venus Diamond and Vita are not registered trademarks of VOCO GmbH.

# Admira® Fusion Flow

**FLOWABLE. BIOCOMPATIBLE. AESTHETIC.**

If you value the special properties of flowable restorative materials, then the nano-hybrid ORMOCER® Admira Fusion Flow will be the perfect material for you to create restorations of equally high-level quality, aesthetics and, above all, biocompatibility. Both the packable Admira Fusion and also Admira Fusion Flow utilise the unique “Pure Silicate Technology”, enabling you to optimally treat everyday situations, as well as special cases, with a purely ceramic-based flowable.

## Innovative and functional

Thanks to its innovative ORMOCER® technology, Admira Fusion Flow exhibits a particularly low level of volume shrinkage (2.75 %) and very low shrinkage stress (7.27 MPa). Especially for cavities with a high c-factor, Admira Fusion Flow therefore represents an ideal foundation and outstanding supplement for the universal restorative material Admira Fusion.

In addition, it is a first-class aesthetic “troubleshooter” due to its high-grade surface hardness in combination with good - and simple - polishability.

## Versatile and aesthetic

The flowable is available in 12 shades of extreme colour stability, which perfectly match the range of Admira Fusion shades. Thus Admira Fusion Flow helps you create durably aesthetic restorations in a convenient manner.

The special shades Bleach-Light (BL) and White-Opaque (WO) also serve to treat extraordinary indications. Bleach-Light can not only be used for whitened teeth, but also in paediatric dentistry. White-Opaque is an excellent foundation for restorations in cases such as discolouration in dentinal areas or core build-ups.

## Clinical Case



Mesial caries on tooth 12, disto-palatinal caries on tooth 11



Pre-filling work on the prepared cavities according to the rules of adhesive filling therapy



Simple application and optimal wetting behaviour of Admira Fusion Flow



Outstanding result created with Admira Fusion Flow / Admira Fusion

Source: Dr. Walter Denner, Fulda / Germany

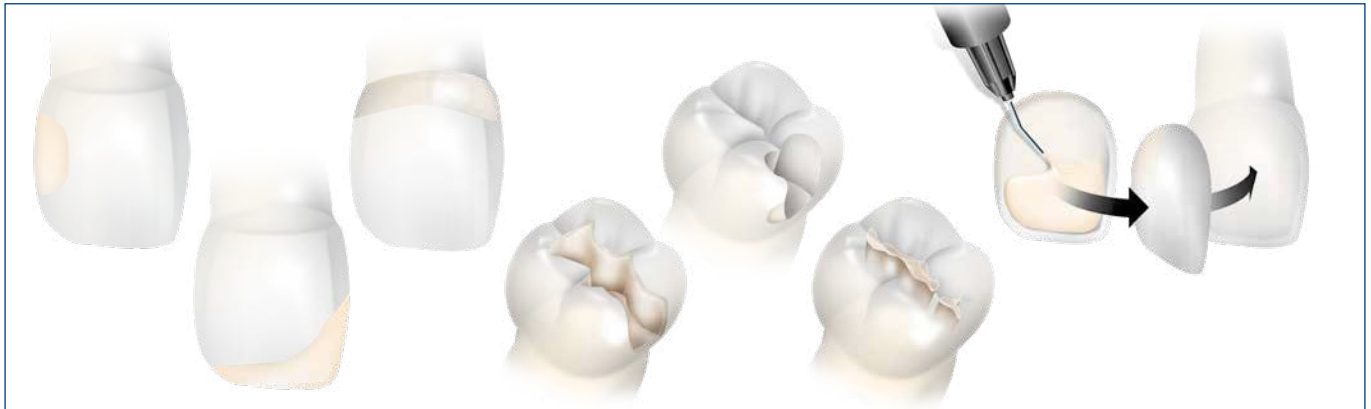
## “Smart” handling

Admira Fusion Flow is a thixotropic material characterised by the so-called “flow-on-demand” feature, which is of great advantage to the user because the material flows when under pressure but keeps its shape and remains in place as required for light-curing. Outstanding flow characteristics ensure an excellent degree of wetting throughout the entire cavity. The material adapts perfectly to the cavity walls and flawlessly fills even undercuts and tunnel preparations.



# Admira® Fusion Flow

## NANO-HYBRID ORMOCER® RESTORATIVE MATERIAL



### Indications

- Filling of small cavities and extended fissure sealing
- Blocking out undercuts
- Lining or coating cavities
- Fillings of class III - V cavities
- Repairing fillings, veneers and temporary restorations
- Luting translucent prosthetic pieces
- Locking, splinting of loose teeth

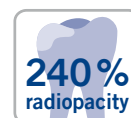
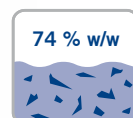
### Presentation

- REF 2816 Set syringe 5 x 2 g (A1, A2, A3, A3.5, WO), shade guide, accessories
- REF 2146 Application cannulae type 41, 100 pcs.

Shade	Syringe 2 x 2 g	Shade	Syringe 2 x 2 g
A1	REF 2818	B2	REF 2825
A2	REF 2819	C2	REF 2826
A3	REF 2820	Incisal	REF 2828
A3.5	REF 2821	OA2	REF 2829
A4	REF 2822	BL	REF 2831
B1	REF 2824	WO	REF 2832

### Advantages

- The worldwide first purely ceramic-based flowable restorative material
  - Pure Silicate Technology, i.e. fillers and resin matrix based purely on silicon oxide
  - contains no classic monomers
- Thanks to the most innovative ORMOCER® technology
  - extremely low polymerisation shrinkage (2.75 % by volume) and particularly low level of shrinkage stress in comparison to conventional flowable restorative composites
  - inert, so excellent biocompatible and extremely resistant to discolouration
- “Flow on demand” – the material becomes flowable only when under pressure or in motion. When the application has been completed, it is stable enough not to flow out of the cavity.
- Excellent surface affinity with complete wetting of the cavity walls
- VOCO's patented, non-running and non-dripping NDT® syringe ensures reliable and perfectly precise application. Undesirable loss of material is thus a thing of the past.
- 12 shades for aesthetic restorations – perfectly matching the shade range of the packable version, Admira Fusion
- Excellent handling, simple high-lustre polishing procedure coupled with high surface hardness guarantee first-class long-term results
- Compatible with all conventional bonding agents



# Admira® Fusion x-tra

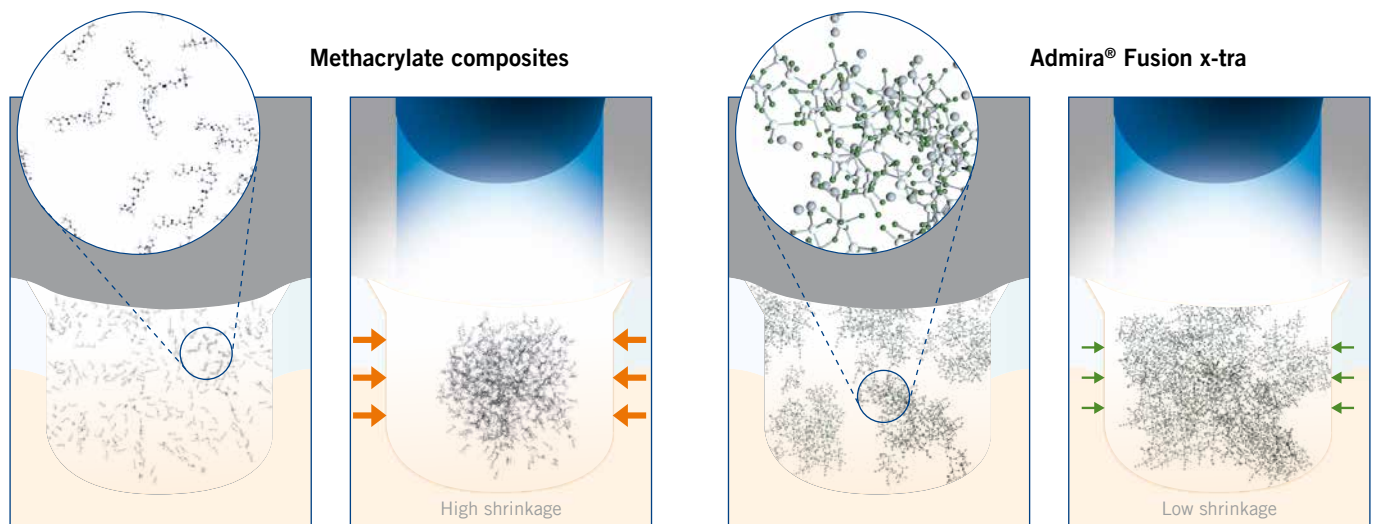
**QUICK. BIOCOMPATIBLE. BULK.**

Admira Fusion x-tra is the bulk fill version of Admira Fusion. This means that this restorative material can be applied in layers of up to 4 mm and then reliably cured. This makes placing posterior restorations particularly quick and economical for you. The universal shade U further simplifies handling, as it provides aesthetic results by adapting, chameleon-like, to the surrounding dental substance.

## Marginal integrity of the highest standard

The special ORMOCER® compound molecules in Admira Fusion x-tra reduce the volume shrinkage to an extremely low level (1.25 % by volume) in conjunction with very low shrinkage stress (3.87 MPa). Especially in cases

of very large cavities, which are filled in the bulk technique, these two factors guarantee optimal marginal integrity of the restorative material and thus significantly contribute to the long-term success of the restoration.



## High quality achieved with one universal shade

Not only does Admira Fusion x-tra rapidly produce posterior restorations which are of high quality from a material science point of view, it also saves you having to select a shade,

which can at times be complicated. At the same time, you will be convinced by the aesthetic final result, which will be to the permanent satisfaction of your patients.

## Clinical Case



Insufficient composite restoration in tooth 45



Prepared cavity awaiting filling



Application of Admira Fusion x-tra in 4-mm layers



Functional and aesthetic final result



# Admira® Fusion x-tra

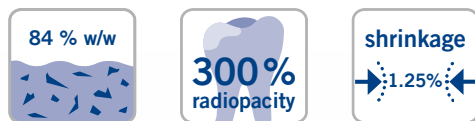
## NANO-HYBRID ORMOCER® RESTORATIVE MATERIAL

### Indications

- Class I and II posterior restorations
- Base in class I and II cavities
- Class V restorations
- Locking, splinting of loose teeth
- Repairing veneers, small enamel defects and temporary C&B-materials
- Extended fissure sealing
- Restoration of deciduous teeth
- Core build-up

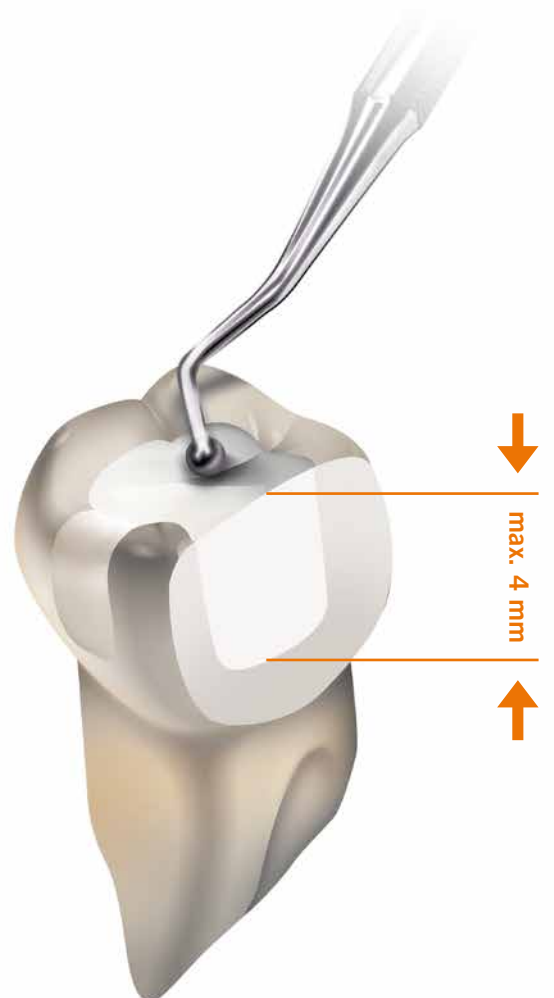
### Presentation

- REF 2810 Syringe 3 g universal
- REF 2811 Caps 15 × 0.2 g universal
- REF 9301 Dispenser – Caps



### Advantages

- Purely ceramic-based, bulk fill restorative material
- Fast and high-quality – reliable curing of 4 mm layers
- Thanks to the most innovative ORMOCER® technology – by far the lowest polymerisation shrinkage (1.25 % by volume) and particularly low level of shrinkage stress, providing optimal marginal integrity – inert, so excellent biocompatible and extremely resistant to discolouration
- Excellent handling, simple high-lustre polishing procedure coupled with high surface hardness guarantee first-class long-term results
- Universal shade with chameleon effect
- Compatible with all conventional bonding agents
- In terms of materials science identical to the universal restorative material Admira Fusion – a perfectly matched system



# Admira® Fusion x-base

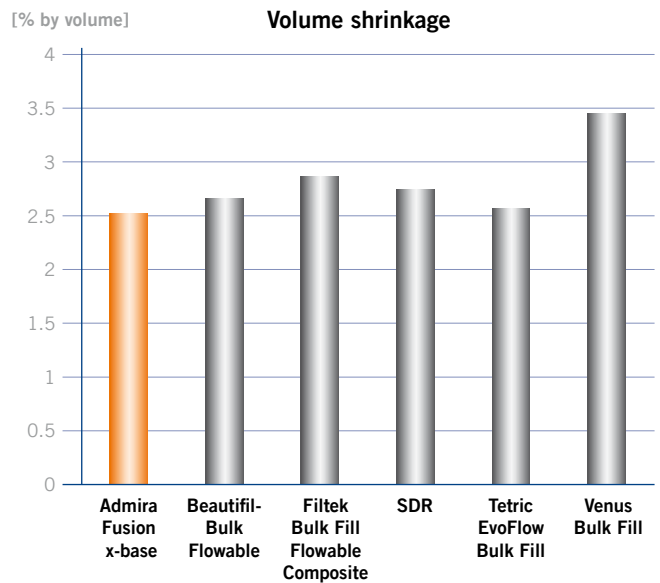
**FLOWABLE. BIOCOMPATIBLE. BULK.**

Just like Admira Fusion x-tra, the flowable bulk fill version Admira Fusion x-base offers reliable curing with layer thicknesses of up to 4 mm. Its self-levelling behaviour and its perfect surface affinity mean that Admira Fusion x-base can be applied simply and quickly. It is also characterised by outstanding adaptation to the cavity walls.

## Added reliability

The placement of increments with packable material can pose a challenge, particularly in hard-to-reach areas. The flowable Admira Fusion x-base cures reliably in increment thicknesses of up to 4 mm, allowing you to work quickly and efficiently. Its self-levelling ability and its excellent adaptation to the cavity walls offer additional handling advantages. Following light-curing, all that remains is to apply an occlusal covering layer.

In combination with extremely low shrinkage (2.5 % by volume), it is possible to fill large cavities reliably and with optimal marginal integrity.



Source: In-house measurement, 2017

## Clinical Case



Occlusal caries in tooth 36



Cavity prepared for further procedure in accordance with the rules of adhesive filling therapy



Selective etching of the tooth enamel



Application of the bonding agent Futurabond M+



Application of Admira Fusion x-base in 4-mm layers



Light-curing



Covering with Admira Fusion, followed by light-curing



Functional and aesthetic final result

Source: Prof. Dr. Jürgen Manhart, Munich / Germany

## Admira® Fusion x-base

### NANO-HYBRID ORMOCER® RESTORATIVE MATERIAL

#### 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 minimally invasive filling therapy

Class III and V restorations

Extended fissure sealing

Undercut blockout

Repair of small enamel defects

Repair of small defects in aesthetic indirect restorations

Repair of temporary C&B-materials

Core build-up

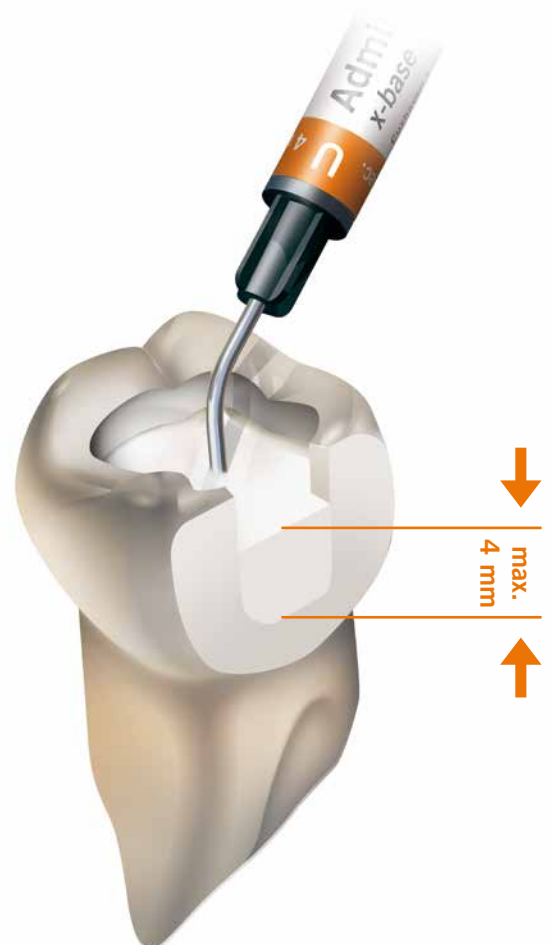
#### Advantages

- Purely ceramic-based
- Fast and high-quality – 4 mm restoration base in one simple step
- Thanks to the most innovative ORMOCER® technology – extremely low polymerisation shrinkage (2.5 % by volume) and particularly low level of shrinkage stress, providing optimal marginal integrity
  - inert, so excellent biocompatible and extremely resistant to discolouration
- Perfect surface affinity for outstanding adaption
- Excellent handling, even in difficult-to-access areas
- Available in the non-dripping NDT®-syringe
- Compatible with all conventional bonding agents and composites / ORMOCER® restorative materials

#### Presentation

REF 2812 Syringe 2 × 2 g universal, accessories

REF 2148 Application cannulae type 46, 100 pcs.



Beautiful-Bulk Flowable, Filtek Bulk Fill Flowable Composite, SDR, Tetric EvoFlow Bulk Fill and Venus Bulk Fill are not registered trademarks of VOCO GmbH.

# Admira® Fusion

## UNIVERSAL NANO-HYBRID ORMOCER® RESTORATIVE MATERIAL

### Indications

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



### Presentation

- REF 2750 Set + bond syringe 5 x 3 g (A2, A3, GA3.25, A3.5, Admira Fusion x-tra), shade guide + Futurabond U *SingleDose* 20 pcs., accessories
- REF 2780 Set + bond Caps 75 x 0.2 g (15 each of A2, A3, GA3.25, A3.5, Admira Fusion x-tra), shade guide + Futurabond U *SingleDose* 20 pcs., accessories

### Advantages

- The worldwide first purely ceramic-based restorative material
  - Pure Silicate Technology, i.e., fillers and resin matrix based purely on silicon oxide
  - contains no classic monomers
- Thanks to the most innovative ORMOCER® technology
  - by far the lowest polymerisation shrinkage (1.25 % by volume) and particularly low level of shrinkage stress in comparison to conventional restorative composites
  - inert, so excellent biocompatible and extremely resistant to discolouration
- Completely universal – meeting highest demands in anterior and posterior regions
  - perfect coordination of translucence with opacity for natural results
  - the optimal selection of shades enables highly flexible working using either the single or multiple shade system
- Excellent handling, simple high-lustre polishing procedure coupled with high surface hardness guarantee first-class long-term results
- Compatible with all conventional bonding agents

- REF 2778 Trial kit  
Admira Fusion Caps 9 x 0.2 g (3 each of A2, A3, A3.5), Admira Fusion Flow syringe 2 g A3, Admira Fusion x-tra Caps 3 x 0.2 g universal, accessories
- REF 2752 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	BXL <b>NEW</b>	REF 2777	REF 2805
A3.5	REF 2758	REF 2786	D3	REF 2768	REF 2796	Incisal	REF 2776	REF 2804
A4	REF 2759	REF 2787	OA1	REF 2770	REF 2798	Mixed	–	REF 2806*
GA5	REF 2760	REF 2788	OA2	REF 2771	REF 2799	*(3 each of B1, B3, D3, BL, Incisal)		

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