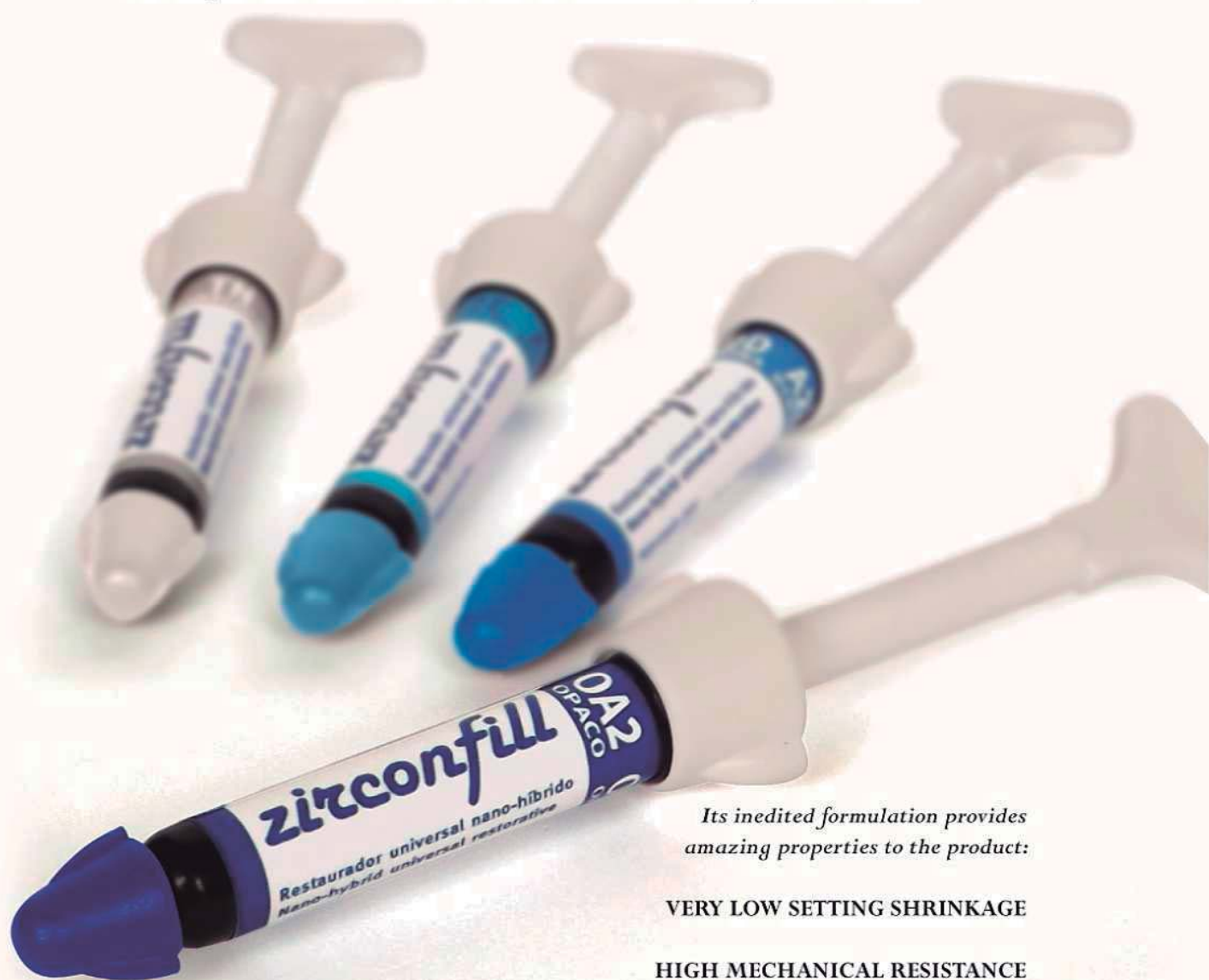




zirconfill®

Zirconfill® is a nano-hybrid, light curable composite resin, developed to be used in the restoration of anterior and posterior teeth.



***new!
novelty!
innovation!***

Its inedited formulation provides amazing properties to the product:

VERY LOW SETTING SHRINKAGE

HIGH MECHANICAL RESISTANCE

SUPERIOR CONVERSION DEGREE

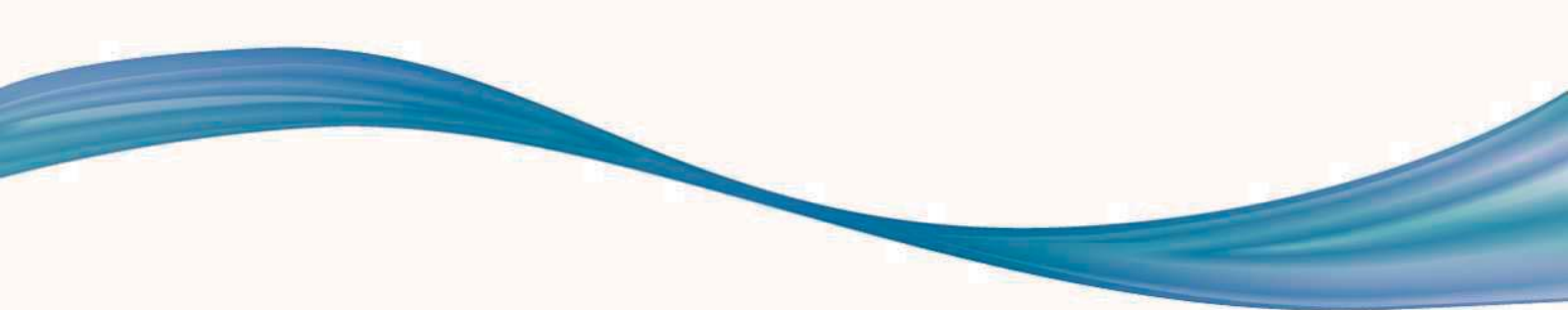
EXCELLENT SURFACE SMOOTH

EXCELLENT WORKABILITY

RADIOPACITY

EXCELLENT OPTICAL CHARACTERISTICS

SUPERIOR MIMETIC PROPERTIES



Diatomite, despite being a kind of silica, has peculiar and individual structural characteristics that make it different from the other silica of common use for the same purpose. Moreover, until this moment, it had never been used in any other dental restorative material.

Diatomite presents a permeable structure of nanometric pores, the opposite of the other conventional silica fillers, which are compact and impermeable.

This property of diatomite allows, in the composition of Zirconfill®, a permeation of monomers through the pores of the diatomite particles. This penetration of monomers provides a great improvement of important properties:

1. The “wedge” effect of the filler inside the matrix is diminished, because of the better mechanical retention between them both, when compared to the other inorganic fillers conventionally used. Therefore, the organic matrix (portion of the composite that is responsible for the color instability) is not exposed to the oral environment, avoiding staining and allowing long lasting of the color.

2. Also because of the penetration of the monomers in the pores of the diatomite, the setting shrinkage is highly reduced, since a higher percentage of the inorganic filler is aggregated to the organic matrix.

3. At last, the possibility of incorporation of a high filler content increases the main mechanical characteristics of Zirconfill®, such compression resistance, diametral compression resistance, flexural resistance, micro hardness and wear resistance, when compared to the other composites available in the market.

SUPERIOR CONVERSION DEGREE OF MONOMERS INTO POLYMERS

The Conversion Degree analysis of a composite resin indicates, in the clinical practice, how much it is able to support the challenges imposed by the oral environment.

A resin that presents a high conversion degree has less free residual monomers inside its organic matrix.

Therefore, a high conversion degree allows:

1. Increase of mechanical properties;
2. Reduction of the water absorption by the resin;
3. Higher color stability.

The evaluation of the Conversion Degree of Zirconfill®, light cured by LED and by halogen light, has been made, using Fourier Transform Infrared Spectroscopy (FTIR), and later confirmed by high performance liquid chromatography (HPLC). The results obtained were 95% and 96%, respectively, the higher conversion degree among the resins available in the market nowadays.

EXCELLENT WORKABILITY

Zirconfill® presents softness, rheological stability, easy insertion and sculpture and it does not stick to the instruments; aspects highly valued by the professionals when they are choosing a composite resin.

The excellent workability of Zirconfill® is a consequence of the perfect adjust of the formulation, which has provided the resin a great thixotropism, property of becoming softer under pressure. This characteristic eases the handling, insertion and settling of Zirconfill® inside the dental cavity.

***zirconfill®** a new state of the art*

Scientific research clearly demonstrate that possible improvements in composite resins are related to changes in their inorganic filler compound, not only respect percentage, mas also in relation to size, change, distribution inside the polymeric matrix and, most important, respect the kind of material used as fillers in dental composites.

In its composition, Zirconfill® has well known conventional silica fillers, associated, for the first time, with zirconia and diatomite, which is a porous silica.

The state of art is the highest level of development of a material, a technique or a scientific field, reached in a certain period. For this reason, the insertion of diatomite in the composition of Zirconfill® is a real innovation in the formulation of restorative materials in century XXI.

ZIRCONFILL® ORGANIC MATRIX

The organic matrix in Zirconfill® is made of the most modern combination of monomers, following the most recent technological concepts and tendencies among the last generation composite resins.

The organic matrix combines 4 dimethacrylate monomers: Bis GMA (bisfenol A diglicidil methacrylate), Bis EMA (ethoxylated bisfenol A dimethacrylate), TEGMA (trietilenoglicol dimethacrylate) and UDMA (urethane dimethacrylate).

ZIRCONIA

Zirconfill® presents, among the components of its inorganic filler, a Zirconia/Silica Mixed compound.

This Zirconia/Silica Mixed filler is obtained by a special chemical process, and is presented under the form of nanoparticles and nanoagglomerate s (nanoclusters).

The nanoclusters are agglomerates of nanoparticles that work as a single unit, allowing that a higher percentage of inorganic filler is incorporated to the resin, and generating smaller spaces between the filler particles inside the organic matrix.

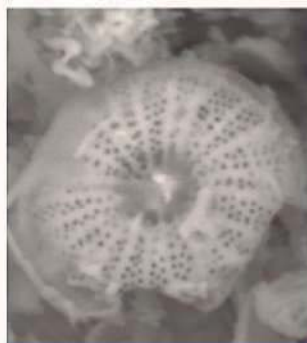
This structure provides the resin Zirconfill® with superior mechanical properties, such as compression resistance, diametral compression resistance, flexural resistance, micro hardness and wear resistance, when compared to the other composites available in the market.

At the same time, exactly because of the presence of the nanometric particles, the Zirconia/Silica Mixed compound in Zirconfill® provides the resin with a longer ability of polishing maintenance and excellent surface smoothness.

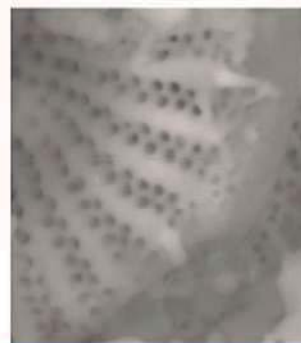
DIATOMITE – THE INNOVATION

Silica has been historically used as a filler in composite resins.

Zirconfill® presents an innovative filler of diatomite, which is a porous silica.



Magnification 7000X



Magnification 15000X

COLOR SYSTEM

OPAQUE	DENTINE	ENAMEL	TRANSLUCENT
OA2	A1D	A1E	T -neutral
OA3	A2D - Universal Dentine	A2E	T-blue
	A3D	A3E	T-yellow
	A3,5D	A3,5E	T-orange
	A4D	A4E	T-gray
	B1D	B1E	
	B2D	B2E	
	B3D	B3E	
	C2D	C2E	
	C3D	C3E	
	D-Bleach	E-Bleach H (high)	
		E-Bleach M (medium)	
		E-Bleach L (low)	

* For the professionals that prefer the use of a simplified technique,
the dentine color A2D is equivalent to Universal Dentine.

* The colors D-Bleach e E-Bleach are indicated for bleached teeth.



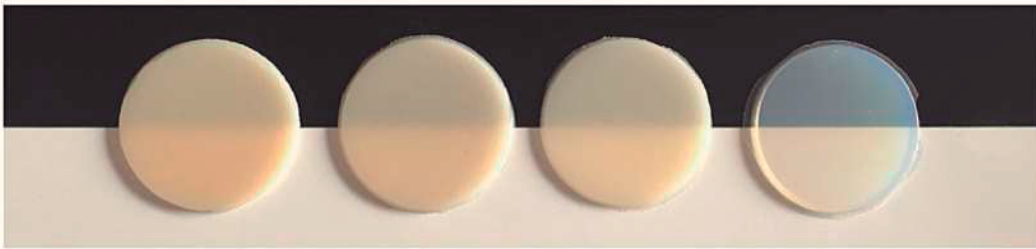
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presentation

Zirconfill® has been developed to provide the dentist, the main optical characteristics desired from a composite resin:

- Opacity,
- Fluorescence and
- Opalescence.

In addition, Zirconfill® allows the dentist to work in the stratification technique, with resins available in 4 different degrees of opacity/translucency, making it possible to perform restorations with extremely natural color effects



Zirconfill® is presented in syringes with 4g, color-coded for an easy visual identification and choice by the professional.

