# Bteeth®

## COLOURS ON CERAMIC PRODUCTS FOR DENTAL USE

Producer:

COLOROBBIA
CONSULTING

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# BTEETH®:
# COLOUR LINE FOR DENTAL CERAMICS ZIRCONIA

The technological evolution of dental laboratories will be increasingly based on the use of innovative materials that guarantee qualitatively high level results with repeatability and reliability, without compromises between aesthetic and functional results.

For this reasons, the BTeeth® colouring line for the pre-sintered zirconia was developed and produced by Colorobbia Consulting s.r.l., combining ceramics colours know-how with the experience of qualified dental technicians and dental ceramics experts.

BTeeth® is a versatile material and, thanks to its structural feature, has an high degree of penetration inside the presintered zirconia, allowing a complete colouring of the prosthetic restoration, avoiding, in case of retouching, pearly not coloured areas.

The main features of the BTeeth® colouring line are the deep penetration into the ceramic material and the simultaneous homogeneous diffusion. The penetration and the uniform diffusion of the dye solutions depend on various elements, e.g. the chemical nature of the solutions and the type of substrate used.

The chemical composition of the dough and the baking cycle have influence not only on the penetration but especially on the coloration development. The colorations of the BTeeth® line are based on the presence of metals transition chromophores, that can be present in more than one valence state and this permits that the same chromophore ion can present itself with different colouring.

In the BTeeth® series, the innovative process of the colour formation is possible thanks to the “in situ” creation ceramic technology of stable and coloured crystal structures.

This technique has been developing starting from a ten years long experience of Colorobbia Consulting Srl in the field of high temperature ceramic pigments. It allows the chromophores within the host crystal lattice to generate distortion of the crystal lattice, during the sintering process of zirconia.

Therefore, this event will bring to an electronics bands distortion and finally to the colours creation, that can be “a priori” designed, carefully formulating precursors mixtures.

For these reasons, the BTeeth® line is suitable for colouring zirconia in the crystalline tetragonal form. Actually the developed technique allows to plug appropriate “reagents” cluster into the cavities of the structure, so to give the desired chromatic properties to the material. The products of the BTeeth® line are CE certified for their production process, packaging and stability.

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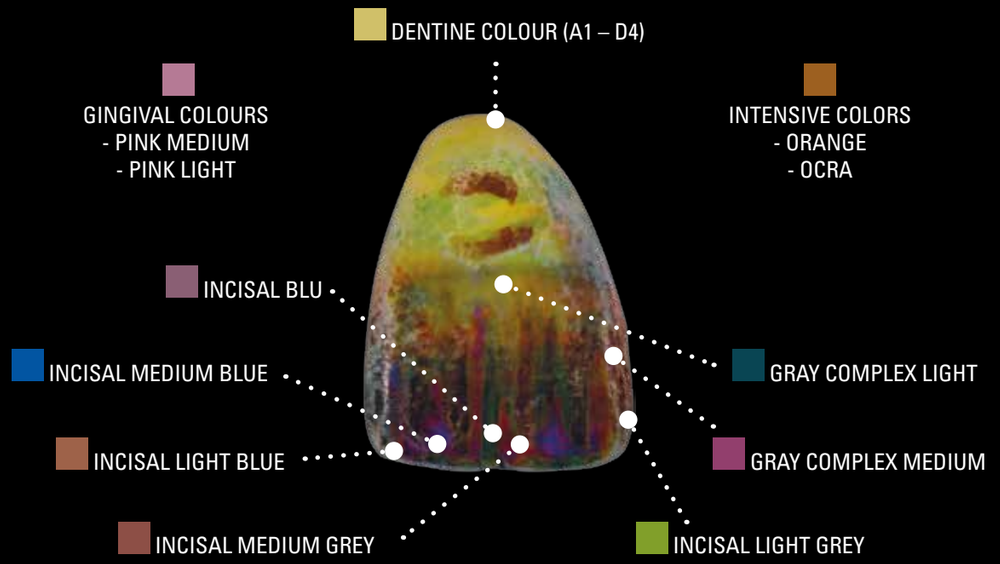
# BTeeth® COLOURS

The BTeeth® application purpose on dental zirconia is to obtain all the available colours in the "VITA" samples set from A1 to D4 for dentinal colorations, besides two intensive masses, Orange and Ochre, and two Purple (Medium and light Pink) masses for colouring gingival tissues. Moreover, there are also 7 incisal colours that allow excellent customization of incisal areas. The product is sold in three different pack sizes: 50ml bottles, 25ml bottles and 6ml pens. Bottle packages are designed for dentin colour, without tracers for the immersion technique, while 6ml pens are designed for dentin colours and for intensive and incisal masses and so include tracers added to differentiate visibility during application.

Following the products identification:



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# BASIC INSTRUCTIONS FOR THE APPLICATION

## 1. Preparation of zirconia surface before the coloration

When the zirconia is milled with the aid of lubricating refrigerants, it's necessary removing the article from the disk and after the execution of manual finishing of the piece, it is advisable to perform a thorough cleaning with distilled water in an ultrasonic bath at low frequency. This procedure allows to totally remove the absorbed fluid during the milling phase. Before staining, it's better to completely dry, using a microwave convection oven or an infrared lamp or other suitable heating system.

After drying milling, any dust must be completely removed before the coloration phase.

## 2. Instructions for the colour technique

The BTeeth® product line allows the colouring of zirconia trough three different techniques:

- Immersion
- Immersion and pen customizing
- Pen customized coloring

### IMMERSION TECHNIQUE

- Shake the bottle before use.
- Pour the contents into a container (glass or plastic) where the pieces can be immersed.
- Soak the pieces for a minimum of 20 seconds (the increase of immersion time does not give shade or chroma variations, but allows the colour to penetrate more deeply).
- After 20 seconds of immersion, take the pieces with a plastic tweezers and blow air on the pieces;
- Dry the pieces in oven or with infrared lamp for a minimum of 30 minutes.
- Take care to store the liquid in well closed containers (avoid the evaporation of the aqueous part, because it may induce crystallisation of the product).
- For a long-term storage after opening it is recommended to keep the product at a storage temperature between 15 and 35 ° C.

## IMMERSION AND PEN CUSTOMIZING

- Shake the bottle before use.
- Pour the contents into a container (glass or plastic) where the pieces can be immersed.
- Soak the pieces for a minimum of 20 seconds (the increase of immersion time does not give shade or chroma variations, but allows the colour to penetrate more deeply).
- After 20 seconds of immersion, take the pieces with a plastic tweezers and blow air on the pieces;
- Dry the pieces in oven or with infrared lamp for a minimum of 30 minutes.
- Shake the pen before use.
- Compress lightly the tank of the pen to fill smaller tanks just above the bristles.
- Let the zirconia absorb the desired colour until it can absorb it (immersion time increasing does not influence the intensity of colour, but only permits a greater penetration).
- After the pen colouring is finished, it is advisable dry in the oven or with infrared lamp for a minimum of 30 minutes after use.
- After use, carefully close the pen with its cap.
- Take care to store the liquid in well closed containers (avoid the evaporation of the aqueous part, because it may induce crystallisation of the product).
- For a long-term storage after opening is recommended to keep the product at a storage temperature between 15 and 35 ° C.

## PEN CUSTOMIZED COLORING

- Shake the pen before use.
- Compress lightly the tank of the pen to fill smaller tanks just above the bristles.
- Let the zirconia absorb the desired colour until it can absorb it (immersion time increasing does not influence the intensity of colour, but only permits a greater penetration).
- After the pen colouring is finished, it is advisable dry in the oven or with infrared lamp for a minimum of 30 minutes.
- After use, carefully close the pen with its cap.
- Take care to store the liquid in well closed containers (avoid the evaporation of the aqueous part, because it may induce crystallisation of the product).
- For a long-term storage after opening is recommended to keep the product at a storage temperature between 15 and 35 ° C.
- It's not recommend recharging the pen because, after 6ml use, the brush tip may be deteriorated and it is not guaranteed a uniform product application. Besides, the pen are produced with tracer to make colour distribution easy to see, before firing.



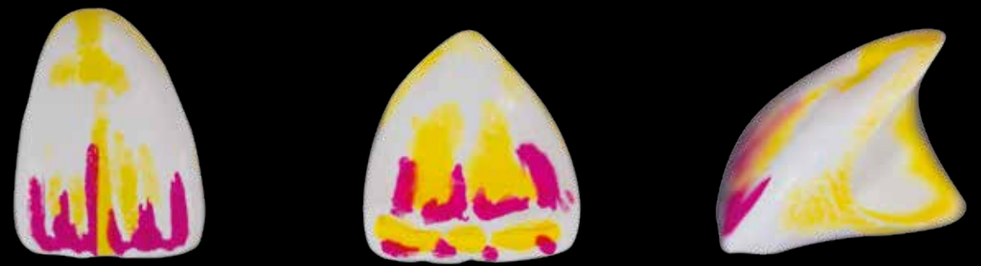
# 3. EXAMPLES OF COLORATION

Below there are two examples of zirconia prosthesis colouring obtained by the technique of successive layers. The two examples represent extremities of a wide range of different possibilities in multi layers application from the simplest to the most complex caso.

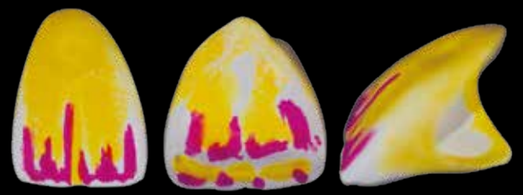
### Example 1

1 Start colouring with blue (purple tracer) the maximum translucency areas, drawing the dentinal peaks.

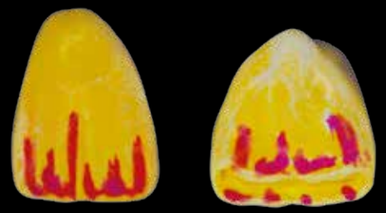
2 Stain with a chromatic colour the shadow areas or areas that need more chroma. Starting for example with an A3 colour base, it is necessary to mark the "warm" areas with C4 (yellow tracer). According to the final colour to be achieved you can use any other chromatic A3 colour.



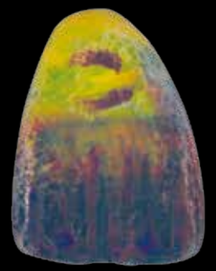
3 Paint the body of the tooth areas with base colour A3 (yellow tracer), leaving the front areas and the incisal margin without colouring.



4 Colour the front areas with a light-coloured base A1-B1-C1, thinking to the final effect of the incisal enamel that we want to achieve.

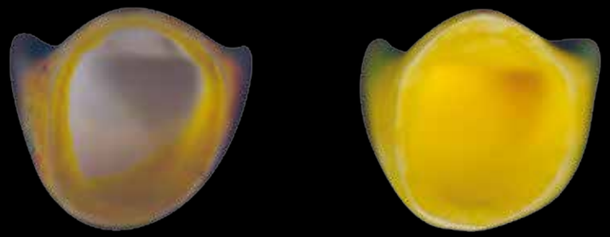


5 Stain in the vertical direction with the colour Medium Grey (brown tracer) next to the Blue colour. Continue vertically until the entire incisal is completed, contrasting the Grey Complex Medium (fuchsia tracer), the Blue Light (red tracer) and the Grey Light (green tracer). Finally shade off the Complex Light Grey (seawater tracer), on the incisal area up to half of the tooth, over the third cervical medium to get a more dentin translucent effect.



6 Only after the external colouring is completed, proceed to colour the internal part of the crown or the saddle of the intermediates in case of pontic.

*Before sintering*







*After sintering*

## Example 2

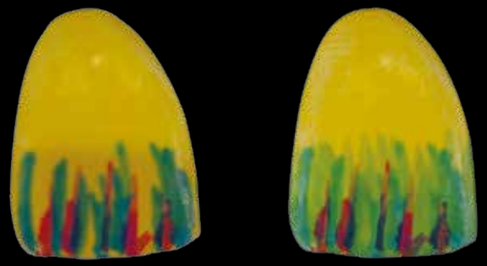
1 Colour the more chromatic areas.

2 Colour the body of the teeth with base colour (A1-D4).

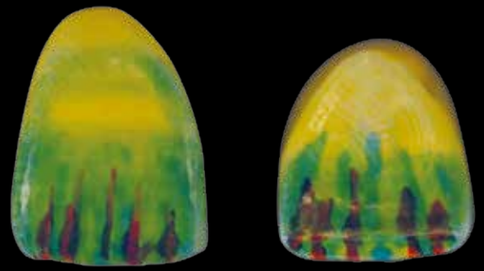
3 Colour the incisal edge of the most evident translucency areas with Blue colour (purple tracer).

4 Colour the incisal sides and the incisal margin by dentin lighter colours.

5 Contrast vertically incisal colours.



6 Finish with the Light Grey Complex (seawater tracer) shading on the incisal area up to half of the tooth.



7 Colour the internal part of the crown, only after external colouring is finished.

8 How is the result after sintering.



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