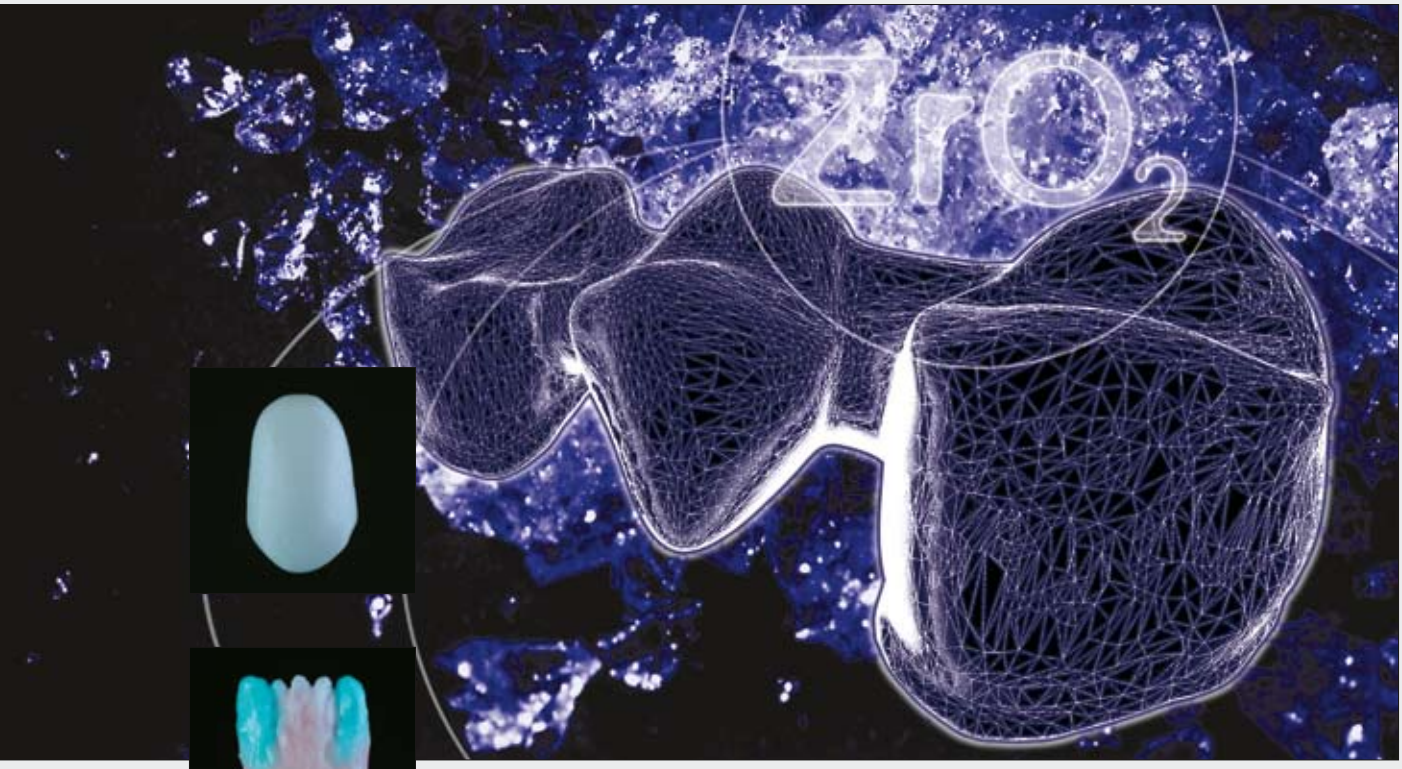






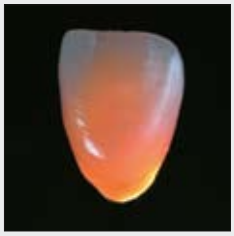

CE 0483

# Triceram®

## on zirconium oxide

The ceramic
for CAD/CAM technology

Product information and instructions for use

DENTAURUM

**Dear customer,**

your choice of Dentaurum products welcomes you to a world of well harmonized and meticulously coordinated quality products for the production of aesthetical ceramic work.

The most important factor when producing ceramic restaurations is to maintain precision whilst following the Triceram® instructions for use for zirconium oxide.

In this brochure you will find many practical tips for using our products. Further information for processing Triceram® can be found in our brochure "Working tips for Triceram®" (REF 989-676-20).

Additionally, we are here to support you should you have any more questions on working with our products.

Our dental technical advisors are available for any questions regarding working with our products.

**Hotline Tel. No. +49 72 31 / 803 - 440**

Information and instructions for use on the Dentaurum ceramic system can be found in the internet under

**www.dentaurum.de**

**Contents**

Fig. 1

## 1. Triceram®, the ceramic for CAD/CAM technology

### 1.1. Zirconium oxide ($ZrO_2$)

Most of the zirconium oxide ($ZrO_2$) used in restorative dentistry is so-called yttrium stabilized TZP ceramic (tetragonal zirconia polycristal). This is a polycrystalline ceramic consisting of yttrium stabilized tetragonal $ZrO_2$ particles. This material decrees outstandingly high mechanical strength and fracture toughness, it is white or off-white in colour with a certain translucency resembling natural dentition and opens up entirely new possibilities for large spanned, metal-free, aesthetical and challenging restorations. The high strength and fracture toughness of zirconium oxide ceramic (Y-TZP) is estimated to withstand extreme, long-term stress in the molar region with excellent clinical prognosis.

The outstanding strength of TZP ceramics is due to its fine crystalline structure and ability to resist cracking through transformation. Y-TZP ceramics consist of tetragonal zirconium oxide particles, which due to their size, the pressure of the surrounding matrix and the addition of Yttrium oxide, remain stable at room temperature. When these tetragonal stablized particles are subjected to energy in the form of tension, such as from a progressing crack, they transform into the stable monocline modification. The material is able to absorb the tension and due to a growth in volume, which goes in hand with the tetragonal monocline transformation, compressive strength is increased in that particular area. Not only is the tension removed from the crack tip but the build up in compressive strength increases the resistance.

Fig. 2

### 1.2. Bonding strength, flexural strength and chemical resistance

Triceram® is the ideal partner for the materials titanium and zirconium oxide in the dental CAD/CAM technology. Both framework materials produce an exceedingly strong bond by means of special procedures. Zirconium oxide achieves a bonding strength of 40 MPa (according to Schmitz-Schulmeyer).

Fig. 3

Fig. 4

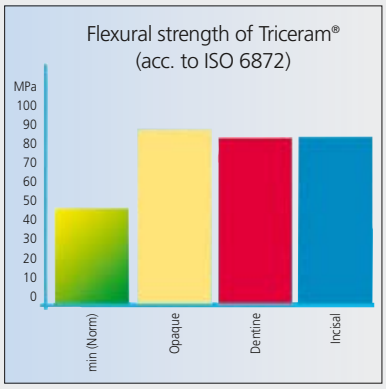

Fig. 5: Flexural strength

## Solubility

The permissable level of solubility in the hydrolysis test is max.100 µg/cm² according to ISO 9693.

**Measured values Triceram®:**

Opaque: 55 µg/cm²

Dentine: 31 µg/cm²

Incisal: 31 µg/cm²

This shows the solubility is distinctly lower than the permissable level.

Fig. 6: Solubility of individual materials

## CTE (25-500 °C / 77-932 °F):

Triceram® Liner: → 9.4 x $10^{-6}$ $K^{-1}$

Triceram® Dentine: → 8.6 x $10^{-6}$ $K^{-1}$

Triceram® Incisal: → 8.6 x $10^{-6}$ $K^{-1}$

Fig. 7: CTE values of individual materials

The fluo liner which has been specially developed for zirconium oxide guarantees on white, unstained framework the accurate reproduction of vita classic tooth shades and natural fluorescence without the hindrance of light transmission from the framework. The special physical properties of Triceram® on zirconium oxide framework and its favourable aesthetics have been confirmed in various independent studies. In addition Triceram® clearly beats the required minimal standard (EN ISO 6872) for flexural strength (Fig. 5) and considerably exceeds the required level of chemical resistance (Fig. 6).

### 1.3. Tips for the ceramic bond

The physical and thermal properties of Y-TZP and its unique appearance necessitates a specially developed veneering ceramic and processing procedure. As with other familiar ceramic materials, the zirconium oxide framework and its relevant ceramic forms a bonds primarily using compressive strength. For this reason the CTE of the ceramic Triceram® (Fig. 7), must be smaller than the CTE of the zirconium oxide framework (CTE approx. 10.5 x $10^{-6}$ $K^{-1}$). In order for the ceramic to shrink evenly and develop an equal amount of compressive strength across the substructure, the framework must be designed as a smaller anatomical version of the end product, without any sharp sides or edges. The veneering ceramic requires sufficient space in order to ensure it is applied in an even thickness. Thicknesses of over 2 mm must be avoided. Please observe the information in section "processing techniques" in these instructions for use.

[1]
- University of Freiburg, Prof. Dr. Kappert H.F.: Bruchfestigkeit und Frakturverhalten von DCS-gefrästen Frontzahnkronen nach Verblendung mit Vitadur D und Triceram®, ZWR, 2001: 134-139, (DC-Zirkon®)
- University of Nantes, Frankreich, Praud C.: Dissertation: Rapport de la Céramique Triceram® à la réalisation de prothèses céramo-métalliques sur Titane: 1999
- University of München, Bader R.-D., Aschl I., Rammelsberg P. Pospiech P.: IADR Abstracts 1021: Improved bond strength of low fusing ceramics to titanium: 2000
- University of Zürich, Dr. Irena Sailer, Dr. Claudia Holderegger, Dr. Roland Jung, ZTM Ana Suter: Zirkonoxid-Verblendkeramiken: Farbstabilität und technische Verarbeitung, Quintessenz Zahntechnik 5/2005, S. 498-512
- University of Modena, ZTM Bruno Marziali, Dr. Giuliano Malaguti und Prof. Sergio Bortolini: Titan und Zirkoniumdioxid, Quintessenz Zahntechnik 6/2006, S. 632-647
- University of Zürich, PD Dr. med. dent. Dr. rer. nat. Jens Fischer, Dipl.-Ing. (FH) Bogna Stawarczyk: Zirkoniumdioxid und Titan: Zwei Gerüstwerkstoffe – eine Verblendkeramik, DZW-Zahntechnik 12/06, S. 20-22

## 2. Processing techniques

### 2.1. Framework design and preparation

The dental ceramic and framework materials are usually designed to harmonize thermically. This ensures that the state of stress, which occurs during the cooling phase after having been fired, is ideal for both materials. Amongst other factors, the state of stress is influenced by the geometrical design of the substructure.

For this reason, please observe the following basic principles:

- The framework must represent the final tooth shape in reduced anatomical form. Missing material must be replaced by building up the zirconium oxide framework and not the veneering ceramic.
- Avoid sharp sides and edges. Always integrate anatomically rounded forms and smooth transitions into the design. Avoid undercuts.
- The framework should be designed so that the ceramic may be applied in a uniform thickness.
- The maximum ceramic thickness is 2 mm.

Frameworks with holes or cracks must not be used!

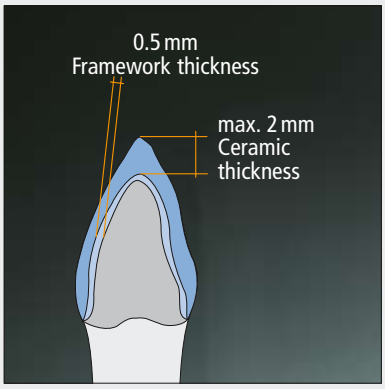

Fig. 1

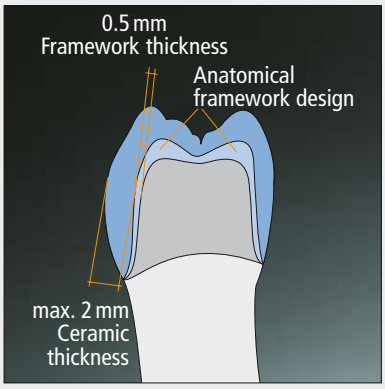

Fig. 2

### 2.2. Advice on processing the framework

Finishing and sandblasting milled or ground framework carries the risk of superficial alteration in the structure of the Y-TZP and should be reduced to a minimum. Please only use the tools recommended (eg. the finishing set, REF 137-840-00) at the relevant revolutions per minute, under moderate pressure. Take exceptional care when grinding the connectors. Please bear in mind the minimum cross section required, stipulated by the material manufacturers. When separating the fired ceramic interdentally with a separating disc, never allow the disc to cut into the underlying framework. Please do not overheat the framework when grinding, use water to cool the object down when necessary. When sandblasting the framework, please follow the manufacturers instructions. The framework should be cleaned before the ceramic build-up using a steam cleaner.

Fig. 3: Finishing set REF 137-840-00

Fig. 1

Fig. 2

Fig. 3

Fig. 4

### 2.3. Applying the Fluo Liners

Fig. 1:

Prepare the framework surface according to the manufacturers instructions.

Fig. 2:

Mix the liner to the relative tooth shade (see the mixing recommendations) using Universal B.O.L liquid REF 299-180-40, until it has a creamy consistency. Apply the Fluo Liner evenly onto the framework enough to cover it thoroughly and then fire. The Fluo Liner gives the framework the ideal base shade and fluorescence. A second coating may be given.

**Mixing recommendations:**

| Tooth shade | FL 1 | FL 2 | FL 3 | FL 4 | FL 5 | FL 6 |
|---|---|---|---|---|---|---|
| **A1** | 1/3 | | | | 2/3 | |
| **A2** | 2/3 | | | | 1/3 | |
| **A3** | 1 | | | | | |
| **A3.5** | 3/4 | | | | | 1/4 |
| **A4** | 1/2 | | | | | 1/2 |
| **B1** | | 1/3 | | | 2/3 | |
| **B2** | | 2/3 | | | 1/3 | |
| **B3** | | 3/4 | | | 1/4 | |
| **B4** | | 1 | | | | |
| **C1** | | | 1/3 | | 2/3 | |
| **C2** | | | 2/3 | | 1/3 | |
| **C3** | | | 3/4 | | 1/4 | |
| **C4** | | | 1 | | | |
| **D2** | | | | 2/3 | 1/3 | |
| **D3** | | | | 3/4 | 1/4 | |
| **D4** | | 1/3 | | 2/3 | | |

Fig. 3:

After firing, the liner has a silky, shiny surface.

Fig. 4:

The liner can also be used on stained zirconium oxide framework to achieve an optimal shade and natural fluorescence.

### 2.4. Using the shoulder material

Triceram® offers four shoulder materials subdivided into the shade groups A, B, C and D. Using the shoulder material „white", all shade nuances from A1 to D4 can be mixed according to the mixing table. The shoulder material „transparent" increases the transparency within the shoulder. Further individual modifications can be achieved using the shoulder modifications "yellow" and "orange". Use the universal shoulder material liquid for mixing.

**Mixing recommendations:**

| Tooth shade | A | B | C | D | white |
|---|---|---|---|---|---|
| **A1** | 1/2 | - | - | - | 1/2 |
| **A2** | 2/3 | - | - | - | 1/3 |
| **A3** | 3/4 | - | - | - | 1/4 |
| **A3.5** | 1/1 | - | - | - | - |
| **A4** | 1/1 | - | - | - | - |
| **B1** | - | 1/2 | - | - | 1/2 |
| **B2** | - | 2/3 | - | - | 1/3 |
| **B3** | - | 1/1 | - | - | - |
| **B4** | - | 1/1 | - | - | - |
| **C1** | - | - | 2/3 | - | 1/3 |
| **C2** | - | - | 3/4 | - | 1/4 |
| **C3** | - | - | 3/4 | - | 1/4 |
| **C4** | - | - | 1/1 | - | - |
| **D2** | 1/3 | - | - | 1/3 | 1/3 |
| **D3** | 1/2 | - | - | 1/4 | 1/4 |
| **D4** | - | - | - | 1/1 | - |

### 2.5. Applying the shoulder material

Isolate the area to be built-up with the separating agent SM-Isofit (REF 260-324-01). Apply shoulder material from the framework to the preparation line. Allow the material to dry (using dryer or tissue), remove the coping and fire using the appropriate firing program.

The shoulder material shrinks during the sinter process in the first bake. A second and third firing will correct the material reduction. Apply SM-isofit to the areas to be built-up and then re-apply the missing material. Fire exactly the same as the first bake. After the second bake has been completed fit the coping back onto the die using the recommended grinding burs (watch the rpm! Max. 15 000 U/min). Carry out the ceramic build-up in the conventional manner.

Fig. 1: Shortened coping, after the opaque bake

Fig. 2: 1. Applying the shoulder material

Fig. 3: Coping before the 2. shoulder baks, houlder material has been built-up

Fig. 4: Coping after fitting

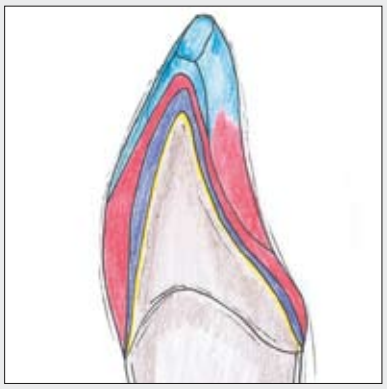

Fig. 1: Standard build-up

Fig. 2: Individual build-up

Fig. 3: Individual build-up

Fig. 4: Standard build-up

- FL Fluo Liner
- OD Opaque Dentine
- D Dentine
- IT Incisal transparent
- IO Incisal opal
- NT Neutral transparent
- Modifier (Fluo Dentine, Chroma Dentine)

Fig. 5: Alternative layers in the incisal area

Fig. 6: Detailed view

### 2.6. Layering example

Select the ceramic material according to the required tooth shade. Follow the layering suggestions in the layering diagrams.

## 2.7. Layering step-by-step

Fig. 1:

Build-up the reduced anatomical tooth form with opaque dentine.

Apply the opaque dentine OD over the entire labial surface. Ensure that the OD overlaps the incisal edge therefore lengthening the $ZrO_2$ substructure. (increases the flow of light)

Fig. 2:

Layer the dentine over the opaque dentine.

Fig. 3:

Build-up the entire anatomical shape with the dentine.

Fig. 4:

Cut back the dentine systematically in order to achieve enough space for an optimal incisal layer thickness.

Fig. 5/9:

Complete the incisal area by building up with transparency material (IT 57-IT 60).

The finished build-up before firing. With bridgework always be sure to separate the ceramic between the teeth interdentally, down to the $ZrO_2$ framework, before the first firing to allow for controlled shrinkage.

Fig. 6:

The ceramic crown after the first dentine bake. The fired results show a silky matt surface. The incisal edge is sharp and defined.

Fig. 7:

In the correction bake after the first dentine bake the dentine is applied so that it tapers off towards the incisal edge. This is then built-up in incisal material.

Fig. 8:

Grinding the ceramic: Grind the shape and correct the function using diamond sintered burs or stones. The surface conditioning and surface design can also be undertaken using diamond sintered burs, stones or rubber burs. After grinding, carefully steam and clean.

Fig. 10/11:

The object is glazed without the use of glaze material. Paint specific colour modifications directly onto the surface with stains. Mix the stains using stains universal liquid. Conduct the glaze bake as required. Rubbered surfaces require lower final temperature. A natural looking gloss can also be achieved by polishing the surface.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

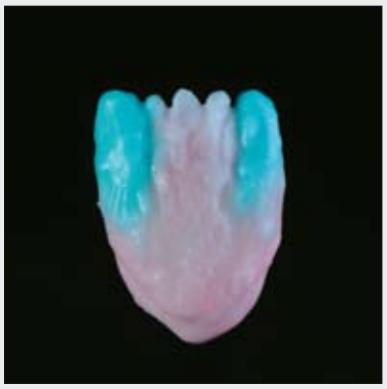

Fig. 5

Fig. 6

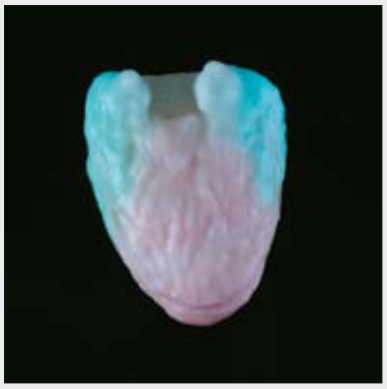

Fig. 7

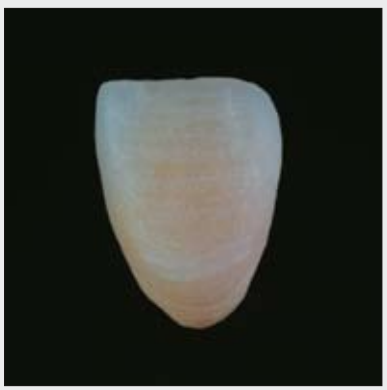

Fig. 8

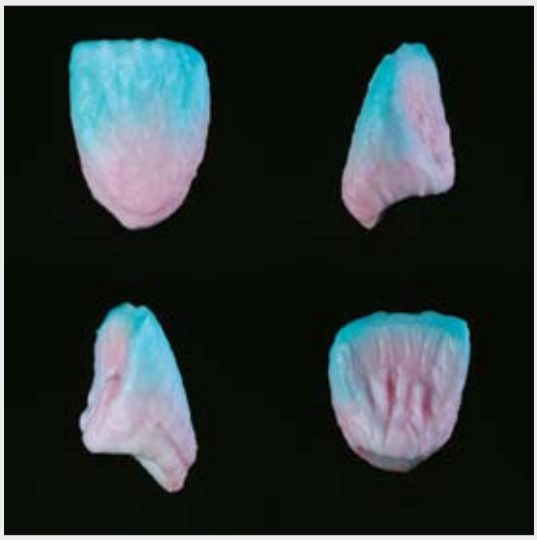

Fig. 9

Fig. 10

Fig. 11

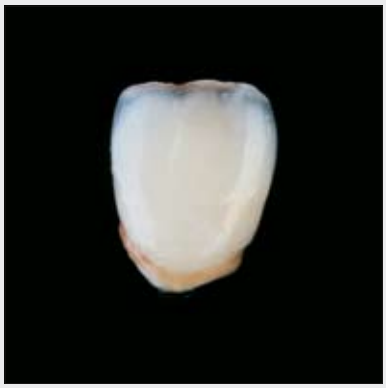

Fig. 1: The young tooth

Fig. 2: The middle aged tooth

Fig. 3: The mature tooth

Fig. 4: The aged tooth

### 2.8. Using the Stains Universal

The stains universal allow shade modifications to be made. They can either be embedded within or mixed together with the ceramic. It is possible to mix up to 10 % stain into various ceramic materials. In addition, these materials can be used together with the stains universal liquid to stain the surface of the ceramic. These stains universal materials are distinguished by the individual characteristics possible and depth of colour.

| | |
|---|---|
| Body ST A | ST 7 dark pink |
| Body ST B | ST 8 purple |
| Body ST C | ST 9 blue |
| ST 0 neutral | ST 10 grey |
| ST 1 white | ST 11 olive green |
| ST 2 vanilla | ST 12 olive yellow |
| ST 3 yellow | ST 13 middle brown |
| ST 45 orange plus | ST 14 reddish brown |
| ST 6 pink | ST 15 black |

Photo credits:
Bruno Martin, Le Plessis Grammoire, France
Photo sequence: The tooth and its journey through time

Fig. 1: Master set ZR

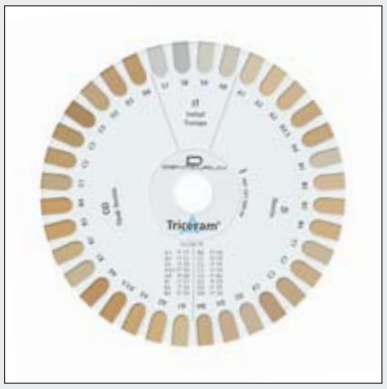

Fig. 2: Shade wheel Basic materials I

Fig. 3: Shade wheel Effect materials II

Fig. 4: Shade wheel Effect materials III

## 3. Information about the ceramic system

### 3.1. Products and their components

**FL Fluo Liner**
1, 2, 3, 4, 5, 6

**SM Shoulder**
A, B, C, D

**SM Modifier**
white, transparent

**OD Opaque Dentine**
A1, A2, A3, A3.5, A4, B1, B2, B3, B4,
C1, C2, C3, C4, D2, D3, D4

**D Dentine**
A1, A2, A3, A3.5, A4, B1, B2, B3, B4,
C1, C2, C3, C4, D2, D3, D4

**Bleach**
Bleach CO 1, Bleach CD 1, CD 2, Bleach CI 1

**CD Chroma Dentine**
A, B, C

**IFD Intensive Fluo Dentine**
cream, yellow, orange, orange plus

**IT Incisal transparent**
57, 58, 59, 60

**IO Incisal opalescence**
57, 58, 59, 60, ice white, polar white,
snow white, sky blue, amber

**NT Neutral transparent**
NT

**CM Correction**
CM

**TE Transpa Effect**
white, yellow, pink, honey, blue, brown

**G, GD Gingival**
light, dark

**ST Stains universal**
A, B, C, 0, 1, 2, 3, 45, 6, 7, 8, 9,
10, 11, 12, 13, 14, 15

**Universal liquid**
Universal pastes, Shoulder materials,
Stains universal, Modelling liquid MV,
Modelling liquid LV standard,
Modelling liquid LV+, B.O.L.-, SM-Isofit

### 3.2. Shade classification table

| | A1 | A2 | A3 | A3.5 | A4 | B1 |
|---|---|---|---|---|---|---|
| **FL Fluo Liner** (1, 2, 3, 4, 5, 6) | 1/3 L1 + 2/3 L5 | 2/3 L1 + 1/3 L5 | 1 L1 | 3/4 L1 + 1/4 L6 | 1/2 L1 + 1/2 L6 | 1/3 L2 + 2/3 L5 |
| **SM Shoulder** (A, B, C, D) | 1/2 A + 1/2 W | 2/3 A + 1/3 W | 3/4 A + 1/4 W | A 1/1 | A 1/1 | 1/2 B + 1/2 W |
| **SM Modifier** (W, T) | X | X | X | X | X | X |
| **OD Opaque Dentine** | X | X | X | X | X | X |
| **Bleach** | | | | | | For Bleaching shades |
| **D Dentine** | X | X | X | X | X | X |
| **CD Chroma Dentine** (A, B, C) | A | A | A | A | A | B |
| **IFD Intensive Fluo Dentine** (cream, yellow, orange, orange+) | | | | | | Fluorescent, st |
| **IT Incisal transparent** | IT 57 | IT 57 | IT 59 | IT 59 | IT 60 | IT 57 |
| **IO Incisal opalescence** (1, 2, 3, 4, 5) | | | | | | Effect incisal materials for altern |
| **NT Neutral transparent** | X | X | X | X | X | X |
| **CM Correction** | | | | | | |
| **TE Transpa Effect** (1, 2, 3, 4, 5, 6) | | | | | | Incisal |
| **G, GD Gingival** | | | | | | Build-up |
| **ST Stains universal** | | | | | | Modifica |

### 3.3. Firing test

In order to determine the temperature within your furnace, we recommend carrying out a firing test. This is the only sure way to assess your furnace's firing sequences. For the firing sample mix NT material (Neutral transparent) from Triceram® with the carving liquid LV universal.

Furnace temperatures for the firing test:

- Start temperature 500 °C / 932 °F
- Drying time 8 minutes
- Temperature rise 50 °C·min$^{-1}$ / 90 °F·min$^{-1}$
- Vacuum begin 500 °C / 932 °F
- Vacuum end once the final temperature has been met at 755 °C / 1391 °F
- Holding time 1 minute with vacuum

Place the firing sample onto platinum foil, not onto firing wool otherwise there is a risk the sample may turn cloudy. If the ceramic firing sample comes out of the furnace clear and transparent with sharp edges, then the furnace is firing correctly (Fig. 1). If the furnace is firing too high then the sample will be very shiny with no sharp edges. If it is firing too low then the sample will be milky white in colour (Fig. 2). If the furnace is firing incorrectly, increase or decrease the end temperature in 10 °C / 50 °F steps and start the test again.

Fig. 1: Optimal firing example

| B2 | B3 | B4 | C1 | C2 | C3 | C4 | D2 | D3 | D4 |
|---|---|---|---|---|---|---|---|---|---|
| ²/₃ L2 + ¹/₃ L5 | ³/₄ L2 + ¹/₄ L5 | 1 L2 | ¹/₃ L3 + ²/₃ L5 | ²/₃ L3 + ¹/₃ L5 | ³/₄ L3 + ¹/₄ L5 | 1 L3 | ²/₃ L4 + ¹/₃ L5 | ³/₄ L4 + ¹/₄ L5 | ¹/₃ L2 + ²/₃ L4 |
| ²/₃ B + ¹/₃ W | B 1/1 | B 1/1 | ²/₃ C + ¹/₃ W | ³/₄ C + ¹/₄ W | ³/₄ C + ¹/₄ W | C 1/1 | ¹/₃ A + ¹/₃ D + ¹/₃ W | ½ A + ¼ D + ¼ W | D 1/1 |
| X | X | X | X | X | X | X | X | X | X |
| X | X | X | X | X | X | X | X | X | X |
| not included in the Vitapan* Classic shade wheel, white and light bleaching materials | | | | | | | | | |
| X | X | X | X | X | X | X | X | X | X |
| B | B | B | C | C | C | C | | | |
| riking dentine materials to regulate the brightness within the ceramic build-up | | | | | | | | | |
| IT 59 | IT 59 | IT 59 | IT 59 | IT 59 | IT 59 | IT 60 | IT 59 | IT 59 | IT 59 |
| ating layer build-up, bluish effects in reflecting light and orange coloured effects in passing light | | | | | | | | | |
| X | X | X | X | X | X | X | X | X | X |
| For small corrections (contact points, occlusion) | | | | | | | | | |
| alternating layer build-up, for use in incisal area, natural light refraction | | | | | | | | | |
| and reconstruction of gingiva and papillae, correction of gingival defects | | | | | | | | | |
| tions for mixing with SM, OD, D, IT, IO, TE, G and stains for glazing | | | | | | | | | |

* VITA is a trademark of the VITA Zahnfabrik, Bad Säckingen, Germany

Fig. 2: Firing sample after furnace temperature too low

### 3.4. Cleaning the furnace

Ceramic firing furnaces should be cleaned regularly to remove contamination from the inner walls of the firing chamber. For this reason we recommend:

- Regular furnace cleaning using carbon fibre platelets (REF 260-317-00)
- Base temperature: 600 °C / 1112 °F
- Drying time: 1 minute
- Heating up speed: 100 – 120 °C·min$^{-1}$ / 180 – 216 °F·min$^{-1}$
- End temperature: 1050 °C / 1922 °F
- Clean the firing tray including pins
- Holding time: 10 minutes

Select a firing program without vacuum.
Observe the furnace manufacturers instructions for use!

**Advice:**
Keep the furnace closed as much as possible in order to prevent moisture from entering the firing chamber. Always close the furnace after use, if necessary switch to the night mode.

### 3.5. Firing table standard program

| | Base temp.* | Drying time | Heat rate | Vacuum start | Vacuum end | Final temp. | Holding time | Cooling time |
|---|---|---|---|---|---|---|---|---|
| Liner bake 1 + 2 | 500 °C<br>932 °F | 4 min | 65 °C·min$^{-1}$<br>117 °F·min$^{-1}$ | 500 °C<br>932 °F | 800 °C<br>1472 °F | 800 °C<br>1472 °F | 1 min<br>under vacuum | 0 min |
| Shoulder bake | 500 °C<br>932 °F | 6 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 500 °C<br>932 °F | 790 °C<br>1454 °F | 790 °C<br>1454 °F | 1 min<br>under vacuum | 0 min |
| Dentine bake 1<br>(with LV liquid universal)** | 500 °C<br>932 °F | 6 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 500 °C<br>932 °F | 760 °C<br>1400 °F | 760 °C<br>1400 °F | 1.5-2 min<br>under vacuum | 0 min |
| Dentine bake 2<br>(with LV liquid universal)** | 500 °C<br>932 °F | 4 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 500 °C<br>932 °F | 760 °C<br>1400 °F | 760 °C<br>1400 °F | 1.5-2 min<br>under vacuum | 0 min |
| Glaze bake*** | 500 °C<br>932 °F | 2 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | – | – | 760 °C<br>1400 °F | 1 min<br>under vacuum | 0 min |

**For the modelling liquid MV universal**

| | Base temp. | Drying time | Holding time at base temp. | Heat rate | Vacuum start | Vacuum end | Final temp. | Holding time | Cooling time |
|---|---|---|---|---|---|---|---|---|---|
| Dentine bake 1<br>(with MV liquid universal)** | 500 °C<br>932 °F | 4 min | 4 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 500 °C<br>932 °F | 760 °C<br>1400 °F | 760 °C<br>1400 °F | 1.5-2 min<br>under vacuum | 0 min |
| Dentine bake 2<br>(with MV liquid universal)** | 500 °C<br>932 °F | 3 min | 3 min | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 500 °C<br>932 °F | 760 °C<br>1400 °F | 760 °C<br>1400 °F | 1.5-2 min<br>under vacuum | 0 min |

**Warning:**
When using the modelling liquid MV universal please ensure to follow the correct firing program. Caution, this is different to the firing instructions for modelling liquid LV universal (see above).
LV and MV universal modelling liquids must not be mixed together - danger of bubbling!

The program specifications stated above are based upon fine silver calibrated furnaces. For better results select longer drying times.

**Advice:**
This information is to be used as an indication which must be adjusted individually to suit individual furnace manufacturers and differences in age. The program tables are based upon fine silver calibrated furnaces. All details have been carefully researched, however no responsibility is taken for the correctness of this information. Our dental technical support team is available should you have any questions regarding the firing program for your own furnace.
**Hotline Tel. No. +49 72 31 / 803 - 440**

### 3.6. Firing tables for selected furnaces

**Austromat D2**

| | Start °C/°F | ☐ | ↑ min | ↑ min | VAC % | ↗ °C·min⁻¹ °F·min⁻¹ | END °C/°F | → min:sec | (V) min:sec | ↘ 1 min | 2 ↘ min |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Liner bake | 500/ 932 | 1 | 3 | 0 | 100 | 65/ 117 | 800/ 1472 | 1:00 | 1:00 | 0 | 0 |
| Shoulder bake | 500/ 932 | 1 | 6 | 0 | 100 | 55/ 99 | 790/ 1454 | 1:00 | 1:00 | 0 | 0 |
| Dentine 1 (with LV liquid universal)** | 500/ 932 | 1 | 6 | 0 | 100 | 55/ 99 | 760/ 1400 | 1:30-2:00 | 1:30-2:00 | 0 | 0 |
| Dentine 2 (with LV liquid universal)** | 500/ 932 | 1 | 4 | 0 | 100 | 55/ 99 | 760/ 1400 | 1:30-2:00 | 1:30-2:00 | 0 | 0 |
| Glaze bake*** | 500/ 932 | 1 | 2 | 0 | 0 | 55/ 99 | 760/ 1400 | 1:00 | 1:00 | 0 | 0 |

**Austromat D4**

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | | | | | 01:00 | **min** |
| **S** | | | | | 03:00 | **min** |
| **V** | 500 | **°C** | | | –:– | **min** |
| **Temp. 1** | 800 | **°C** | 65 | **°C/min** | 01:00 | **min** |
| **Temp. 2** | – | **°C** | – | **°C/min** | –:– | **min** |
| **Temp. 3** | – | **°C** | – | **°C/min** | –:– | **min** |
| **VAC** | 800 | **°C** | 100 | **%** | 01:00 | **min** |
| **Liner bake** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | | | | | 01:00 | **min** |
| **S** | | | | | 06:00 | **min** |
| **V** | 550 | **°C** | | | 00:00 | **min** |
| **Temp 1** | 790 | **°C** | 55 | **°C/min** | 01:00 | **min** |
| **Temp 2** | – | **°C** | – | **°C/min** | –:– | **min** |
| **Temp 3** | – | **°C** | – | **°C/min** | –:– | **min** |
| **VAC** | 790 | **°C** | 100 | **%** | 01:00 | **min** |
| **Shoulder bake** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | | | | | 01:00 | **min** |
| **S** | | | | | 06:00 | **min** |
| **V** | 500 | **°C** | | | 00:00 | **min** |
| **Temp. 1** | 760 | **°C** | 55 | **°C/min** | 01:45 | **min** |
| **Temp. 2** | – | **°C** | – | **°C/min** | –:– | **min** |
| **Temp. 3** | – | **°C** | – | **°C/min** | –:– | **min** |
| **VAC** | 760 | **°C** | 100 | **%** | 01:45 | **min** |
| **Dentine 1** (with LV liquid universal)** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | | | | | 01:00 | **min** |
| **S** | | | | | 04:00 | **min** |
| **V** | 500 | **°C** | | | 00:00 | **min** |
| **Temp 1** | 760 | **°C** | 55 | **°C/min** | 01:45 | **min** |
| **Temp 2** | – | **°C** | – | **°C/min** | –:– | **min** |
| **Temp 3** | – | **°C** | – | **°C/min** | –:– | **min** |
| **VAC** | 760 | **°C** | 100 | **%** | 01:45 | **min** |
| **Dentine 2** (with LV liquid universal)** | | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| **T** | | | | | 01:00 | **min** |
| **S** | | | | | 02:00 | **min** |
| **V** | 500 | **°C** | | | –:– | **min** |
| **Temp. 1** | 760 | **°C** | 55 | **°C/min** | 01:00 | **min** |
| **Temp. 2** | – | **°C** | – | **°C/min** | –:– | **min** |
| **Temp. 3** | – | **°C** | – | **°C/min** | –:– | **min** |
| **VAC** | 760 | **°C** | – | **%** | 01:00 | **min** |
| **Glaze bake*** ** | | | | | | |

* Positioning of objects only at correct standby temperatures.
** When using modelling liquid MV universal, observe different bake sequence.
*** The glaze bake can be carried out either with or without vacuum. The glaze is intensified by increasing the holding time.

| Austromat M | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | START | ☐ | ↑ min | → min | VAC LEVEL | ↗ | END | → min:sec | (V) min:sec | ↘ 1 min | 2 ↘ min |
| Liner bake 1 + 2 | 500 °C 932 °F | 1 | 3 | 0 | 9 | 65 °C·min$^{-1}$ 117 °F·min$^{-1}$ | 800 °C 1472 °F | 1:00 under vacuum | d | 0 | 0 |
| Shoulder bake | 500 °C 932 °F | 1 | 6 | 0 | 9 | 55 °C·min$^{-1}$ 99 °F·min$^{-1}$ | 790 °C 1454 °F | 1:00 under vacuum | d | 0 | 0 |
| Dentine bake 1 (with LV liquid universal)** | 500 °C 932 °F | 1 | 6 | 0 | 9 | 55 °C·min$^{-1}$ 99 °F·min$^{-1}$ | 760 °C 1400 °F | 1:30-2:00 under vacuum | d | 0 | 0 |
| Dentine bake 2 (with LV liquid universal)** | 500 °C 932 °F | 1 | 4 | 0 | 9 | 55 °C·min$^{-1}$ 99 °F·min$^{-1}$ | 760 °C 1400 °F | 1:30-2:00 under vacuum | d | 0 | 0 |
| Glaze bake*** | 500 °C 932 °F | 0 | 2 | 0 | *** | 55 °C·min$^{-1}$ 99 °F·min$^{-1}$ | 760 °C 1400 °F | 1:00*** | *** | 0 | 0 |

| Austromat 3001 | |
|---|---|
| Liner bake 1 + 2 | C500 T60 T180 • L9 V9 TO65 • C800 T60 V0 CO LO T2 C500 |
| Shoulder bake | C500 T60 T360 • L9 V9 TO65 • C790 T60 V0 CO LO T2 C500 |
| Dentine bake 1 (with LV liquid universal)** | C500 T60 T360 • L9 V9 TO55 • C760 T90-120 V0 CO LO T2 C500 |
| Dentine bake 2 (with LV liquid universal)** | C500 T60 T240 • L9 V9 TO55 • C760 T90-120 V0 CO LO T2 C500 |
| Glaze bake *** | C500 T60 T120 • L9 TO55 • C760 T60 CO LO T2 C500 |
| | **The holding time for the dentine and correction bake must be between 90 and 120 seconds.** |

** When using modelling liquid MV universal, observe different bake sequence.
*** The glaze bake can be carried out either with or without vacuum. The glaze is intensified by increasing the holding time.

| Multimat MCII (Mach1/Mach2) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Pre-heating temp. | Drying | Pre-heating | Vacuum | Firing time | Firing temp. | Heat rate | Vacuum |
| Liner bake 1 + 2 | 500 °C<br>932 °F | 3 min | 1 min | 1 min | 2 min | 820 °C<br>1508 °F | 65 °C·min$^{-1}$<br>117 °F·min$^{-1}$ | 50 hPa |
| Shoulder bake | 500 °C<br>932 °F | 4 min | 2 min | 1 min | 2 min | 810 °C<br>1490 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 50 hPa |
| Dentine bake 1<br>(with LV liquid universal)** | 500 °C<br>932 °F | 4 min | 2 min | 1 min | 2.5-3 min | 780 °C<br>1436 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 50 hPa |
| Dentine bake 2<br>(with LV liquid universal)** | 500 °C<br>932 °F | 4 min | 2 min | 1 min | 2.5-3 min | 780 °C<br>1436 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 50 hPa |
| Glaze bake*** | 500 °C<br>932 °F | 2 min | 2 min | *** | 1.5 min | 780 °C<br>1436 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | *** |

| P90/P95 | | | | | | | |
|---|---|---|---|---|---|---|---|
| | Base temp. | Heat rate | Firing temp. | Closing time | Holding time | Vacuum on | Vacuum off |
| Liner bake 1 + 2 | 500 °C<br>932 °F | 65 °C·min$^{-1}$<br>117 °F·min$^{-1}$ | 800 °C<br>1472 °F | 4 min | 1 min<br>under vacuum | 500 °C<br>932 °F | 800 °C<br>1472 °F |
| Shoulder bake | 500 °C<br>932 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 790 °C<br>1454 °F | 6 min | 1 min<br>under vacuum | 500 °C<br>932 °F | 790 °C<br>1454 °F |
| Dentine bake 1<br>(with LV liquid universal)** | 500 °C<br>932 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 760 °C<br>1400 °F | 6 min | 1.5-2 min<br>under vacuum | 500 °C<br>932 °F | 760 °C<br>1400 °F |
| Dentine bake 2<br>(with LV liquid universal)** | 500 °C<br>932 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 760 °C<br>1400 °F | 4 min | 1.5-2 min<br>under vacuum | 500 °C<br>932 °F | 760 °C<br>1400 °F |
| Glaze bake*** | 500 °C<br>932 °F | 55 °C·min$^{-1}$<br>99 °F·min$^{-1}$ | 760 °C<br>1400 °F | 2 min | 1 min*** | *** | – |

| Vacumat 100/200/50 | | | | | | |
|---|---|---|---|---|---|---|
| | Final temp. | Pre-drying time | Heat rate time | Holding time | Vacuum | Cooling |
| Liner bake 1 + 2 | 800 °C<br>1472 °F | 4 min | 5 min | 1 min<br>under vacuum | 6 min | – |
| Shoulder bake | 790 °C<br>1454 °F | 6 min | 5 min | 1 min<br>under vacuum | 6 min | – |
| Dentine bake 1<br>(with LV liquid universal)** | 760 °C<br>1400 °F | 6 min | 5 min | 1.5-2 min<br>under vacuum | 6.5-7 min | – |
| Dentine bake 2<br>(with LV liquid universal)** | 760 °C<br>1400 °F | 4 min | 5 min | 1.5-2 min<br>under vacuum | 6.5-7 min | – |
| Glaze bake*** | 760 °C<br>1400 °F | 2 min | 5 min | 1 min*** | *** | – |

** When using modelling liquid MV universal, observe different bake sequence.
*** The glaze bake can be carried out either with or without vacuum. The glaze is intensified by increasing the holding time.

## 4. Individual products

### FL Fluo Liner

| | | |
|---|---|---|
| Fluo Liner 1 | **292-514-40** | 20 g |
| Fluo Liner 2 | **292-524-40** | 20 g |
| Fluo Liner 3 | **292-534-40** | 20 g |
| Fluo Liner 4 | **292-544-40** | 20 g |
| Fluo Liner 5 | **292-554-40** | 20 g |
| Fluo Liner 6 | **292-564-40** | 20 g |

### O Opaque

| | | |
|---|---|---|
| Opaque A1 | **292-211-30** | 15 g |
| Opaque A1 | **292-211-60** | 40 g |
| Opaque A2 | **292-212-30** | 15 g |
| Opaque A2 | **292-212-60** | 40 g |
| Opaque A3 | **292-213-30** | 15 g |
| Opaque A3 | **292-213-60** | 40 g |
| Opaque A3.5 | **292-214-30** | 15 g |
| Opaque A3.5 | **292-214-60** | 40 g |
| Opaque A4 | **292-215-30** | 15 g |
| Opaque A4 | **292-215-60** | 40 g |
| Opaque B1 | **292-221-30** | 15 g |
| Opaque B1 | **292-221-60** | 40 g |
| Opaque B2 | **292-222-30** | 15 g |
| Opaque B2 | **292-222-60** | 40 g |
| Opaque B3 | **292-223-30** | 15 g |
| Opaque B3 | **292-223-60** | 40 g |
| Opaque B4 | **292-224-30** | 15 g |
| Opaque B4 | **292-224-60** | 40 g |
| Opaque C1 | **292-231-30** | 15 g |
| Opaque C1 | **292-231-60** | 40 g |
| Opaque C2 | **292-232-30** | 15 g |
| Opaque C2 | **292-232-60** | 40 g |
| Opaque C3 | **292-233-30** | 15 g |
| Opaque C3 | **292-233-60** | 40 g |
| Opaque C4 | **292-234-30** | 15 g |
| Opaque C4 | **292-234-60** | 40 g |
| Opaque D2 | **292-242-30** | 15 g |
| Opaque D2 | **292-242-60** | 40 g |

### Opaque Gingiva

| | | |
|---|---|---|
| Opaque D3 | **292-243-30** | 15 g |
| Opaque D3 | **292-243-60** | 40 g |
| Opaque D4 | **292-244-30** | 15 g |
| Opaque D4 | **292-244-60** | 40 g |
| Opaque Gingiva | **292-250-30** | 15 g |
| Chroma Opaque CO 1 Bleach | **292-301-30** | 15 g |

### SM Shoulder material

| | | |
|---|---|---|
| Shoulder material A | **293-110-30** | 15 g |
| Shoulder material B | **293-120-30** | 15 g |
| Shoulder material C | **293-130-30** | 15 g |
| Shoulder material D | **293-140-30** | 15 g |

### SM Modifier

| | | |
|---|---|---|
| SM Modifier white | **293-150-30** | 15 g |
| SM Modifier transparent | **293-199-30** | 15 g |

### OD Opaque Dentine

| | | |
|---|---|---|
| Opaque Dentine A1 | **294-111-30** | 15 g |
| Opaque Dentine A1 | **294-111-60** | 40 g |
| Opaque Dentine A2 | **294-112-30** | 15 g |
| Opaque Dentine A2 | **294-112-60** | 40 g |
| Opaque Dentine A3 | **294-113-30** | 15 g |
| Opaque Dentine A3 | **294-113-60** | 40 g |
| Opaque Dentine A3.5 | **294-114-30** | 15 g |
| Opaque Dentine A3.5 | **294-114-60** | 40 g |
| Opaque Dentine A4 | **294-115-30** | 15 g |
| Opaque Dentine A4 | **294-115-60** | 40 g |
| Opaque Dentine B1 | **294-121-30** | 15 g |
| Opaque Dentine B1 | **294-121-60** | 40 g |
| Opaque Dentine B2 | **294-122-30** | 15 g |
| Opaque Dentine B2 | **294-122-60** | 40 g |
| Opaque Dentine B3 | **294-123-30** | 15 g |
| Opaque Dentine B3 | **294-123-60** | 40 g |
| Opaque Dentine B4 | **294-124-30** | 15 g |
| Opaque Dentine B4 | **294-124-60** | 40 g |
| Opaque Dentine C1 | **294-131-30** | 15 g |
| Opaque Dentine C1 | **294-131-60** | 40 g |

## OD Opaque Dentine

| | | |
|---|---|---|
| Opaque Dentine C2 | **294-132-30** | 15 g |
| Opaque Dentine C2 | **294-132-60** | 40 g |
| Opaque Dentine C3 | **294-133-30** | 15 g |
| Opaque Dentine C3 | **294-133-60** | 40 g |
| Opaque Dentine C4 | **294-134-30** | 15 g |
| Opaque Dentine C4 | **294-134-60** | 40 g |
| Opaque Dentine D2 | **294-142-30** | 15 g |
| Opaque Dentine D2 | **294-142-60** | 40 g |
| Opaque Dentine D3 | **294-143-30** | 15 g |
| Opaque Dentine D3 | **294-143-60** | 40 g |
| Opaque Dentine D4 | **294-144-30** | 15 g |
| Opaque Dentine D4 | **294-144-60** | 40 g |

## D Dentine

| | | |
|---|---|---|
| Dentine A1 | **294-211-30** | 15 g |
| Dentine A1 | **294-211-60** | 40 g |
| Dentine A2 | **294-212-30** | 15 g |
| Dentine A2 | **294-212-60** | 40 g |
| Dentine A3 | **294-213-30** | 15 g |
| Dentine A3 | **294-213-60** | 40 g |
| Dentine A3.5 | **294-214-30** | 15 g |
| Dentine A3.5 | **294-214-60** | 40 g |
| Dentine A4 | **294-215-30** | 15 g |
| Dentine A4 | **294-215-60** | 40 g |
| Dentine B1 | **294-221-30** | 15 g |
| Dentine B1 | **294-221-60** | 40 g |
| Dentine B2 | **294-222-30** | 15 g |
| Dentine B2 | **294-222-60** | 40 g |
| Dentine B3 | **294-223-30** | 15 g |
| Dentine B3 | **294-223-60** | 40 g |
| Dentine B4 | **294-224-30** | 15 g |
| Dentine B4 | **294-224-60** | 40 g |
| Dentine C1 | **294-231-30** | 15 g |
| Dentine C1 | **294-231-60** | 40 g |
| Dentine C2 | **294-232-30** | 15 g |
| Dentine C2 | **294-232-60** | 40 g |
| Dentine C3 | **294-233-30** | 15 g |
| Dentine C3 | **294-233-60** | 40 g |
| Dentine C4 | **294-234-30** | 15 g |
| Dentine C4 | **294-234-60** | 40 g |
| Dentine D2 | **294-242-30** | 15 g |
| Dentine D2 | **294-242-60** | 40 g |
| Dentine D3 | **294-243-30** | 15 g |
| Dentine D3 | **294-243-60** | 40 g |
| Dentine D4 | **294-244-30** | 15 g |
| Dentine D4 | **294-244-60** | 40 g |

## Bleach

| | | |
|---|---|---|
| Chroma Opaque CO 1 Bleach | **292-301-30** | 15 g |
| Chroma Dentine CD 1 Bleach | **294-251-30** | 15 g |
| Chroma Dentine CD 2 Bleach | **294-252-30** | 15 g |
| Chroma Incisal CI 1 Bleach | **295-701-30** | 15 g |

## CD Chroma Dentine

| | | |
|---|---|---|
| Chroma Dentine A | **294-410-30** | 15 g |
| Chroma Dentine B | **294-420-30** | 15 g |
| Chroma Dentine C | **294-430-30** | 15 g |

## IFD Intensive Fluo Dentine

| | | |
|---|---|---|
| Intensive Fluo Dentine creme | **294-751-30** | 15 g |
| Intensive Fluo Dentine yellow | **294-760-30** | 15 g |
| Intensive Fluo Dentine orange | **294-770-30** | 15 g |
| Intensive Fluo Dentine orange plus | **294-773-30** | 15 g |

## IT Incisal transparent

| | | |
|---|---|---|
| Incisal 57 | **295-150-30** | 15 g |
| Incisal 57 | **295-150-60** | 40 g |
| Incisal 58 | **295-154-30** | 15 g |
| Incisal 58 | **295-154-60** | 40 g |
| Incisal 59 | **295-160-30** | 15 g |
| Incisal 59 | **295-160-60** | 40 g |
| Incisal 60 | **295-170-30** | 15 g |
| Incisal 60 | **295-170-60** | 40 g |

## IO Incisal opalescence

| | | |
|---|---|---|
| Incisal opal.1 ice white | **295-210-30** | 15 g |
| Incisal opal.2 polar white | **295-215-30** | 15 g |
| Incisal opal.3 snow white | **295-250-30** | 15 g |
| Incisal opal.4 sky blue | **295-270-30** | 15 g |
| Incisal opal.5 amber | **295-280-30** | 15 g |
| Incisal opalescence 57 | **295-300-30** | 15 g |
| Incisal opalescence 58 | **295-305-30** | 15 g |
| Incisal opalescence 59 | **295-310-30** | 15 g |
| Incisal opalescence 60 | **295-315-30** | 15 g |

## NT Neutral transparent

| | | |
|---|---|---|
| Neutral transparent | **295-299-30** | 15 g |
| Neutral transparent | **295-299-60** | 40 g |

## TE Transpa Effect

| | | |
|---|---|---|
| Transpa Effect 1 white | **295-350-30** | 15 g |
| Transpa Effect 2 yellow | **295-360-30** | 15 g |
| Transpa Effect 3 pink | **295-385-30** | 15 g |
| Transpa Effect 4 homey | **295-370-30** | 15 g |
| Transpa Effect 5 blue | **295-380-30** | 15 g |
| Transpa Effect 6 brown | **295-367-30** | 15 g |

## ST Stains universal

| | | |
|---|---|---|
| Body Stains A | **296-110-10** | 3 g |
| Body Stains B | **296-120-10** | 3 g |
| Body Stains C | **296-130-10** | 3 g |
| Stains 0 neutral | **296-199-10** | 3 g |
| Stains 1 white | **296-150-10** | 3 g |
| Stains 2 vanilla | **296-162-10** | 3 g |
| Stains 3 yellow | **296-160-10** | 3 g |
| Stains 45 orange plus | **296-171-10** | 3 g |
| Stains 6 pink | **296-185-10** | 3 g |
| Stains 7 dark pink | **296-187-10** | 3 g |
| Stains 8 purple | **296-189-10** | 3 g |
| Stains 9 blue | **296-180-10** | 3 g |
| Stains 10 grey | **296-155-10** | 3 g |
| Stains 11 olive green | **296-193-10** | 3 g |
| Stains 12 olive yellow | **296-192-10** | 3 g |
| Stains 13 medium brown | **296-167-10** | 3 g |
| Stains 14 reddish brown | **296-168-10** | 3 g |
| Stains 15 black | **296-198-10** | 3 g |

## CM Correction

| | | |
|---|---|---|
| Correction material | **297-199-10** | 3 g |

## G Gingiva

| | | |
|---|---|---|
| Gingiva G (light) | **298-110-30** | 15 g |
| Gingiva GD (dark) | **298-120-30** | 15 g |

## Liquids

| | | |
|---|---|---|
| Stains universal | **299-110-40** | 20 ml |
| Shoulder material univ. | **299-120-40** | 20 ml |
| Modelling MV univ. | **299-150-40** | 20 ml |
| Modelling MV univ. | **299-150-80** | 100 ml |
| Modelling liquid LV standard univ. | **299-160-41** | 20 ml |
| Modelling liquid LV standard univ. | **299-160-81** | 100 ml |
| Modelling liquid LV standard univ. | **299-160-91** | 500 ml |
| Modelling liquid LV+ univ. | **299-160-40** | 20 ml |
| Modelling liquid LV+ univ. | **299-160-80** | 100 ml |
| Modelling liquid LV+ univ. | **299-160-99** | 500 ml |
| Universal paste liquid | **299-170-40** | 20 ml |
| Universal paste liquid | **299-170-80** | 100 ml |
| Universal B.O.L. liquid | **299-180-40** | 20 ml |
| Universal B.O.L. liquid | **299-180-80** | 100 ml |
| SM-Isofit | **260-324-01** | 20 ml |
| AESTHETIC Bonder liquid | **299-200-10** | 5 ml |

## Triceram® Starter set

| | |
|---|---|
| **290-113-02** | 1 piece |

## Triceram® Master set Zr (3)

| | |
|---|---|
| **290-112-03** | 1 piece |

## 5. Description of symbols used by Dentaurum

| | |
|---|---|
| | See instructions for use |
| → www.dentaurum.de | Instructions for use available in the internet |
| α | Symbol for the coefficient of thermal expansion CTE. If not otherwise stated, for the temperature interval from 25–500 °C/77–932 °F after two dentine bakes. |
| $T_G$ | Transformation temperature |
| LOT | LOT number (CH.-B) |
| | use by ... (expiry date) |
| CE 0483 | CE Mark MP Class 2 |
| Rx only | Caution: Fed. Law restricts this device to sale by or on the order of a certified dental technician. (To be used exclusively by trained personnel) |

**Additional information regarding Dentaurum products can be found on the internet.**

**www.dentaurum.de**

CE 0483

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