VITA ENAMIC® HYBRID CERAMIC
Information for dental technicians

Date of issue: 05.18

VITA shade determination  VITA shade communication  VITA shade reproduction  VITA shade control
CONCEPT AND BENEFITS

VITA ENAMIC® simplifies the fabrication of esthetic restorations, as the material can be processed efficiently and precisely, while maintaining high reliability. Read on to learn more.
The VITA ENAMIC formula for success: 
elasticity + strength = reliability²
• VITA ENAMIC is the world’s first and only tooth-colored hybrid dental ceramic featuring a dual ceramic-polymer network structure.
• The material combines enormous load capacity with high elasticity, allowing simple, efficient and precise fabrication of dental restorations.

VITA ENAMIC is particularly suited for:
• delicate, esthetic monolithic reconstructions and implant-supported restorations that benefit from high load capacity.

VITA ENAMIC is available in several different variations and translucency levels:
• VITA ENAMIC, VITA ENAMIC multiColor
• T (Translucent), HT (High Translucent), ST (Super Translucent)
A MATERIAL FOR A VARIETY OF SOLUTIONS

VITA ENAMIC® variations

- Monochromatic CAD/CAM blanks in three translucency levels for delicate, minimally invasive monolithic reconstructions.
- Multichromatic CAD/CAM blanks with integrated tooth color gradient for esthetic monolithic reconstructions at the push of a button.
- Mono- and multichromatic CAD/CAM blanks for the fabrication of implant-supported restorations with integrated "buffer function."*

* For Sirona inLab MC XL users, special VITA ENAMIC IS blanks with an integrated interface to an adhesive/titanium base are available to enable the fabrication of implant-supported reconstructions.
THE ADVANTAGES

**Time-efficient**
- Highly efficient completion of restorations by polishing or glazing and avoiding complex reworking steps or crystallization/sintering firing.

**Natural and esthetic**
- The ability to simply achieve natural and esthetic results, since the tooth-colored hybrid ceramic blanks feature outstanding light optical properties.

**Minimally invasive**
- Fabricating detailed, minimally invasive restorations since the material allows for thin walls and thinning marginal areas.

**Reliable**
- Producing durable implant-supported restorations with integrated buffer function from the enormously resistant hybrid ceramic.
VITA ENAMIC: Just polish and deliver immediately!
VITA ENAMIC®: MORE POSSIBILITIES FOR DIGITAL DENTAL TECHNOLOGY
VITA ENAMIC opens up new possibilities for the efficient and highly precise digital fabrication of esthetic reconstructions.

**Why?**

VITA ENAMIC is a material that provides numerous new possibilities!

**What for?**

VITA ENAMIC: Recommended indications
- minimally invasive reconstructions with reduced wall thicknesses
- posterior crowns that offer high load capacity in cases with limited space availability
- precise repair of small defects (e.g., delicate inlays)
- non-/minimally-invasive reconstruction of occlusal surfaces (table top)
- monolithic veneering structures for digital hybrid bridges
- Implant-supported abutment crowns and mesostructures

VITA ENAMIC multiColor: Recommended indications
- esthetic crown restorations with vivid play of color/light
- delicate (non-prep) veneers for cosmetic reconstructions
1. Shade determination

• Tooth-colored hybrid ceramic blanks in numerous VITA shades (0M1 – 4M2) enable fast and reliable reproduction of the natural tooth shade.

• Thanks to excellent light refraction properties and blanks available in three translucency levels, numerous esthetic challenges can be efficiently solved with VITA ENAMIC.

EFFICIENT REPRODUCTION OF TOOTH SHADES

2. Select tooth-colored blank

3. Reproduce tooth shade

Simple shade reproduction

• Tooth-colored hybrid ceramic blanks in numerous VITA shades (0M1 – 4M2) enable fast and reliable reproduction of the natural tooth shade.

Various solutions

• Thanks to excellent light refraction properties and blanks available in three translucency levels, numerous esthetic challenges can be efficiently solved with VITA ENAMIC.
USING THE UNIQUE MATERIAL CONCEPT

VITA ENAMIC
hybrid ceramic

Ceramic network
86% by weight

Polymer network
14% by weight

The unique hybrid ceramic with a dual ceramic-polymer network structure

Proven material concept
• With VITA ENAMIC, the proven concept of reinforced ceramic-polymer materials, which has already been tried and tested in construction and aircraft construction, is now available for dental applications.

Reinforced ceramic structure
• In VITA ENAMIC, the dominant ceramic network is reinforced by a polymer network to ensure improved mechanical properties.

Used a million times over
• Since 2013, VITA ENAMIC hybrid ceramic has been used to fabricate roughly 1.5 million units in numerous laboratories and practices all over the world.
THE RESTORATIVE CONCEPT

Using a two-step restorative concept, VITA ENAMIC® hybrid ceramic allows the efficient fabrication of esthetic restorations. Learn more now.
VITA ENAMIC: For efficient fabrication of dental restorations at the best price-performance ratio.
THE MONOLITHIC 2-STEP RESTORATIVE CONCEPT – EFFICIENT AND NATURAL

1. CAM FABRICATION* → approx. 15 – 30 min.
2. REWORKING → approx. 2 min.
3. SINTERING PROCESS → approx. 80 min. (= speed sintering process)

Workflow example: posterior crown made of zirconia ceramic, monolithic - 5 steps (disc blank, precolored)

*) Note: Exemplary representation of the system; grinding/milling times may vary depending on the CAM system, software, processing strategy and blank geometry.

**) Instead of polishing, staining and glazing with light-curing stains is also possible.
FINAL RESULT!

4. CHARACTERIZATION/ GLAZING → approx. 2 min.
5. GLAZE FIRING/STAINS FIRING → approx. 10 – 15 min.

natural and esthetic
FACTS AND FEATURES

**VITA ENAMIC®** is the material for efficient fabrication of detailed and reliable restorations. Read all the facts and features.
VITA ENAMIC: 
The hybrid ceramic enables very delicate and precise restorations!
TWO BENEFITS FOR EFFICIENT AND COST-EFFECTIVE FABRICATION

1. Time-efficient fabrication thanks to unique material structure

VITA ENAMIC
- enables the fabrication of restorations within a short period of time and avoids complex reworking or a crystallization/sintering firing process
- is finalized by polishing/glazing immediately after CAM fabrication and can be delivered to the practice immediately afterwards

1. CAM fabrication: approx. 5 - 20 minutes*
2. Reworking: approx. 2 minutes
3. Polishing: approx. 3 minutes or Glazing: approx. 3 minutes

* Note: Exemplary representation of the system; grinding/milling times may vary depending on the CAM system, software, processing strategy and blank geometry.
2. Cost-effective CAD/CAM fabrication, thanks to long tool life!

Source: Internal study VITA R&D, Schleiferstandzeitversuche zur CAM-Fertigung von Molarenkronen aus o. g. Materialien mit jeweils einem neuen Schleiferpaar mittels Sirona MC XL-Schleifeinheit, Software 3.8 x, report 03/10 ([1] cf. back of brochure)

**VITA ENAMIC**

- enables cost-effective processing with numerous systems
  - the hybrid ceramic allows long tool life
- **milling tools last up to seven times longer when tested** compared to glass ceramics, when fabricating crowns with Sirona MC XL
TWO BENEFITS FOR RESTORATIONS WITH PARTICULARLY SMALL DIMENSIONS

1. Minimally invasive restorations, thanks to reduced wall thickness!

**VITA ENAMIC**
- enables minimally invasive restorations
  - reduced wall thickness is possible, thanks to high resilience
- is especially advantageous in cases of limited space,
  - where natural tooth structure must be preserved
2. Delicate reconstructions, thanks to integrated elasticity!

IPS Empress CAD

IPS e.max CAD

VITA ENAMIC

VITA ENAMIC

• enables CAM fabrication of extremely delicate reconstructions, thanks to the low brittleness of the material

• exhibits excellent CAM machinability in the test, the veneer geometry (approx. 0.2 mm) could only be achieved with hybrid ceramic-polymer materials*

*) Important! The manufacturer has not approved the use of IPS Empress CAD and IPS e.max CAD for a wall thickness of approx. 0.2 mm.
TWO BENEFITS FOR HIGH-PRECISION RESULTS

1. Detailed morphology, thanks to ideal CAM machinability!

VITA ENAMIC: The CAD/CAM material when accurate and detailed results are vital!

VITA ENAMIC
• enables CAM reconstructions with high accuracy for exact reproduction of the function
2. Precise results for exact marginal fit, thanks to edge stability!

IPS e.max CAD

Source: Internal study VITA R&D, Untersuchung von standardisierten Dreiecksformkörpern (30° Keil, Aufsicht) aus o. g. Materialproben mittels REM nach CAM-Fertigung mit Sirona MC XL-Schleifeinheit, 200-fache Vergrößerung, report 05/10 [1], cf. back of brochure.

VITA ENAMIC

- enables precise and thinning marginal areas for exact marginal fit thanks to high edge stability
- produces high marginal precision when tested for objects with marginal areas and limited space

VITA ENAMIC

approx. 28 µm

approx. 87.5 µm
THREE BENEFITS FOR HIGH RELIABILITY

1. Reliability thanks to durable material structure!

VITA ENAMIC: material with integrated "crack-stop function"

VITA ENAMIC exhibits outstanding reliability and durability,
the polymer network is able to stop crack propagation.

VITA ENAMIC reveals plastic deformation after prior damage in the test,
whereas traditional ceramics reveal noticeable cracks.

Source: Internal study VITA R&D, Analyse des Querschnitts der Bruchflächen o. g. Materialproben nach Verschädigung mit einer Wolframcarbid-Kugel, report 11/13 ([1], cf. back of brochure).
2. Clinical stability thanks to enormous load capacity!

VITA ENAMIC
- indicates very good clinical stability
  since the material offers enormous load capacity after adhesive bonding
- reaches the highest average fracture load value of 2,766 N
  of all CAD/CAM materials examined in the test

Source: Boston University, Prof. Dr. Russell Giordano, Boston, USA. Statische Bruchlastuntersuchung zu monolithischen, CAD/CAM-gefertigten und adhäsiv befestigten Kronen aus o. g. Materialien, report 07/13 [3], cf. back of brochure.
3. Excellent resilience – hybrid ceramic features high fracture load capacity and extraordinary elasticity

Thanks to its polymer network, VITA ENAMIC offers an integrated “buffer function.”
VITA ENAMIC

- enables reconstructions with excellent resilience since the material features an integrated "buffer function"
- is able to absorb 70 percent of the forces in the test, compared to very rigid zirconia material

Source: University of Genoa, Dr. Maria Menini et al., Genoa, Italy; Messungen zur Kraftübertragung auf den simulierten periimplantaren Knochen mittels monolithischen Kronen aus o. g. Materialien auf einem stilisierten Implantatabutment, report 01/15, [2], cf. back or brochure.)
ALLOW FOR NUMEROUS ESTHETIC POSSIBILITIES

Natural esthetics due to efficient characterization/individualization

VITA ENAMIC
• can be efficiently characterized with light-curing stains – for natural and esthetic restorations

VITA ENAMIC
• can be individualized with veneering composite after the cut-back – for lifelike results in the anterior area
2. Glazing

2. Individualizing
SYSTEM AND COMPONENTS

VITA ENAMIC® is available in a variety of geometries, translucency levels and shades. Perfectly matched system components enable efficient processing. Read on to learn more.
VITA ENAMIC: Suitable for various applications and efficient processing.
**TYPES, GEOMETRIES, TRANSLUCENCY LEVELS**

### VITA ENAMIC

For minimally invasive, delicate reconstructions and implant-supported restorations

<table>
<thead>
<tr>
<th>Translucency</th>
<th>Geometry</th>
<th>Chroma</th>
</tr>
</thead>
</table>
| • Translucent T  
• High Translucent HT  
• Super Translucent ST* | Block**:  
• EM-10  
• EM-14  
Disc:  
• Ø 98.4 x 12  
• Ø 98.4 x 18 | • mono-chromatic |

### VITA ENAMIC multiColor

For esthetic reconstructions and implant-supported restorations

<table>
<thead>
<tr>
<th>Translucency</th>
<th>Geometry</th>
<th>Chroma</th>
</tr>
</thead>
</table>
| • High Translucent HT | Block:  
• EMC-14 | • multi-chromatic |

*) The ST type is only offered in the geometry EM-14.

**) The additional geometries IS-14 (in T) and IS-16 (in HT) are available for Sirona inLab MC XL users. These already have an integrated interface to an adhesive/titanium base. For more information visit www.vita-zahnfabrik.com.
### AVAILABLE SHADES

<table>
<thead>
<tr>
<th>Translucency levels</th>
<th>VITA SYSTEM 3D-Master range of shades</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0M1</td>
</tr>
<tr>
<td>Super Translucent*</td>
<td></td>
</tr>
<tr>
<td>High Translucent**</td>
<td></td>
</tr>
<tr>
<td>Translucent***</td>
<td></td>
</tr>
</tbody>
</table>

* | Super Translucent (ST) is available in the EM-14 type.
** | Limited range of shades for VITA ENAMIC multiColor EMC-14, IS-16 and discs: available in 1M1-HT, 1M2-HT, 2M2-HT, 3M2-HT and 4M2-HT.
*** | Limited range of shades for VITA ENAMIC IS-14/Discs: IS-14 available in 1M1-T, 1M2-T, 2M2-T, 3M2-T and 4M2-T; discs available in 1M2-T, 2M2-T and 3M2-T.

### RECOMMENDED INDICATIONS (for each type/level of translucency)

<table>
<thead>
<tr>
<th>Degree of translucency</th>
<th>VITA ENAMIC</th>
<th>VITA ENAMIC multiColor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T</td>
<td>HT</td>
</tr>
<tr>
<td>Indication</td>
<td>Translucent</td>
<td>High Translucent</td>
</tr>
</tbody>
</table>

- | | | | |

* Due to the comparatively high opacity, Translucent is recommended when metal structures or discolored natural tooth substance need to be masked.
** VITA ENAMIC is exclusively approved for the fabrication of veneering structures (VITA Rapid Layer Technology).
### AVAILABLE GEOMETRIES

<table>
<thead>
<tr>
<th>VITA ENAMIC</th>
<th>VITA ENAMIC multiColor</th>
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<tbody>
<tr>
<td><strong>EM-14</strong></td>
<td><strong>EMC-14</strong></td>
</tr>
<tr>
<td><strong>EM-10</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>EM-14:</strong> 12 x 14 x 18 mm</td>
<td><strong>EMC-14:</strong> 12 x 14 x 18 mm</td>
</tr>
<tr>
<td><strong>EM-10:</strong> 8 x 10 x 15 mm</td>
<td></td>
</tr>
</tbody>
</table>

Disc: Ø 98.4 x h 12 mm, Ø 98.4 x h 18 mm

### AVAILABLE SYSTEM COMPONENTS

- Characterization with VITA ENAMIC stains
- Individualization with VITA VM LC flow
- (self)adhesive bonding with VITA ADIVA LUTING SOLUTIONS
- Polishing instruments
DESCRIPTION OF COMPONENTS

VITA ENAMIC blanks
Pack of five VITA ENAMIC hybrid ceramic blanks.
Pack of 1 VITA ENAMIC hybrid ceramic disc

VITA ENAMIC Starter Set technical
10 packs of five VITA ENAMIC blanks in five shades and two translucency levels and one VITA ENAMIC Polishing Set technical.

VITA ENAMIC Polishing Set technical
2-stage polishing system with a total number of eight pre- or high-gloss polishers for the handpiece.

VITA ENAMIC STAINS KIT
Includes six light-curing stains and accessories for the reproduction of natural shade nuances of VITA ENAMIC restorations.

VITA VM LC flow
Light-curing, low-viscous composite materials for individualizing restorations, including VITA ENAMIC.

VITA ADIVA LUTING SOLUTIONS
Luting system for full-adhesive, self-adhesive and temporary luting of restorations.
SYSTEM COMPATIBILITY

CAD/CAM systems

VITA ENAMIC – SYSTEM SOLUTIONS*

VITA offers VITA ENAMIC with specific holder systems for these CAD/CAM systems:
• inLab (Sirona Dental GmbH)
• Ceramill Motion II (Amann Girrbach AG)
• KaVo ARCTICA/Everest (KaVo Dental GmbH)
• Planm mill 40 (D4D Technologies LLC.)
• iOS Technologies (Glidewell Laboratories)
• MyCrown Mill (FONA Dental s.r.o.)

VITA ENAMIC – UNIVERSAL SOLUTIONS*

VITA offers VITA ENAMIC with a universal holder system for these CAD/CAM systems:
• CORITEC line (imes-icore GmbH)
• Roland DWX line (Roland DG)
• CS 3000 (Carestream Inc.)
• Impression K-S devices (vhf camfacture AG)
• DMG ULTRASONIC line (DMG Mori AG)
• Röders RXD line (Röders GmbH)
• ZENOTEC select (Wieland Dental + Technik GmbH & Co. KG)
• Zfx Inhouse5x (Zfx GmbH)
• MILLING UNIT M line (Zirkonzahn S.r.l.)
• Organal Desktop line (R+K CAD/CAM Technologie GmbH & Co. KG)

BONDING SYSTEMS**

VITA ENAMIC restorations can be fully and self-adhesively bonded. Bonding is carried out based on the proven protocol for feldspar ceramics. The hybrid ceramic is etched (60 sec) with hydrofluoric acid (VITA ADIVA CERA-ETCH), cleaned and then silanized (VITA ADIVA C-PRIME). Information on bonding is available at www.vita-zahnfabrik.com/adiva

Recommended system
• VITA ADIVA LUTING SOLUTIONS (full-/self-adhesive)

Other systems
• Multilink Automix (Ivoclar Vivadent), Variolink Esthetic (Ivoclar Vivadent), Vitique (DMG)
• NX3 (KerrHawe), Calibra Ceram (DENTSPLY), RelyX Ultimate (3M ESPE), Bifix QM (VOCO)
• PANAVIA F2.0 (Kuraray), DuoCem (Coltène/Whaledent)

*) The range of geometries/shades of VITA CAD/CAM materials available may vary for the individual CAD/CAM system partners or systems.
**) Self-adhesive systems may only be used for crown restorations.
**BEST SOLUTIONS IN THE PROCESS**

- For digital shade determination, use **VITA Easyshade V**. and for visual shade determination, the **VITA Linearguide 3D-MASTER**.

- Various geometries, translucency and chroma levels of **VITA ENAMIC** blanks are available for CAD/CAM fabrication.

- Use the light-curing **VITA ENAMIC STAINS** for the hybrid ceramic and **VITA VM LC flow** veneering composite for individualization.

- Use the recommended **VITA ENAMIC Polishing Sets** for the hybrid ceramic.

- Practitioners use **VITA ADIVA LUTING SOLUTIONS** for full-adhesive or self-adhesive bonding of the hybrid ceramic.

* Note "Optional process steps:" The hybrid ceramic can be seated directly after milling and polishing. Characterization with light-curing stains and individualization with veneering composite are optional process steps.
WE ARE HAPPY TO HELP

More information about the products and processing is also available at www.vita-zahnfabrik.com

Hotline Sales Support
Mr. Udo Wolfner and his team (Internal Sales Department) will be glad to assist you with orders or questions about the delivery, product data and marketing materials.

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Technical Hotline
If you have technical questions concerning VITA product solutions, you can contact our technical specialists, Mr. Ralf Mehlin or Mr. Daniel Schneider.

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For best solutions. Proven a million times over.

Over the course of 25 years, more than 20 million single-tooth restorations have been fabricated using esthetic tooth-colored VITA CAD/CAM ceramics. Today, laboratories can choose the perfect material solution for their individual needs, from highly esthetic feldspar ceramics, high-strength glass ceramics and innovative hybrid ceramics to treat a variety of single-tooth indications. In addition, these CAD/CAM ceramics are distinguished by simple and efficient processing.
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After the publication of this information for use any previous versions become obsolete. The current version can be found at www.vita-zahnfabrik.com

VITA Zahnfabrik has been certified in accordance to the Medical Device Directive and the following products bear the CE mark:

VITA ENAMIC®

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