

VITABLOCS® for CEREC®/inLab®

Working Instructions



VITA shade taking

VITA shade communication

VITA shade reproduction

VITA shade control

Date of issue: 03.14

VITA shade, VITA made.

VITA

Fine-structure feldspar ceramic blocks for the
fabrication of inlays, onlays, veneers and crowns

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Sirona CEREC system



Sirona inLab system

Information about the CEREC and inLab systems is available from:

Sirona Dental Systems GmbH
Fabrikstraße 31 · D-64625 Bensheim

email: contact@sirona.de
www.sirona.com



Technical

- True chairside material since the restoration can be seated immediately after the milling process.
- No thermal refinement processes, such as stains, glaze or crystallization firing required.
- In addition, simple time and cost-saving characterization and individualization of the shade can be carried out since
 - characterization (with glaze material and stains) or individualization (with ceramic materials) are carried out with the products available in the VITA product range and special products or a special firing tray are not required.
 - washbake is not required for individualization with VITA VM 9.
 - the firing stability of the base material is very high.
- Superior machinability since VITABLOCS were especially developed for the CAD/CAM technology.

The results are:

- high edge stability, even in the MC XL fast milling mode.
- extended service life of diamond grinding tools during the CAM process.
- Unsurpassed material homogeneity thanks to the industrial sintering process and fine-particle structure.

Clinical

- Excellent clinical results over more than 25 years.
- First-class esthetic results with a clearly structured range of 4 different block types for all clinical situations.
- Very good translucency characteristics, distinctive chameleon effect
- Excellent abrasion properties to protect antagonist teeth
- Can be polished very easily.
- Superior adhesive bonding thanks to excellent etchability.

Note:

We recommend participation in a CEREC or inLab workshop before using the VITABLOCS. More information is available at the following websites:

www.vita-zahnfabrik.com

www.cerec.net

www.cerec.uzh.ch

www.sirona.com

www.dgcz.org

Chemical composition*

Oxides	SiO ₂	Al ₂ O ₃	Na ₂ O	K ₂ O	CaO	TiO ₂
% by weight	56–64	20–23	6–9	6–8	0.3–0.6	0.0–0.1

Chemical elements (oxides) that are contained in very low concentrations and required, e.g. for coloring, are not listed.

* The values of the chemical composition listed above are dependent on the lot.

Physical properties*

Properties	Unit of measure	Value
CTE (25–500°C)	10 ⁻⁶ · K ⁻¹	9.4 ± 0.1*
Density	g/cm ³	2.44 ± 0.01*
Flexural strength (Schwickerath) (ISO 6872)	MPa	154 ± 15
Modulus of elasticity (resonance method)	GPa	45 ± 0.5*
Transformation range	°C	780–790*

* The technical/physical values are typical measuring results and refer to internal samples and measurement equipment available on site.
If samples are prepared using different methods and measurement equipment, different measuring results may be expected.








Indication

VITABLOCS for CEREC/inLab are indicated for the fabrication of inlays, onlays, partial crowns, full crowns, endo-crowns of molars as well as for veneers if the following additional criteria are provided:

- Normal function
- All preconditions for adhesive bonding using a proven and properly used functional enamel-dentine adhesive system (Total Bonding).

Additional finishing with a VITA AKZENT Plus glaze or stain firing should be carried out for large restorations and for individualizing the shade of the surface. See also p. 30 ff.

Overview of indications of fine-structure feldspar ceramic:

Indication	Type of material	VITABLOCS Mark II	VITABLOCS TriLuxe/TriLuxe forte	VITABLOCS RealLife ¹⁾
 Inlay		●	○	○
 Onlay		●	●	○
 Veneer		●	●	●
 Endo-crown ²⁾		●	●	○
 Anterior crown		●	●	●
 Posterior crown		●	●	○
 Veneer structure for the VITA Rapid Layer Technology ¹⁾		●	●	—

● recommended ○ possible ¹⁾ can only be milled with MC XL system ²⁾ molars only

Contraindication

General

- in cases of inadequate oral hygiene
- inadequate results of preparation
- insufficient hard tooth substance
- insufficient space available

Hyperfunction

- Restorations made of VITABLOCS are contraindicated for patients diagnosed with excessive masticatory functions, in particular teeth grinders and clenchers. The use of VITABLOCS restorations for devitalized teeth of patients with hyperfunctions is absolutely contraindicated.

Endo-crowns - premolars

- Owing to the small adhesive surface and the small root diameters, endo-crowns for premolars are contraindicated.

Bridges

- Since VITABLOCS consist of a fine-structure feldspar ceramic with a limited strength of approx. 150 MPa, this material is not suitable for the fabrication of monolithic (mono-ceramic) bridges.

⚠ **Note:** Within the scope of the VITA Rapid Layer Technology, VITABLOCS are exclusively used for mechanical fabrication of the veneer structure of bridges with up to four units based on zirconia substructures. Please adhere to the information provided in the Working Instructions, No. 1740.

All-ceramic substructures

- VITABLOCS are not suitable for the fabrication of all-ceramic substructures. Accordingly, VITA VM 9 must not be used for individualizing and for full veneers of copings made from these materials (cf. information on page 38).

The shades of VITABLOCS have been matched with those of VITA SYSTEM 3D-MASTER, which is the only tooth shade system available on the market that takes all 3 color dimensions into account and integrates them into a systematic classification principle for shade determination and shade reproduction:

Value - Chroma - Hue
(Value – Chroma – Hue)

Since the monochromatic VITABLOCS Mark II or the individual layers of VITABLOCS TriLuxe and RealLife consist of a homogeneous mixture of translucent and dentine materials and do not feature additive layering like the shade tabs of the VITA 3D-MASTER Toothguide, the respective block shade is not identical with the one of the VITA SYSTEM 3D-MASTER Toothguide but very similar to it. This is indicated by the additional letter "C" following the shade designations for the VITABLOCS, for example "2M2C":

The initial "2" indicates the lightness group 2, "M" stands for the middle (neutral) hue, the second "2" indicates the intensity (chroma) group 2 and "C" stands for VITABLOCS for the CEREC or inLab system.

The middle layer (dentine or body layer) of the VITABLOCS TriLuxe corresponds exactly to the respective shade of a monochromatic VITABLOCS Mark II. The top layer (incisal or enamel layer) is less intensive and hence more translucent. The bottom layer (neck or cervical layer) exhibits a less intensive shade and hence is more opaque than the two upper layers. As a result, VITABLOCS TriLuxe reflect the layer structure of natural teeth even more closely.

With VITABLOCS TriLuxe forte, the color transition from the enamel to the neck layer is even more finely nuanced (4 layers) while the chroma in the neck area is more strongly accentuated. Combined with the increased fluorescence in the cervical area, this ensures a convincing shade effect even in the case of thin layers.

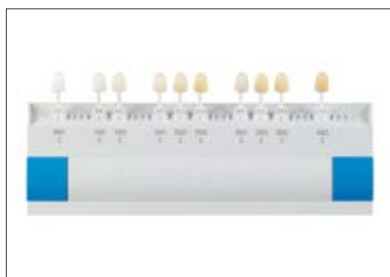
Thanks to the new three-dimensional block structure with dentine core and surrounding enamel coat, the layer structure of the VITABLOCS RealLife enables the reproduction of various color saturation levels (chroma) and various translucency levels with just a few basic shades depending on the respective clinical situation.

Please observe the detailed information in the Working Instructions No. 1724.

	Value →				
Chroma ↓	0M1C ²⁾	1M1C ²⁾	2M1C ²⁾	3M1C	–
	–	1M2C ¹⁾²⁾	2M2C ¹⁾²⁾	3M2C ¹⁾²⁾	4M2C
	–	–	2M3C	3M3C	–

¹⁾ available in VITABLOCS TriLuxe and TriLuxe forte

²⁾ Available in VITABLOCS RealLife



The most suitable sample of VITABLOCS for your restoration can be very easily selected using the VITABLOCS Guide 3D-MASTER made of original Mark II ceramic.

Fine-structure feldspar ceramic												
Designation	Dimensions (mm)	Content of pack	Shades									
VITABLOCS® Mark II / VITA SYSTEM 3D-MASTER®												
I8	8 x 8 x 15	5	–	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C
I10	8 x 10 x 15	5	–	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C
I12	10 x 12 x 15	5	0M1C	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C
I14	12 x 14 x 18	5	0M1C	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C
I-40/19*	15.5 x 19 x 39	2	–	1M1C	1M2C	–	2M2C	–	–	3M2C	–	–
VITABLOCS® TriLux® / VITA SYSTEM 3D-MASTER®												
TRI-12	10 x 12 x 15	10	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
TRI-14	12 x 14 x 18	5	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
TRI-14/14	14 x 14 x 18	5	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
VITABLOCS® TriLux® forte / VITA SYSTEM 3D-MASTER®												
TF-12	10 x 12 x 15	5	–	–	1M2C	–	2M2C	–	–	2M2C	–	–
TF-14	12 x 14 x 18	5	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
TF-14/14	14 x 14 x 18	5	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
TF-40/19*	15.5 x 19 x 39	2	–	–	1M2C	–	2M2C	–	–	3M2C	–	–
VITABLOCS® RealLife® / VITA SYSTEM 3D-MASTER®												
RL-14/14	14 x 14 x 18	5	0M1C	1M1C	1M2C	2M1C	2M2C	–	–	2M2C	–	–
VITABLOCS® Mark II / classical												
I8	8 x 8 x 15	5	A1C	A2C	A3C	A3,5C**	–	–	–	–	–	–
I10	8 x 10 x 15	5	A1C	A2C	A3C	A3,5C**	–	–	–	–	–	–
I12	10 x 12 x 15	5	A1C	A2C	A3C	A3,5C**	–	–	–	–	–	–
I14	12 x 14 x 18	5	A1C	A2C	A3C	A3,5C**	–	–	–	–	–	–
VITABLOCS® TriLux® / classical												
TRI-12	10 x 12 x 15	10	A1C	A2C	A3C	–	–	–	–	–	–	–
TRI-14	12 x 14 x 18	5	A1C	A2C	A3C	–	–	–	–	–	–	–
VITABLOCS® TriLux® forte / classical												
–	10 x 12 x 15	5	A1C	A2C	A3C	–	–	–	–	–	–	–
–	12 x 14 x 18	5	A1C	A2C	A3C	–	–	–	–	–	–	–

* for the Rapid Layer Technology ** available from spring 2014

VITABLOCS® Mark II in 10 VITA SYSTEM 3D-MASTER® shades

0M1C	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C

VITABLOCS® Mark II in 3 VITA classical shades

A1C	A2C	A3C

VITABLOCS® TriLuxe in 3 VITA SYSTEM 3D-MASTER® shades

1M2C	2M2C	3M2C

VITABLOCS® TriLuxe in 3 VITA classical shades

A1C	A2C	A3C

VITABLOCS® TriLuxe forte in 3 VITA SYSTEM 3D-MASTER® shades





1M2C	2M2C	3M2C





VITABLOCS® TriLuxe forte in 3 VITA classical shades

A1C	A2C	A3C

VITABLOCS® RealLife in 6 VITA SYSTEM 3D-MASTER® shades

0M1C	1M1C	1M2C	2M1C	2M2C	3M2C

	Fabrication of the restoration in the dental practice	Fabrication of the restoration in the dental laboratory	VITA products	
↓	Shade taking - tooth	–	VITA Easyshade VITA Toothguide 3D-MASTER VITABLOCS Guide 3D-MASTER (page 13)	
↓	Preparation optional Shade taking - stump	–	VITA SIMULATE Preparation Material (page 18)	
↓	Rubber dam	–	– (page 20)	
↓	Applying contrast powder or, alternatively, contrast spray	Produce master model	VITA CEREC Propellant VITA CEREC Powder VITA CEREC spray head VITA Powder Scan Spray (page 20)	
↓	Optical impression	Produce scan model	– (page 21)	
↓	CAD design with CEREC 3D software	Preparation for scanning	– (page 22)	
↓	Milling the restoration with CEREC	Fix scan model on scan holder.	VITABLOCS Mark II VITABLOCS TriLuxe VITABLOCS TriLuxe forte VITABLOCS Reallife (page 22)	
↓	Fitting - fine morphological adjustments Occlusion and articulation	Scanning	– (page 27)	

	Fabrication of the restoration in the dental practice	Fabrication of the restoration in the dental laboratory	VITA products	
↓	Finishing and polishing	CAD design with inLab 3D software	VITA KARAT diamond polishing paste (extraoral) (page 28)	
↓	Alternatively: characterization of the shade Individualizing/glazing	Milling of the restoration with inLab	VITA AKZENT Plus stains/glaze material VITA VM 9 ESTHETIC KIT VITA FIRING PASTE VITA SIMULATE Preparation Material (pages 29-45)	
↓	Adhesive bonding Ceramic etching Silanization Enamel/dentine etching Adhesive system Adhesive composite Oxygen protection gel	Placing the restoration on the model	VITA LUTING SET with: VITA CERAMICS Etch VITASIL VITA ETCHANT GEL VITA A.R.T. BOND VITA DUO CEMENT (page 23 ff)	
↓	Finishing and final polishing	Finishing and polishing on the model Alternatively: characterization/ individualization of the shade	VITA KARAT diamond polishing paste (page 28)	



Proper shade taking is the key to a restoration with a natural and esthetic appearance. The tooth shade of the non-prepared tooth or the adjacent teeth is determined after tooth cleaning.

It must be noted that the final shade result is mainly influenced by the shade of the prepared tooth stump and the shade of the VITABLOCS block.



The special VITABLOCS Guide 3D-MASTER is particularly suitable for shade determination and selecting the respective VITABLOCS block. The shade samples of the VITABLOCS Guide 3D-MASTER are monochromatic and built up from the original Mark II ceramic without any characterization of the shade.



If VITABLOCS TriLuxe, TriLuxe forte or RealLife are used for the fabrication of the restoration, the VITABLOCS guide should preferably be used for selecting the correct shade since the basic shade printed on the blocks corresponds to the shade of the respective shade tab.

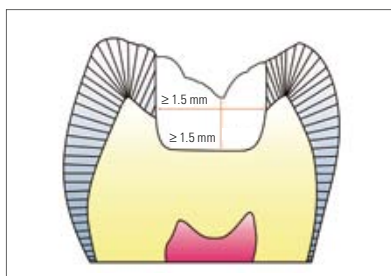


The "Block mode" of Easyshade Advance 4.0 enables digital determination of the block shade to be selected.

Note: As far as the subject of preparation of all-ceramic restorations is concerned, please read also our detailed brochure "Clinical Aspects of All-Ceramics" No. 1696.

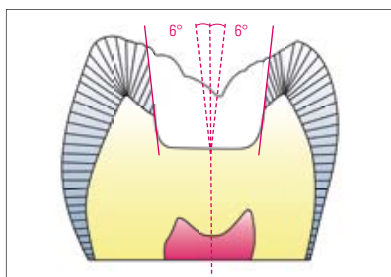
Inlays

Ceramic layer thickness below the lowest point of the fissure: at least 1.5 mm.
 Thickness of ceramic in the area of the isthmus: at least 1.5 mm.
 Box-shaped preparation without resilient margins is recommended.
 Round cavity segments, in particular at the bottom of the cavity, should be prepared and sharp edges must be avoided.

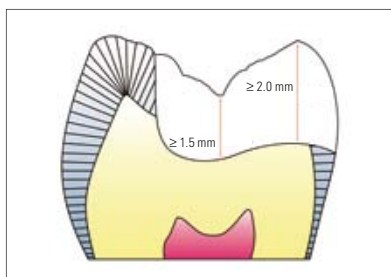


Ceramic layer thickness

Bottom of the fissure: **at least 1.5 mm**
 Area of the isthmus: **at least 1.5 mm**



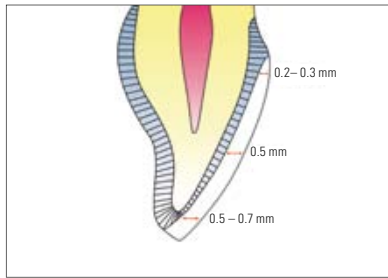
Opening angle $>10^\circ$



Onlays

Ceramic layer thickness

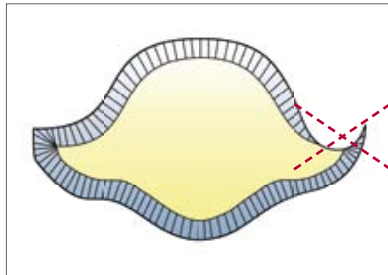
Bottom of the fissure: **at least 1.5 mm**
 Area of cusps: **at least 2.0 mm**



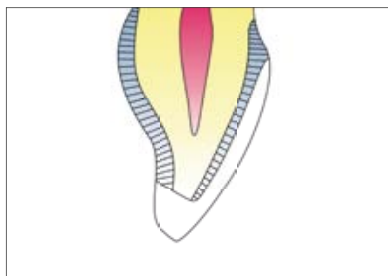
Veneers

Ceramic layer thickness

Labial:	on average at least 0.5 mm
Incisal third:	0.5 - 0.7 mm
Central third:	0.5 mm
Cervical third:	0.2 - 0.3 mm

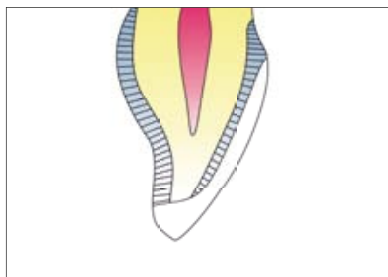


Gutter-shaped preparations should be avoided

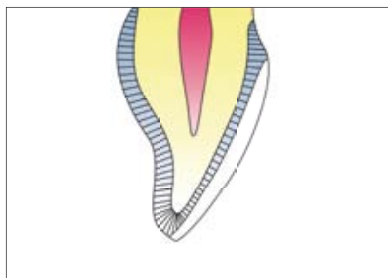


Types of incisal veneer preparation

Incisal reduction with bevelling in the palatal direction
(incisal path of insertion)



Incisally reduced, but labially inclined preparation margin
(buccal path of insertion)



The preparation border should taper towards the incisal edge
if at least 1.5 mm of tooth substance remain

Crowns

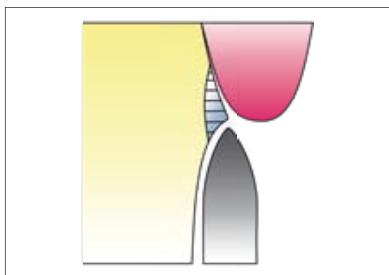
A chamfer or shoulder with rounded inner angle should be prepared in the case of all-ceramic crowns. The aim should be a circumferential cutting depth of one millimeter. The vertical preparation angle should be at least 3°. All transitions from the axial to the occlusal or incisal surfaces should be rounded. Homogeneous, smooth surfaces are recommended. A wax-up and the fabrication of silicone keys to control the preparation are helpful for the diagnosis and the clinical application (defect-oriented preparation).

Location of the preparation border

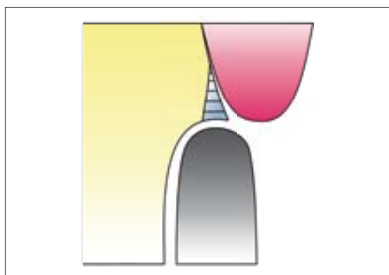
In light of periodontal-physiological considerations a subgingival preparation border should be prepared if possible.

If esthetic aspects are more important, a preparation border located in the paramarginal area may be required.

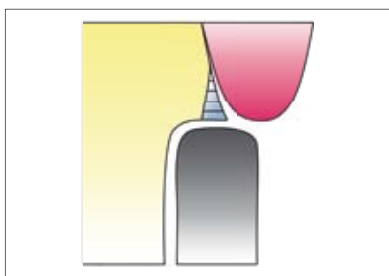
A subgingival preparation border should generally be avoided.



Chamfer preparation



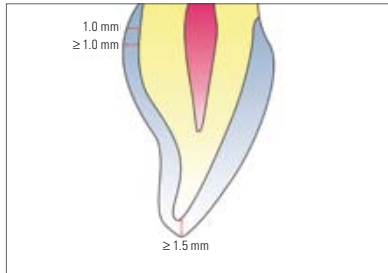
Accentuated chamfer preparation



Shoulder preparation or step with rounded inner edge

Ceramic layer thickness for crowns

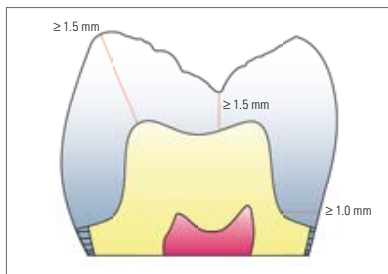
To ensure clinical success of crowns made from VITABLOCS, the following ceramic layer thicknesses needs to be adhered to:



Anterior crowns

Ceramic layer thickness

Incisal: **at least 1.5 mm**
Circumferential: **at least 1.0 mm**
Crown margin: **1.0 mm**



Posterior crowns

Ceramic layer thickness

Area of the cusps: **1.5 mm - 2.0 mm**
Bottom of the fissure: **at least 1.5 mm**
Circumferential: **1.0 - 1.5 mm**
Crown margin: **1.0 mm**



VITA SIMULATE Preparation Material

VITA SIMULATE Preparation Material is a light curing composite for the fabrication of artificial dies to simulate the shade of the prepared tooth and hence the oral situation. As the shade of the restoration can be verified in advance and corrected where required, this product enables dental technicians or dentists to reproduce the tooth shade, and to do so with greater reliability.



Determination of the shade of the prepared tooth stump using the VITA SIMULATE Preparation Material Guide. (shade table, see page 50)

It may be required to communicate the selected shade to the dental technician.

The acrylic die is prepared in the following way:



Use a brush to apply VITA SIMULATE Insulation Liquid without puddle formation in a thin, homogeneous layer to the interior of the ceramic crown or veneer.



Fill the interior of the ceramic restoration with VITA SIMULATE Preparation Material and condense the material using a modeling instrument in order to avoid cavity formation.



Press the application stick into the uncured die material and ensure that the tip of the application stick is positioned at the center of the restoration and does not touch the sides.



Fill the remaining cavities and adapt the material firmly around the application stick.

Close the syringe immediately after use!



Then remove excess die material from the margins using a modeling instrument.

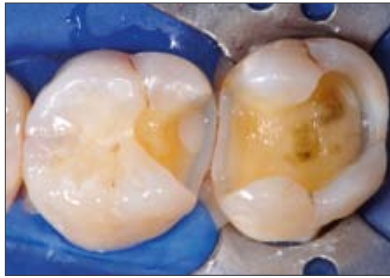


Cure the die material using a light-curing unit or a hand-held curing light for at least 90 seconds depending on the unit (see table). Please follow manufacturer's instructions! (see working instructions, No. 1461).



Remove the cured VITA SIMULATE die from the restoration and clean the restoration in the ultrasonic unit. Then use the VITA SIMULATE die to check whether the shade of the completed all-ceramic restoration corresponds to the desired shade. If necessary, shade adjustments can be carried out by staining with VITA AKZENT Plus, VITA AKZENT Plus paste or VITA SHADING PASTE or by layering with VITA VM 9.

See note on pages 30 and 35.



Application of contrast powder and contrast spray*

The treatment area needs to be prepared to ensure perfect control (e.g. rubber dam) prior to taking the opto-electronic impression with the CEREC intraoral camera.

Optional: Place a rubber dam to obtain a more clearly arranged treatment area, which can be kept dry during adhesive cementation of the ceramic restoration.



Application of VITA CEREC LIQUID onto the prepared teeth

Then disperse the liquid to obtain a thin film. As a result the liquid is spread precisely and enhanced adhesion of the POWDER to the tooth substance is achieved.

Moreover the liquid can be removed more easily later on.



VITA CEREC POWDER, which is sprayed with the VITA CEREC PROPELLANT onto the prepared tooth substance and onto the adjacent teeth, conditions the surface for the opto-electronic impression with the CEREC method to achieve a perfect picture (scan) quality for the design of the restoration.



Do not shake the bottle prior to the use!

Apply a thin, uniform coat of contrast powder using several spray blasts.

The bottle should always be held upright to avoid clogging of the nozzle caused by liquid gas.

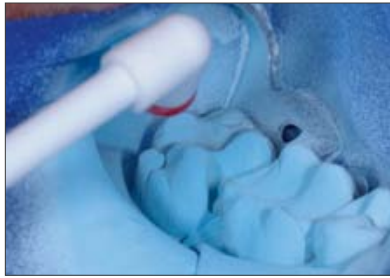


Alternative - VITA Powder Scan Spray

Instead of VITA CEREC POWDER, VITA Powder Scan Spray can be used to condition the prepared tooth substance.



* When using Sirona Omnicam, powder is not used for the optical impression.



Use of VITA Powder Scan Spray

Preparing for spraying

Attach the spray cannula to the spray can. The nozzle can be rotated by 360° to obtain a perfect position towards the areas to be spray coated. The spray cannula can be bent slightly. However, never kink it at a right angle. Surfaces to be spray coated need to be cleaned and dried adequately. Shake the spray can well prior to the use! The mixing ball needs to be heard clearly.



Spray procedure

The can should be held upright during spraying. The spray head must be pressed gently during spraying and a short spray blast (for each tooth) is used to discharge a small quantity of the content.

Use sparingly. If possible, the distance of the spray nozzle to the surface to be spray coated should be approx. 10-15 mm.



The surface needs to be coated completely and evenly thin.

Then carry out the optical impression according to the instructions of Sirona.



Cleaning the tooth surfaces after successful optical impression

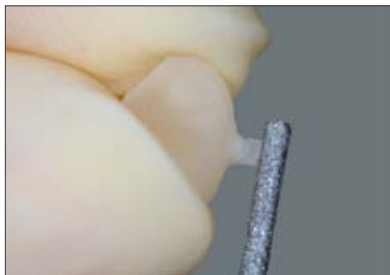
After the optical impression, the surface must be cleaned using water/air spray. The tooth surface must be cleaned thoroughly.



Cotton pellets and small rotary brushes can also be used for cleaning.

CAD design, milling

Detailed information can be found in the documentation of your CEREC or inLab system.



The lug is cut off using a diamond tool or coarse, flexible discs.



Then the proximal surfaces are polished. Use flexible discs (adjust low speed) to remove irregularities or unevenness at the margins.



Then the restoration is carefully fitted.
Use dental floss to check the proximal contacts.



⚠ Note: Note: Restorations made of VITABLOCS fine-structure feldspar ceramic must not be reworked with tungsten carbide instruments since they create microcracks, which damage the ceramic. The following must be observed:

- Only fine-grained diamond abrasives (40 µm) should be used for contouring and finishing diamonds (8 µm) for prepolishing.
- It is recommended to polish with Al₂O₃-coated flexible discs, polishing brushes and diamond polishing paste
- Fine corrections should be carried out under slight pressure with ample water cooling.

Adhesive bonding

Today a variety of adhesive bonding systems is available on the market. The information given below describes a possible procedure.

Correct processing and adherence to the manufacturer's instructions are essential for the clinical success of all systems.

Light- or dual-curing fine-hybrid composites and a properly used functional enamel-dentine adhesive system (Total Bonding) should be used for adhesive bonding (cementation) of restorations made of VITABLOCS. The ultrasonic insertion method or preheated composite can be used for stronger composite materials.

The self-adhesive composite RelyX Unicem (3M ESPE) can be used exclusively for crowns.

⚠ Note: Temporary bonding is not permitted for restorations made of silicate ceramic, such as VITABLOCS, since adequate stabilization is not ensured. Risk of fracture!

Basically, there are no differences in the protocols for adhesive cementation of inlays, crowns and veneers. However, a few special aspects should be considered for adhesive cementation of veneers and crowns:

- Dual-curing composite cements should not be used for thin veneers since these materials may cause a slight change in color (yellow shade) after curing. Therefore a light-curing composite should be preferred.
- A microbrush glued to the veneer using a light-curing bonding material can be used as a holder.
- Fixing the veneer with a finger allows more uniform distribution of pressure during the adhesive cementation.
- Adhesive bonding of crowns should preferably be performed using a more flowable, dual-curing composite (depending on the thickness of the layering).





Step-by-step description based on the example of an inlay

Conditioning the tooth substance

Try-in of the restoration; check the fit visually and by tactile means.



Drying (rubber dam) or placement of cotton rolls, dry-angles, sublingual roll



If present, etch enamel with VITA ETCHANT GEL (phosphoric acid gel, 35%) for 30 sec.

Spray for 30 sec. and dry for 20 sec.

Control: etched surface must be white opaque.



Agitate dentine primer (for example Syntac Primer or VITA A.R.T. BOND Primer A+B) with a disposable brush or Microbrush for 30 sec, dry with air for 15 sec. Agitate dentine adhesive (for example, Syntac adhesive) for 30 sec. and dry with air for 15 sec. Agitate primer coat of adhesive (for example Heliobond or VITA A.R.T. BOND, Bonder) for 20 sec, clean carefully for 5 sec (using air). Any excess should be soaked up with endo paper points.

Light curing: 60 sec.



Conditioning the restoration

Use alcohol to degrease the restoration before it is seated.

Apply VITA CERAMICS ETCH (hydrofluoric acid gel, 5%) to the inner surfaces.

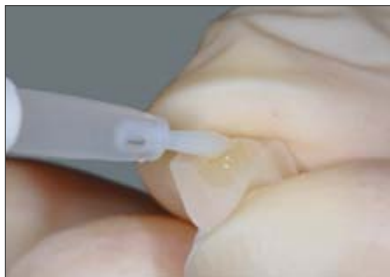
Etching time: 60 sec.



Completely remove any remaining acid by using water spray (60 sec) or clean in the ultrasonic bath. Then dry for 20 sec.
Do not clean with a brush to avoid the risk of contamination! After drying, the etched surfaces have a whitish opaque appearance.



Apply silane (for example VITASIL) to the etched surfaces.
Allow to evaporate completely.



Agitate primer coat of adhesive (for example Heliobond or VITA A.R.T. BOND Bonder), blow off. Do not light cure!

The restoration must be protected against light before it is inserted.



Insertion

Composite is applied thinly into the cavity and the restoration is carefully placed in situ.

Use a probe to remove excess composite.

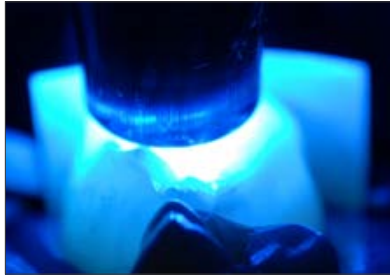


Optional:

Seat the restoration by means of ultrasonic insertion.



Application of oxygen protection gel (for example VITA OXY-PREVENT) to the cervical margins to prevent oxygen inhibition.



Light curing - buccal: 40 sec., oral: 40 sec., occlusal: 40 sec (for each proximal surface)

Use a powerful and properly functioning polymerization light. Generally, 2nd generation LED polymerization units with 5 W LED chips and a lamp power of > 1000mW/cm² are suitable, such as:

- Demi plus (Demetron)
- PenCure (Morita)
- Bluephase (Ivoclar Vivadent)
- G-Light (GC)
- SPEC 3 LED (Coltène Whaledent)
- Valo LED (Ultradent)



Remove excess with file or fine diamond abrasives (max. 40 µm).



Flexible abrasive discs are used for polishing proximal surfaces. Thin, coated acrylic discs have proven to be most suitable.



The shade of the completed restoration matches the shade of adjacent teeth. Immediately after cementing, teeth are often too dry and the restorations may appear somewhat too dark at first sight.

Fine morphological adjustments of the occlusion

The occlusion should be completely free of interferences, i.e. without any premature contacts in static and dynamic occlusion. Particularly the marginal contacts should be carefully adjusted. In the case of pronounced convex or large proximal surfaces of which the margin made of ceramic is not supported by the shoulder, no marginal contacts should be positioned to avoid fracture. Central occlusal contacts should not be positioned on the margins of restorations. If possible, occlusally exposed dentine should be integrated into the restoration.



The following procedure is recommended:

When fabricating delicate restorations (in particular inlays and onlays with very thin ceramic layers), the occlusion should only be checked after definitive cementing to avoid fractures in the ceramic.



Use shimstock film for marking occlusal interferences in the static occlusion. Remove occlusal interferences in the static occlusion and smooth the surface with spindle-shaped diamond abrasives (40 µm, red color coding). Use spindle-shaped diamond abrasives (40 µm) for marking and removing occlusal interferences in the dynamic occlusion.

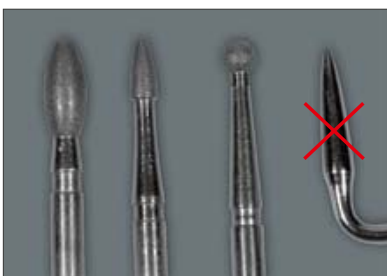
Sufficient cooling with water must be ensured!



The use of pointed diamond tools must be avoided since they penetrate too deeply into the fissures and may weaken the ceramic.



Prepolish with 8 µm diamond abrasives whilst exerting slight pressure; adequate cooling with water must be ensured.



Note: Fine-grit diamond tools with round tip should be used for finishing ceramic restorations. Tools with a sharp tip (cf. composite contouring tool, to the right in the photo) will weaken the ceramic.



Finishing and polishing

Careful polishing is decisive for the overall esthetic and functional appearance of the restoration. A carefully polished ceramic surface reduces plaque accumulation and protects the antagonist tooth against abrasion.

Pay attention to margins and contact points when polishing the restoration. The correct speed must be ensured and generation of heat must be avoided. Prior to cementation, proximal areas are polished outside the mouth, for example with VITA KARAT diamond polishing paste. To achieve a natural surface shine, the following procedure is recommended:



Finishing/smoothing the outer and occlusal surface of the restoration using Al₂O₃-coated flexible discs (for example Sof-Lex discs, 3M Espe) in descending order of grit size (black, dark blue, medium blue, light blue) and fine-grit finishing diamonds while exerting little pressure and ensuring sufficient cooling with water (observe manufacturer's instructions).



High-gloss polishing of the surface with Occlubrush (Hawe Neos) and diamond polishing paste (for example Ultra II ceramic polishing paste, Shofu). Polish in the lower speed range (max. 15,000 rpm) with intermittent pressure (without water cooling).

Finally, the polishing paste is removed with the Occlubrush brush and water spray.



Completely polished restoration

Fluoridating the working area

Removal of adhesively bonded partial restorations

When fabricating restorations such as inlays, onlays, partial crowns, etc. the transitions between restoration, composite and tooth substance can hardly be distinguished during wet grinding. In order not to penetrate too deeply into the tooth substance, it is recommended to stop the tool intermittently and to dry the working area with air.

Recommended tool:

Cylindrical diamond tool (105 – 124 µm).

Trepanation

A cylindrical diamond tool is preferably used to create a trepanation opening (transversal). Once the opening is created, continue using conventional procedures.

Characterization / Individualization of the shade

In esthetically demanding cases, the shades of restorations made of VITABLOCS can be characterized/individualized.

Generally, two different concepts can be used:

- Characterization with VITA AKZENT Plus stains (see page 30)
- Individualization with porcelains of VITA VM 9 veneering material (see page 38)



Necessary firing equipment

A furnace, such as VITA VACUMAT 6000 M, is required for characterizing with stains and glaze material and for individualizing with VITA VM 9.

Freely selectable control units can be connected to the furnace, such as



VITA vPad clinical - especially for dentists

- intuitive one-touch operation through self-explanatory symbols
- large 7-inch color touch screen with 1 GB photo viewer
- all the necessary block programs are already preconfigured
- 500 customizable firing programs
- 4 individual user profiles for personal settings



VITA vPad excellence - highly exclusive

- 8.5-inch color touchscreen with 2GB photo viewer
- operation of up to four sintering, firing or combipress furnaces using a single control unit
- 1000 customizable firing, pressing, sintering and crystallization programs
- creation of up to twelve user profiles



VITA VACUMAT 6000 M is available in two designs:

Stainless steel and anthracite design - the furnace can be customized with color side panels.

Learn more!

www.vita-new-generation.com



Characterization with VITA AKZENT Plus stains

Anterior restorations can be perfectly characterized with stains in particular if discoloration of the surface needs to be reproduced. Teeth without highly translucent areas and with minor internal changes are particularly suitable.

⚠ Note: A layer of stain which is too thick inhibits the penetration of light and results in an unnatural appearance.

When using the new VITA AKZENT Plus pastes which feature excellent ceramic translucency, the final shade effect can not be recognized in the wet condition immediately after applying the stains to the milled VITA Mark II block but only after firing.

Systems in 3 different forms are available for characterizing with ceramic stains:



1. VITA AKZENT Plus PASTE KIT

with 19 stain pastes (shade table see page 53) for simple and fast surface characterization in the dental practice:

- ready-to-use pastes with uniform consistency and homogeneous pigmentation for fast application
- can be mixed with one another to achieve individual shade effects
- can be diluted or mixed again



2. VITA AKZENT Plus POWDER KIT

with 19 stain powders (shade table see page 53) for surface characterization:

Consistency can be adjusted by adding different quantities of liquid.

- The powder materials are perfectly suitable for mixing with the ceramic layering materials (add max. 5 % of stain powder) and for intensifying the shade of these materials.
- The AKZENT Plus materials can all be mixed with one another.
- Unlimited flexibility and cost-effectiveness since materials have unlimited shelf life.



3. VITA AKZENT Plus SPRAY KIT

Particularly suited for monolithic restorations made of VITABLOCS.

The spray glaze and spray finishing agent shades are ready to use and easy to apply.

- uniform application
- precise spray application without any wastage as a result of scatter thanks to a special new spray head

⚠ Note: To save time, stains firing and glaze firing can be carried out simultaneously when using VITA AKZENT Plus PASTE or VITA AKZENT Plus POWDER materials.



Step-by-step procedure based on the example of VITA AKZENT Plus EFFECT STAINS*

Crown made from a VITABLOC block immediately after milling.
The lug is cut off using a diamond grinding tool or a flexible disk.



If present and necessary, the crown is fitted on the model.
Fine diamond tools are suitable for finishing. If possible, the ceramic should be ground when wet.

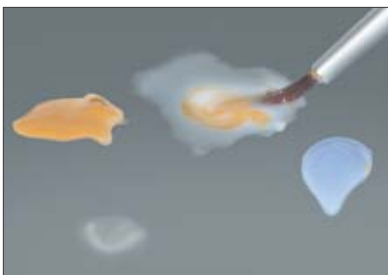


A texture marker can be applied to analyze the shape and surface texture, which can be optimized by grinding later on.

⚠ **Note:** The texture marker needs to be completely removed with steam prior to any firing process to avoid discoloration on the ceramic.



Grinding particles and grease are removed from the finished crown using steam or alcohol. A pair of tweezers (e.g. Smart Clip, Hammacher) or pick-up sticks (Hager & Werken) are suitable to hold the object.



The selected AKZENT Plus EFFECT STAIN POWDER stain and AKZENT Plus POWDER FLUID are mixed to obtain the desired consistency and intensity.

Additionally, AKZENT Plus FINISHING AGENT can be added to adjust the intensity.

* Please observe the information in the Working Instructions VITA AKZENT Plus, No. 1925.



A thin transparent layer of stain is applied to the restoration.

First the stain is applied to the proximal surfaces.



A distinctive incisal edge effect can be achieved through the use of VITA AKZENT Plus EFFECT STAIN ES 11 blue and ES12 grey-blue. Additional shade characteristics can be imitated with suitable stain mixtures. A comparison with a shade sample (tab) from the VITA Toothguide 3D-MASTER toothguide or the VITA classical A–D shade guide is used to check the result. See the table on page 34.



The characterized restoration is placed on the firing tray and fired in the VITA VACUMAT.

Firing under vacuum is not required for glazing.

The figure on the left shows the restoration after the first firing.



A thin, covering layer of glaze material (VITA AKZENT Plus GLAZE) is applied in the next step. During the application, minor shade corrections can be integrated into the glaze material.

Optional:

Stain firing can be carried out together with glaze firing when using AKZENT Plus GLAZE. The restoration is coated with VITA AKZENT Plus GLAZE and then characterized with VITA AKZENT Plus stains.



Additionally, mechanical polishing of the glazed restoration can be carried out. For this purpose, e.g. Dia-Glaze (Yeti) or VITA KARAT diamond polishing paste (for extraoral use only) can be used.

- Since VITABLOCS are not available in all VITA SYSTEM 3D-MASTER and VITA classical shades, the classification table (see pages 34 and 35) can be used for safe reproduction of shades not available as blocks using VITA AKZENT Plus.
- Please note that the monochromatic VITABLOCS Mark II and the multichromatic VITABLOCS TriLuxe, TriLuxe forte and RealLife are not layered like shade sample teeth and therefore the shades of 3D-MASTER Toothguide or VITA classical A1-D4 shade guide and the corresponding block or VITABLOCS guide are not identical. This is indicated by the additional letter "C" following the shade designation on the block.

⚠ **Note:** Do not apply excessively thick layers of stain; in cases of uncertainty, 2 stain fixation firings should be carried out.

- The correct selection of the block shade to reproduce the natural tooth shade of the patient is very important in this system. The milled restoration is the basic shade "carrier" and hence essential for the final impression of the stained restoration. Fine nuances of the shade are achieved by staining.

VITA SYSTEM 3D-MASTER

Classification table for shade characterization of VITABLOCS Mark II with VITA AKZENT Plus PASTE

Based on the information in the table and in order to mix the materials, the respective quantities are added next to each other onto the mixing tray using the brush and then the quantities are mixed to obtain the final paste. This way fine individual shade reproduction is achieved.

- VITA AKZENT Plus BODY STAINS should always be applied starting from the neck up to **max. two thirds of the tooth length** towards the incisal edge.
- As a result, the pure block shade forms the undercoat of the incisal edge. This is the precondition to always achieve a good translucent effect through the additional use of EFFECT STAINS incisal shades.
- The ratios of the individual stain proportions depend on the wall thickness of the crown or the veneer. It is recommended to hold the shade tab of the VITA SYSTEM 3D-MASTER Toothguide next to the object when applying the stain, if no VITA SIMULATE Preparation Material KIT is available for reproducing the stump shade, and to verify the shade after applying the stain. See information on page 34.

Lightness group	VITA SYSTEM 3D-MASTER Toothguide	Shade of VITABLOCS block or VITABLOCS Guide	Mixture for characterization
0	0M1	0M1C	only GLAZE glaze material, applied thinly
1	1M1	1M1C	BS 5 ES 12 / ES 13
1	1M2	1M2C	2/5 BS 01 + 2/5 BS 03 + 1/5 ES 13, ES 12
2	2L1,5	2M1C	2/4 BS 04 + 1/4 BS 02 + 1/4 BS 01 + small quantity of ES 13
2	2L2,5	2M2	2/5 BS 02 + 2/5 BS 04 + 1/5 BS 03
2	2M1	2M1	3/4 BS 05 + 1/4 ES 13 + small quantity of ES 07
2	2M2	2M2	1/2 BS 03 + 1/2 BS 04, incisal 1/2 ES 12 + 1/2 ES 13
2	2M3	2M3C	2/3 BS 02 + 1/3 BS 03 + 1 brush tip each of ES 04 and ES 05, stain must be applied thinly
2	2R1,5	2M1	3/5 BS 05 + 2/5 BS 03 + 1 brush tip of ES 13
2	2R2,5	2M2C	2/5 BS 05 + 2/5 BS 03 + 1/5 BS 02
3	3L1,5	3M1C	2/5 BS 04 + 2/5 BS 05 + 1/5 ES 07 observe block shade
3	3L2,5	3M2	2/5 BS 04 + 2/5 BS 02 + 1/5 ES 07 observe block shade
3	3M1	3M1C	2/4 BS 05 + 1/4 ES 07 + 1/4 ES 13 + 1 brush tip of ES 06
3	3M2	3M2C	2/4 BS 05 + 1/4 BS 03 + 1/4 ES 07 + (1 brush tip of ES 06, if a more intensive shade is required)
3	3M3	3M3C	2/4 BS 02 + 1/4 BS 03 + 1/4 BS 04 + 1 brush tip of ES 07
3	3R1,5	3M1C	4/5 BS 05 + 1/5 ES 07 + 1 small quantity of ES 06 each
3	3R2,5	3M2C	2/4 BS 05 + 1/4 BS 03 + 1/4 ES 07
	Incisal shade		Mixture of ES 12, ES 13 and ES 10. Applies to all shades, to achieve a translucent effect

VITA classical

Classification table for shade characterization of VITABLOCS Mark II with VITA AKZENT Plus PASTE

Based on the information in the table and in order to mix the materials, the respective quantities are added next to each other onto the mixing tray using the brush and then the quantities are mixed to obtain the final paste. This way fine individual shade reproduction is achieved.

- VITA AKZENT Plus BODY STAINS should always be applied starting from the neck **across the entire length of the tooth** towards the incisal edge.

Tooth shade of the patient	Shade of the VITABLOCS block	Mixture for characterization
A1	A1C	4/5 BS 04 + 1/5 BS 03; Incisal: 1/2 ES 12 + 1/2 ES 13; Mamelons: ES 03
B1		2/3 BS 04 + 1/3 BS 02; Incisal: 2/3 ES 13 + 1/3 ES 12; Mamelons: ES 2 or 1/2 ES 2 + 1/2 ES 3
C1		3/5 BS 04 + 1/5 ES 7 + 1/5 ES 13; Incisal: ES 13 unmixed or 1/2 ES 7 + 1/2 ES 2
A2	A2C	3/5 BS 05 + 1/5 BS 02 + 1/5 BS 03; Incisal: 2/3 ES 2 + 1/3 ES 12; Effects: ES 2 and ES 5
B2		2/3 BS 04 + 1/3 BS 02 + 1 small quantity of BS 03; Incisal: 2/3 ES 13 + 1/3 ES 12; Effects: ES 2/ES 4/ES 11
C2		2/5 ES 7 + 2/5 BS 02 + 1/5 BS 04 + 1 brush tip of ES 13; Incisal: 2/3 ES 13 + 1/3 ES 12; Effects: ES 2/ES 5/ES 7
A3	A3C	2/4 BS 05 + 1/4 BS 02 + 1/4 BS 03 + 1 very small quantity of ES 6; Incisal: 2/3 ES 13 + 1/3 ES 12; Effects: with mixture of base shades or ES 2 and ES 5
B3		2/4 BS 02 + 1/4 ES 7 + 1/4 BS 04 + 1 larger quantity of BS 03; Incisal: 2/3 ES 13 + 1/3 ES 12; Effects: ES 2/ES 4/ES 5/ES 10
C3		2/5 ES 7 + 2/5 BS 02 + 1/5 BS 04 + some ES 13 and 1 brush tip of ES 14; Incisal: Combination of stripes of ES 12 + ES 10 added next to one another, then roughen slightly to let the components flow together
A3.5		1/3 ES 7 + 1/3 BS 02 + 1/3 BS 05 + 1 small quantity of ES 06; Incisal: 2/3 ES 12 + 1/3 ES 10; Effects: ES 2/ES 5
A4		1/4 ES 7 + 1/4 BS 02 + 1/4 BS 03 + 1/4 BS 05 + one brush tip each of ES 6 and ES 14; Incisal: 1/3 ES 10 + 1/3 ES 12 + 1/3 Es 13
C4		2/4 ES 7 + 1/4 BS 04 + 1/4 BS 05 + 1 brush tip of ES 14 and BS 03

Overview of recommended firing programs for characterization with VITA AKZENT Plus in the VITA VACUMAT

	Predry. °C	→ min	↗ min	↗ °C/min	approx. temp. °C	→ min	VAC min
Stains fixation firing	400	4.00	4.23	80	850	1.00	–
Glaze firing with VITA AKZENT Plus POWDER and SPRAY	500	4.00	5.37	80	950	1.00	–
VITA AKZENT Plus PASTE	500	6.00	5.37	80	950	1.00	–



Optional:

VITA AKZENT Plus GLAZE SPRAY

Alternatively, VITA AKZENT Plus GLAZE SPRAY can be used for glazing with VITA AKZENT Plus GLAZE material or VITA AKZENT GLAZE PASTE.



VITA AKZENT Plus GLAZE SPRAY is a spray-on ceramic powder that can be easily applied and is suitable for glazing all-ceramic and metal ceramic restorations, such as inlays, onlays, veneers, crowns and bridges with a sintering temperature of $\geq 800^{\circ}\text{C}$.

Stains firing can be carried out together with glaze firing when using VITA AKZENT Plus GLAZE SPRAY.

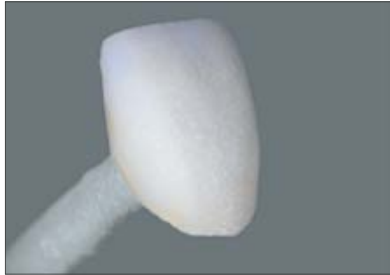
⚠ Note: To avoid spraying onto the adhesive surfaces of the restoration (e.g. basal surface of inlays, inner surfaces of crowns and veneers), it is recommended to use VITA Firing Paste to prepare an individual firing tray. As a result, inaccuracy of fit is avoided. See working instructions on page 42. Moreover glaze material can not be adequately etched with hydrofluoric acid.



⚠ **Note:** Shake VITA AKZENT PLUS GLAZE SPRAY well prior to use (approx. 1 min.). The mixing ball needs to be heard clearly.

Apply VITA AKZENT Plus GLAZE SPRAY to the stain at a distance of approx. 10 - 15 cm to the restoration in a way to ensure uniform and complete coverage.

Spray intermittently to achieve optimum results.



Let solvent evaporate completely while spraying to be able to control the thickness of the glaze layer that has already been applied. A whitish (GLAZE, GLAZE LT) and reddish (BODY) coat indicates a uniform layer. If required, spray again.

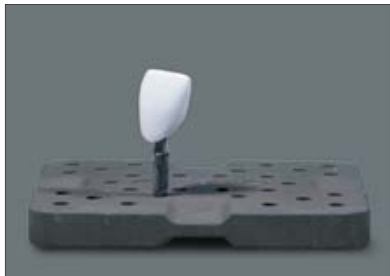
⚠ **Note:** The use of a hairdryer results in faster evaporation.



The bottle needs to be shaken between the individual spraying processes for several restorations.

Best results are obtained with 2 to 3 layers of glaze material.

Place the restoration on a firing tray.



⚠ **Important information:** Since dust is formed during spraying, always wear a face mask and safety goggles. Additionally, it is recommended to use an extraction unit.



Firing of VITA AKZENT Plus GLAZE SPRAY in the VITA VACUMAT

Predry. °C	→ min	↗ min	↗ °C/min	approx. temp. °C	→ min	VAC min
500	4.00	5.37	80	950	1.00	–



Restoration after characterization of the shade

Individualization of anterior crowns and veneers with VITA VM 9

VITA VM 9 is a fine-structure ceramic with a CTE of $9.0 - 9.2 \cdot 10^{-6} \cdot K^{-1}$ for veneering bridge and crown substructures made of yttria-stabilized zirconia ($Y-ZrO_2$), such as VITA In-Ceram YZ, and for individualizing milled restorations made from the fine-structure feldspar ceramic blocks with a CTE (20-500°C) of approx. $9.4 \cdot 10^{-6} \cdot K^{-1}$.



- VITABLOCS Mark II
- VITABLOCS TriLuxe
- VITABLOCS TriLuxe forte
- VITABLOCS RealLife



The VITAVM9 ESTHETIC KIT for VITABLOCS (Prod. No. BV9EKC) with selected VITA VM 9 materials and accessories is available especially for individualizing.

VITA VM 9 materials excel in their refraction and reflection behavior which can be compared to that of enamel. The use of the fluorescent and opalescent additional materials allows enhancing the esthetic results. Please observe the information in the corresponding Working Instructions, No. 1190.

Since both the basic ceramic material and the veneering material exhibit a fine-particle structure, VITABLOCS restorations individualized with VITA VM 9 veneering material exhibit enamel-like properties.

Contraindication

VITA VM 9 must not be used for direct veneers on copings made from VITABLOCS.

⚠ Important information: To ensure clinical success, the milled restorations may only be reduced to such an extent that minimum wall thicknesses are adhered to prior to individualizing with VITAVM9. See also information on page 7. Reduction of the restorations can also be carried out with the CAD software.

Veneer

The thickness of a milled veneer should not be less than 0.5 mm to avoid distortion of the restoration when firing on VITAVM9 (cf. page 15). In such cases the use of VITA Firing Paste is strongly recommended.



Step-by-step procedure based on the example of an anterior crown

Milling of the restoration.

The lug is removed with a diamond-coated milling tool.
Any premature contacts are ground off carefully from the inner side of the veneer.
Mesial and distal contacts are checked.



Pretreatment

Crown immediately after the grinding process on the working model prior to the cut-back process.



To obtain sufficient space for layering on the enamel, the incisal area is reduced with a diamond milling instrument.

⚠ Important information: Restorations made of VITABLOCS fine-structure feldspar ceramic must not be reworked using tungsten carbide instruments since such instruments produce microcracks and damage the ceramic.
It is recommended to exert only little pressure and use sufficient water cooling.

When reducing the thickness, undercuts must be avoided since they weaken the basic ceramic.

The minimum thickness of the basic material must be adhered to (cf. page 17 ff).



Remove any grinding particles from the veneer with steam or alcohol.



Optional:

Characterization with VITA AKZENT Plus stains

VITA AKZENT Plus stains can not only be used for external characterization of restorations made from VITABLOCS. After morphological reduction, stains can be also integrated into fissures and mamelon structures (see firing table) before starting actual layering with VITA VM 9 materials. Enhanced shade effect from the depth is achieved especially in cases of limited space.



Fixation of stains

Recommended firing

Predry. °C	→ min	↗ min	↗ °C/min	approx. temp. °C	→ min	VAC min
500	4.00	4.23	80	850	1.00	–



⚠ Important information: Before applying the VITAVM9 materials, modelling liquid (VITA VM MODELLING LIQUID) should be applied to the reduced restoration to achieve adequate wetting.

Noncompliance will result in the fact that the ceramic material will come off the basic structure.



Application of VITA VM 9 MAMELON



Application of VITA VM 9 ENAMEL

Enamel classification

VITA SYSTEM 3D-MASTER

Block shade	0M1C	1M1C	1M2C	2M1C	2M2C	2M3C	3M1C	3M2C	3M3C	4M2C
Enamel	ENL	ENL	ENL	ENL	ENL	ENL	ENL	ENL	ENL	END

VITA classical

Block shade	A1C	A2C	A3C
Enamel	ENL	ENL	ENL



The layered restoration ready for "individualization firing".

Place the individualized restoration on a suitable firing tray.

VENEER: place on fibrous pad. When using fibrous pad, the final firing temperature needs to be raised by approx. 10-20°C.



Use of VITA Firing Paste

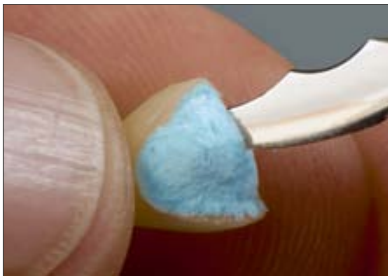
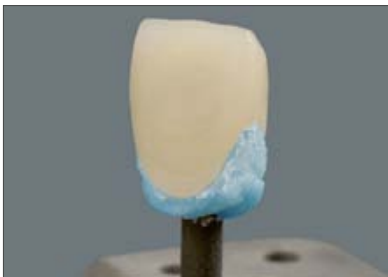
Indication

VITA Firing Paste is a blue-colored, ready-to-use, fire-resistant paste used for the manufacture of individual firing trays for the all-ceramic and the metal ceramic technique. The material enables the secure attachment of firing objects on the firing tray, and is used for stabilizing substructure-free press ceramic restorations during the firing procedure, while at the same time ensuring optimum heat distribution. VITA Firing Paste is easy to remove again after completion of the firing cycle.



Use

Apply VITA Firing Paste directly from the syringe into the restoration or the inner surfaces of the restoration (slightly overfill the restoration) and place the restoration carefully onto the firing tray.



⚠ Important information: VITA Firing Paste contains aluminium silicate fibers. Wear a face mask and work under an extraction unit when removing the hardened paste. Alternatively: rinse off under running water. Any residue is removed in the ultrasonic bath. Do not sandblast!
See information on hazardous substances on page 54.



Recommended firing of VITAVM®9 in the VITA VACUMAT®

Predry. °C	→ min	↗ min	↗ °C/min	approx. temp. °C	→ min	VAC min
500	6.00	7.49	55	930	1.00	7.49

When using VITA Firing Paste, the firing temperature for VITA VM 9 should be 10-20 °C above the values provided in the working instructions for VITA VM 9.



Restoration after individualization firing

Finishing

Finish the restoration. Mechanical polishing with diamond polishing paste (KARAT diamond polishing paste, VITA).

⚠ **Important information:** In case of formation of dust, use an extraction system or wear a face mask. Additionally, protective goggles must be worn when grinding the fired ceramic.



If required, the entire restoration can be coated with VITA AKZENT Plus GLAZE POWDER, AKZENT Plus GLAZE SPRAY, AKZENT Plus GLAZE PASTE or with VITA AKZENT Plus FINISHING AGENT POWDER or PASTE.

To achieve uniform gloss, the restorations should be polished with rubber polishers prior to glaze firing.



Completed restoration on the model after glaze firing.



A texture marker can be applied to analyze the shape and surface texture, which can be optimized by grinding later on.

⚠ **Note:** The texture marker needs to be completely removed with steam prior to any firing process to avoid discoloration on the ceramic.

	Predry. °C	 min	 min	 °C/min	approx. temp. °C	 min	VAC min
Stains fixation firing VITA AKZENT Plus	500	4.00	4.23	80	850	1.00	–
First individualization firing with VITA VM 9 *	500	6.00	7.49	55	930	1.00	7.49
Second individualization firing with VITA VM 9 *	500	6.00	7.38	55	920	1.00	7.38
Glaze firing VITA AKZENT Plus	500	4.00	5.15	80	920	1.00	–
Glaze firing VITA GLAZE LT powder	500	4.00	3.30	80	780	1.00	–
Glaze firing VITA GLAZE LT paste	500	6.00	3.30	80	780	1.00	–
Corrective firing with VITA VM 9 COR	500	4.00	4.40	60	780	1.00	4.40





* When using Firing Paste, the firing temperature for VITA VM 9 should be increased by 10-20°C.

When using dental ceramics, the firing result largely depends on the individual firing procedure of the user, i.e. among other aspects, the type of furnace, the location of the temperature sensor, the firing tray as well as the size of the object during the firing cycles.

Our application-technical recommendations for the firing temperatures (regardless of whether they have been provided orally, in writing or in the form of practical instructions) are based on extensive experience and tests. The user, however, should consider this information only as a reference.

Should the surface quality or the degree of transparency or glaze not correspond to the firing result that is achieved under optimum conditions, the firing procedure must be adjusted correspondingly. The crucial factors for the firing procedure are not the firing temperature indicated on the furnace display, but the appearance and the surface quality of the firing object after firing.

Explanation of the firing parameters:







- Predry. °C Start temperature
-  Predrying time in minutes, closing time
-  Heating time in minutes
-  Temperature rise rate in degrees Celsius per minute
- Temp. approx. °C End temperature
-  Holding time for end temperature
- VAC min. Vacuum holding time in minutes



VITA VM 9 ESTHETIC KIT for VITABLOCS for CEREC

Product line content

Quantity	Contents	Material
1		Sample Set of VITABLOCS 3D-MASTER
1	12 g	WINDOW WIN
1	12 g	NEUTRAL NT
2	12 g	ENAMEL ENL, END
1	12 g	EFFECT PEARL EP1
2	12 g	EFFECT ENAMEL EE1, EE10
1	12 g	CORRECTIVE COR1
1	12 g	EFFECT OPAL EO2
2	12 g	EFFECT CHROMA EC1, EC4
1	12 g	MAMELON MM2
1	7 g	VITA SHADING PASTE glaze SP15
1	5 g	VITA AKZENT finishing agent
1		Working Instructions
1		Accessories

VITAVM®9 EFFECT ENAMEL – can be used for all enamel areas of the natural tooth – universally suitable translucent enamel effect material – to achieve a natural effect of depth	<input type="radio"/> <input checked="" type="radio"/>	EE1	whitish-translucent	
		EE10	blue	
VITAVM®9 EFFECT PEARL – only suitable for effects on the surface, not for layering in – perfectly suitable for bleached restorations	<input type="radio"/>	EP1	shade in pastel-yellow	
VITAVM®9 EFFECT OPAL – to create the opal effect in restorations of young and very translucent teeth	<input type="radio"/>	E02	opal, whitish	
VITAVM®9 EFFECT CHROMA – color-intensive modifier porcelains – to accentuate certain color areas of the tooth – to vary the lightness value in the neck, dentine and enamel areas	<input type="radio"/> <input checked="" type="radio"/>	EC1	white	
		EC4	tender lemon yellow	
VITAVM®9 MAMELON – highly fluorescent porcelain which is mainly used in the incisal area – for shade characterization between incisal edge and dentine	<input checked="" type="radio"/>	MM1	warm yellow-brown	
VITAVM®9 CORRECTIVE – with reduced firing temperature for corrections after glaze firing	<input type="radio"/>	COR1	neutral	

Dentist

Preparation instruments:	Intensiv SA
Retraction cord:	Ultradent
Cord packer:	Deppeler
Temporary adhesive:	CEREC LIQUID (VITA)
Contrast powder, propellant:	CEREC POWDER, CEREC PROPELLANT (VITA)
Contrast spray:	Powder Scan Spray (VITA)
Matrixes and wedges:	Hawe Dead Soft (KerrHawe)
Glycerine gel for try-in:	OXY-PREVENT (VITA)
Phosphoric acid etching gel:	ETCHANT GEL (VITA)
Ceramic etching gel:	CERAMICS ETCH (VITA)
Composite:	DUO CEMENT (VITA)
Adhesive system:	A.R.T. BOND (VITA)
Composite heater:	AdDent, (American Dental Systems; American Dental Supplies)
Flexible polishing discs:	Sof-Lex (3MEspe)
Polishing brushes:	Occlubrush (KerrHawe)
Diamond polishing paste:	Ultra II Keramik polishing paste (Shofu). KARAT, extraoral polishing paste (VITA)
Disposable applicators:	Microbrush
Cavity cleaning:	ICB Brushes (Ultradent)

Dental laboratory

CAM-base stone (stone for scanning) (Dentona)
Paste to check occlusion and contacts, Pasta rossa, 3 g (Anaxdent)
Texture marker, (Benzer Dental AG)
Smart Clip holding forceps (Hammacher)
Pick-up sticks, (Hager & Werken)

Furnace: VITA VACUMAT 6000 M (for all types of firing processes)

Materials for characterization / individualization of the shade

	Prod. No.
VITA VM 9 ESTHETIC KIT for VITABLOCS	BV9EKC
VITA INTERNO Set	BISET
VITA AKZENT Plus SPRAY KIT	BAPKS
VITA AKZENT Plus POWDER KIT	BAPK
VITA AKZENT Plus PASTE KIT	BAPKP
VITA SIMULATE Preparation Material Set	ESPKIT
VITABLOCS Guide 3D-MASTER	B362
VITA FIRING PASTE	EFP12V1



VITABLOCS® single-unit packs

VITABLOCS® Mark II

Fine-particle, monochromatic feldspar ceramic blocks with the abrasion characteristics of natural tooth enamel, clinically proven a million times over since 1990.



VITABLOCS® TriLuxe forte

Fine-structure feldspar ceramic blocks with different degrees of chroma (neck, dentine, enamel).



VITABLOCS® TriLuxe forte

Fine-structure feldspar ceramic blocks with different degrees of chroma with the color transition from the enamel to the neck layer even more finely nuanced. At the same time, greater emphasis is given to the chroma in the neck area.



VITABLOCS® RealLife

Fine-structure feldspar ceramic blocks with three-dimensional structure corresponding to the structure of natural teeth with curved gradation of shade from the dentine to the incisal edge; especially for highly esthetic anterior restorations.



Materials for individualization of the shade

VITAVM®9 ESTHETIC KIT for VITABLOCS®

Assortment containing a selection of VITA VM 9 materials which are perfectly suitable for individualizing restorations made of VITABLOCS.

Prod. No. BV9EKC



VITA AKZENT® Plus PASTE KIT

Assortment including 19 ready-to-use, fine-grained stain pastes for characterizing the shade of restorations made of VITABLOCS in particular in dentist practices.

Prod. No. BAPKP



VITA AKZENT® Plus POWDER KIT

Assortment including 19 ceramic stain powders for characterizing restoration made of VITABLOCS. The stains have good stability characteristics as well as shade stability and can be mixed with one another.

Prod. No. BAPK



VITA AKZENT® Plus SPRAY KIT

Assortment containing 5 BODY SPRAYS and one GLAZE SPRAY. Especially suited for staining large surfaces, especially for monolithic restorations.

Prod. No. BAPKSV1



VITA AKZENT® Plus GLAZE SPRAY

Easy to apply, spray-on ceramic powder for simple and time-saving glazing of ceramic restorations. Ideal for glazing monolithic restorations made of VITABLOCS in the dental practice.

Prod. No. B5051075



VITA INTERNO Set

Assortment including 12 fine-particle ceramic materials and accessories for perfect reproduction of fine in-depth shade effects, such as subtle contrasts in the incisal area. The high fluorescence (identical to that of natural teeth) results in tremendous brilliance of the shades.

Prod. No. B1SET

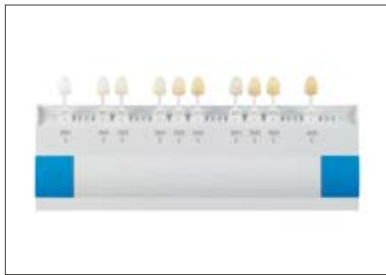


VITA FIRING PASTE

Blue-colored, ready-to-use fireproof paste for the fabrication of individual firing trays. The material enables safe fixation of objects on the firing tray. The paste is easy to remove again after completion of the firing cycle.

Prod. No. EFP12V1 Standard pack, 1 syringe cont. 12 g

Prod. No. EFP123V1 Large pack, 3 syringes cont. 12 g each



Shade taking

VITABLOCS® Guide 3D-MASTER

Shade guide with 10 shade sample teeth made of the original VITABLOCS Mark II ceramic enables simple, fast and accurate selection of the matching VITABLOCS block in VITA SYSTEM 3D-MASTER.

Prod. No. B362



VITA Linearguide 3D-MASTER / VITA Toothguide 3D-MASTER®

With the VITA Linearguide 3D-MASTER you can determine the correct tooth shade swiftly and accurately. The modern design and the linear arrangement enable quick determination of the suitable tooth shade. The VITA Linearguide 3D-MASTER is an alternative to the proven VITA Toothguide 3D-MASTER and features different (linear) arrangements of the shade sample teeth.

Prod. No. B363



VITA Easyshade® Advance 4.0

VITA Easyshade Advance 4.0 is a further refinement of VITA Easyshade Advance. This digital shade measurement device allows any user to determine the shade of natural teeth or to verify restorations in a matter of seconds, regardless of available lighting. The tooth shade measured is indicated in VITA classical A1–D4, VITA SYSTEM 3D-Master and in VITABLOC shades. Automatic activation, Bluetooth®, VDDS interface, bleaching mode and numerous other innovative features guarantee maximum precision for even greater reliability and comfort.

Prod. No. BAPKS



VITA SIMULATE Preparation Material Set

Assortment with light curing composites and accessories for the fabrication of artificial dies in 6 shades: 0M1S to simulate bleached dies and the shades 1M1S, 2M3S, 3M2S, 4M3S and 5M3S. They can be used to simulate the shade of the prepared tooth even if it exhibits major discoloration. The shade result of the restoration made of VITABLOCS can be verified already during the fabrication process and adjusted if required.

Prod. no. ESPKIT



Materials for the optical impression

VITA Powder Scan Spray

Bottle containing 75 ml of blue spray-on pigment suspension with mint flavor for direct application (tooth surface) and for indirect use (plaster die/plaster model) for the opto-electronic impression of CAD/CAM restorations.

Prod. No. ECSCAN75V1



VITA CEREC® Propellant

Bottle cont. 250 ml of CFC-free propellant for applying CEREC POWDER (Prod. No. ECPN) to the tooth substance with the spray head (Prod. No. ECS).
The application needle can be rotated by 360°.

Prod. No. ECPN/ECS



VITA CEREC® Powder

Bottle containing 12 g of white contrast powder to eliminate reflections on the surface of the tooth for the opto-electronic impression.

Prod. No. ECPO



VITA CEREC® Liquid

Bottle cont. 6 ml of liquid, which serves as temporary adhesive for CEREC POWDER. It can be completely removed with water.

Prod. No. ECL



Materials for the adhesive technique

VITA LUTING SET

Assortment with all materials for adhesive luting/bonding of restorations made of VITABLOCS.

Prod. No. FLSET



VITA DUO CEMENT KIT

Dual curing, two-component fine hybrid luting composite in one universal shade for VITA classical and VITA SYSTEM 3D-MASTER.

Contents: 2 syringes with 2.5 g base paste each, 2 syringes with 2.5 g catalyst paste each, accessories.

Prod. No. FCDCK



VITA A.R.T. BOND SET

Two-phase, light-curing dentine/enamel adhesive.

Contents: 1 bottle of 5 ml PRIMER A, 1 bottle of 5 ml PRIMER B, 1 bottle of 5 ml BOND, accessories

Prod. No. FCABS



VITA ETCHANT GEL KIT

35% orthophosphoric acid gel for etching tooth substance, dark blue colored, good stability characteristics

Contents: 2 syringes of 2.5 ml each, accessories

Prod. No. FCEGK



VITA CERAMICS ETCH (Nur für extraoralen Gebrauch!)

Hydrofluoric acid gel, 5%, for etching silicate ceramics, red colored. Syringe of 3 ml or bottle cont. 6 ml.

Prod. No. FCE3 (syringe)

Prod. No. FCE6 (bottle)



VITASIL

Single-component silane bonding agent, syringe of 3 ml

Prod. No. FVS3



VITA OXY-PREVENT

Neutral-colored glycerine gel to prevent the formation of an oxygen inhibition layer.

It is also suitable for use as a try-in paste.

Syringe of 3 ml

Prod. No. FOP3



Polishing

VITA Karat diamond polishing set*

Assortment cont. 5 g diamond polishing paste, 20 diamond felt wheels, Ø 12 mm and one nickel-plated mandrel.

Prod. No. B068

*For indirect use only



VITABLOCS® storage boxes

VITABLOCS®-Box

Metal-reinforced box made of high-quality acrylic for storing up to 12 VITABLOCS bars.









Prod. No. A9S16 with insert for VITABLOCS









Storage box


Storage box made of high-quality acrylic for storing up to 36 VITABLOCS bars.

Prod. No. ZMBCER1

<p>VITAVM®9 CORRECTIVE</p> <p>– materials with reduced firing temperature (800°C) for corrections after glaze firing</p> <p>– in three nuances for neck, dentine and enamel areas</p>		<p>COR1</p> <p>COR2</p> <p>COR3</p>	<p>neutral</p> <p>sand</p> <p>ochre</p>	<p>neutral</p> <p>beige</p> <p>brown</p>	
<p>VITA AKZENT Plus</p> <p>EFFECT STAINS</p> <p>POWDER 3 g or PASTE 4g</p> <p>– masking stains that offer superior coverage</p> <p>– for natural surface effects</p>		<p>ES01</p> <p>ES02</p> <p>ES03</p> <p>ES04</p> <p>ES05</p> <p>ES06</p> <p>ES07</p> <p>ES08</p> <p>ES09</p> <p>ES10</p> <p>ES11</p> <p>ES12</p> <p>ES13</p> <p>ES14</p>		<p>white</p> <p>cream</p> <p>lemon-yellow</p> <p>sunshine yellow</p> <p>orange</p> <p>russet</p> <p>khaki</p> <p>pink</p> <p>dark red</p> <p>lilac</p> <p>blue</p> <p>grey-blue</p> <p>grey</p> <p>black</p>	
<p>VITA AKZENT Plus</p> <p>BODY STAINS</p> <p>POWDER, 3 g or PASTE, 4 g or SPRAY, 75 ml</p> <p>– translucent glazing stains</p> <p>– for modifying the shade effect of the base material</p>		<p>BS01</p> <p>BS02</p> <p>BS03</p> <p>BS04</p> <p>BS05</p>		<p>yellow</p> <p>yellow-brown</p> <p>orange</p> <p>olive-grey</p> <p>grey-brown</p>	
<p>VITA SIMULATE Preparation Material</p> <p>– Light-curing composite for the fabrication of artificial dies to simulate the shade of the prepared tooth.</p>		<p>0M1S</p> <p>1M1S</p> <p>2M3S</p> <p>3M2S</p> <p>4M3S</p> <p>5M3S</p>			

The following products require hazard identification:		
<p>VITA CERAMICS ETCH (hydrofluoric acid ceramic etching gel)</p>	<p>Caustic / Toxic</p> <p>For indirect use only! Contains hydrofluoric acid. Toxic if swallowed. Fatal in contact with skin. Causes severe skin burns and damage to eyes. Harmful by inhalation. Wear protective gloves/protective clothing/safety goggles. Keep locked up. If swallowed, call Toxicological Information Center immediately and provide safety data sheet. In case of contact with clothing/skin, remove contaminated clothing immediately and rinse with copious amount of water. Specific measures, see safety data sheet. In case of contact with eyes, rinse with water for a few minutes and consult a doctor/Toxicological Information Center. This material and its container must be disposed of as hazardous waste.</p>	
<p>VITA ETCHANT GEL (Phosphoric acid etching gel)</p>	<p>Caustic</p> <p>Causes severe skin burns and damage to eyes. Contains phosphoric acid. When working with the product, do not eat and drink. Do not inhale gas/fume/vapor/aerosol. In case of contact with eyes, rinse thoroughly with water and consult a doctor. When working with the product, wear suitable safety goggles / face protection, protective gloves, and protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). This material and its container must be disposed of as hazardous waste.</p>	
<p>VITASIL (Silane bonding agent)</p>	<p>Highly flammable</p> <p>Highly flammable liquid and vapor. Store container well sealed at an adequately ventilated place. Keep away from ignition sources. - No smoking. Do not empty into drains. This material and its container must be disposed of as hazardous waste.</p>	

<p>VITA Firing Paste</p>	<p>Health hazard</p> <p>Classification of the fiber according to EU Directive 97/96/EC: Carc. Cat 2</p> <p>May cause cancer by inhalation. Avoid the release of dust; do not blow with compressed air. Use local extraction unit or particle filtering half mask during mechanical processing of the hardened paste. Irritates the skin. Avoid contact with skin and eyes. When working with the product, do not eat, drink and smoke. Keep out of children's reach.</p>	
<p>VITA CEREC Propellant</p>	<p>Extremely flammable</p> <p>Pressurized container. Protect from direct sunlight and temperatures above 50 °C. Do not pierce or burn even after use. Do not spray into flames or onto glowing objects. Keep away from sources of ignition. No smoking. Possible formation of explosive mixture if adequate ventilation is not ensured. Keep container well sealed and store at an adequately ventilated place. Keep out of children's reach. Store container well sealed at an adequately ventilated place.</p>	
<p>VITA AKZENT Plus BODY SPRAY / GLAZE SPRAY</p>	<p>Extremely flammable aerosol</p> <p>Spray-on ceramic glaze material. For dental applications only. Not for direct use. Shake well before use. Pressurized container: do not puncture or burn. Protect from direct sunlight and temperatures above 50 C°. Do not pierce or burn even after use. Do not spray into flames or onto glowing objects. Keep away from ignition sources. - No smoking. Keep away from heat, sparks, open flame or hot surfaces.</p>	

Safety clothing	When working with the product, wear suitable safety goggles, gloves and safety clothing. Work under a suitable extraction unit.	
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The respective safety data sheets can be downloaded at www.vita-zahnfabrik.com or requested by fax at (+49) 7761-562-233.

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Crowns made of VITABLOCS®

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VITA printed materials

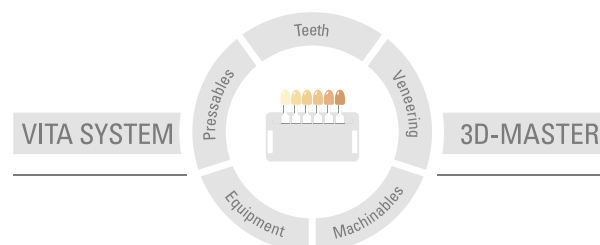
VITABLOCS®	Prod. No.
VITABLOCS (Concept brochure)	1454
VITABLOCS (Product Information)	1675
VITABLOCS RealLife (Product Information)	1726
VITABLOCS RealLife (Working Instructions)	1724
VITABLOCS TriLux forte for Rapid Layer Technology (Product Information)	1727
VITA Rapid Layer Technology (Working Instructions)	1740
Veneers made of VITABLOCS (Working Instructions)	1298
VITA products for CEREC/ inLab (Compendium, A6 format)	994
Machinable Materials (Overview brochure)	1505
VITA Machinable Materials (Poster)	1614

Individualization of ceramic and accessories	Prod. No.
VITA AKZENT Plus (Working Instructions)	1925
VITA AKZENT Plus (Info card)	1702
VITA AKZENT Plus (Product Information)	1926
VITA AKZENT Plus (Order form pad)	1973
VITA INTERNO (Working Instructions)	770
VITA VM 9 (Working Instructions)	1190
VITA SIMULATE Preparation Material (Product sheet)	1462
VITA SIMULATE Preparation Material (Working Instructions)	1461
VITA Powder Scan Spray (Product Information)	1906

Clinical aspects	Prod. No.
Clinical Aspects of All-Ceramics (Preparation/Cementation guideline)	1696
VITA LUTING SET (Brochure)	897

Equipment	Prod. No.
VITA New Generation (Brochure)	1615
VITA Easyshade Advance 4.0 (Product Information)	1977

With the unique VITA SYSTEM 3D-MASTER, all natural tooth shades can be systematically determined and perfectly reproduced.



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