

ceraMotion®
LiSi



Instructions for use

High-strength lithium disilicate press ceramics.

Aesthetic results – simply and quickly.

System overview ceraMotion® LiSi.

ceraMotion® One Touch pastes

ceraMotion® press invest investment material



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Product information.

Materials.

ceraMotion® LiSi press ceramic is a glass ceramic strengthened with lithium disilicate. It is designed exclusively for dental use and should only be processed by qualified specialist personnel.

The 3 g – ceraMotion® LiSi press ingots are available in 23 shades:

- Low Translucency (LT)
- High Translucency (HT): similar to tooth enamel, transparent, slightly shaded
- 11 LT shades are also available for the Vita 3D-Master®* shade scale

They are offered for the following processing techniques:

- Staining technique
- Cut-back technique
- Layering technique

*Vita 3D-Master® is a registered trademark of VITA Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany.

Indications.

- Veneers
- Inlays
- Onlays
- Partial crowns
- Anterior and posterior tooth crowns
- Three-unit bridges, anterior
- Three-unit bridges in the area of the premolars, whereby the second premolar acts as the terminal abutment

Contraindications and limitations of use.

- Patients with bruxism and parafunctions
- Restorations for which the minimum wall thicknesses or the connector cross-sections cannot be upheld
- Known allergies to one of the material components
- Simultaneous application with non-suitable materials from other manufacturers

ceraMotion® LiSi is optimally coordinated with ceraMotion® One Touch finishing pastes and ceraMotion® Zr veneering ceramics.

Product overview.

For standard use in nearly all restorations, 10 LT press ingots are available in the shades A1, A2, A3, A3,5, A4, B2, B3, C2, C3, D3.

All shades from the Vita Classical® shade guide can be reproduced together with the stains, ceraMotion® Zr veneering ceramics, Universal stains and One Touch finishing pastes.

Two highly-transparent HT ingots (HT 1 for lighter and HT 2 for medium shades) are particularly suitable for incisor veneers and inlays.

Tooth shade	A1	A2	A3	A3.5	A4	B1	B2	B3	B4	C1	C2	C3	C4	D2	D3	D4
Designation LT LiSi ingot	LT A1	LT A2	LT A3	LT A3.5	LT A4	LT 11	LT B2	LT B3	LT B3	LT 21	LT C2	LT C3	LT C3	LT 31	LT D3	LT D3
Designation HT LiSi ingot	HT 1	HT 1	HT 2	HT 2		HT 1	HT 1	HT 2		HT 1	HT 1	HT 2		HT 1	HT 2	
One Touch designation for staining technique						Paste 2D B			Paste 2D B	Paste 2D C			Paste 2D C	Paste 2D White		Paste 2D B

A further 11 LT shades are available for the reproduction of the Vita 3D-Master® shade guide. By using One Touch finishing pastes, shades that are less frequently used can be reproduced. More information on this is available on the homepage.

Tooth shade	0M2	1M1	1M2	2M1	2M2	2M3	3M1	3M2	3M3	4M1	4M2
Designation LiSi ingot	LT 02	LT 11	LT 12	LT 21	LT 22	LT 23	LT 31	LT 32	LT 33	LT 41	LT 42

*Vita Classical® and Vita 3D-Master® are registered trademarks of VITA Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany.

Preparation.

In preparation for using ceramics, the tooth structure should be reduced to a reproduction of the tooth shape that is smaller and less detailed. Sharp edges and interior angles should be avoided.

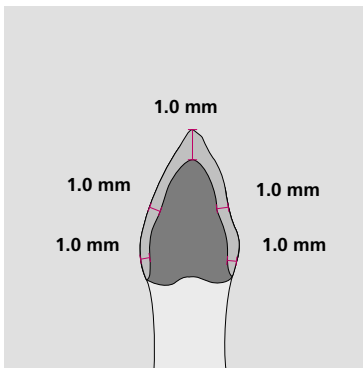


Fig. 1: Preparation instructions, crown

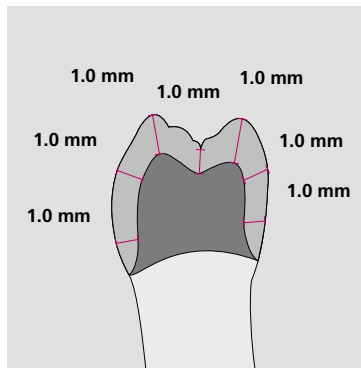


Fig. 2: Preparation instructions, crown

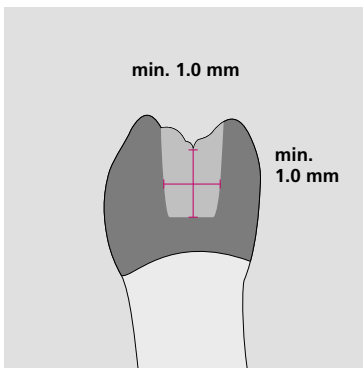


Fig. 3: Preparation instructions, inlay/onlay

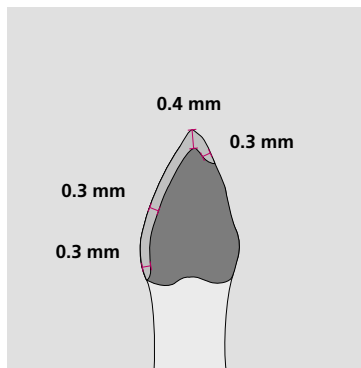


Fig. 4: Preparation instructions, veneer (thin)

Preparation and minimum wall thicknesses.

The design of the restoration must be adapted to the static and dynamic occlusal relationship. Please refer to the table for minimum wall thicknesses.

	Veneer		Inlay	Onlay	Crown		Three-unit bridge	
					anterior	posterior	Anterior area	Posterior area*
Staining technique	cervical	0.3 – 0.6	1.0	1.0	1.0	1.0	1.2	1.5
	incisal / occlusal	0.4 – 0.7	1.0	1.0	1.0	1.0	1.5	1.5
Cut-back technique	cervical	0.6	–	1.5	1.0	1.0	1.2	1.5
	incisal / occlusal	0.4	–	0.8	0.5	0.5	0.8	0.8
Layering technique*	cervical	–	–	–	0.5	0.5	0.6	0.8
	incisal / occlusal	–	–	–	0.5	0.5	0.8	0.8
Cross-section connector (mm ²)		–	–	–	–	–	16**	16**

Please observe:

- The given minimum wall thicknesses of the different restorations.
- **The overall wall thickness of the restoration must always consist of at least 50% ceraMotion® LiSi.**
- **Bridge in posterior area limited to second premolar.**
- ****Height of connector must always be the same or more than its width**

Model preparation.

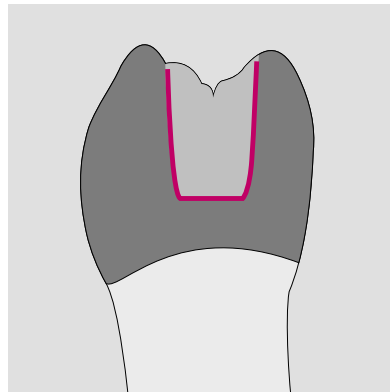
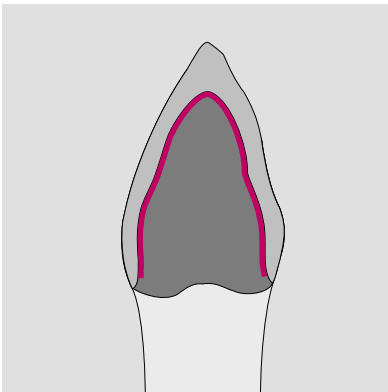
The master models are manufactured analogous to the models for the manufacture of metal ceramic works and inlays. The preparation margin is established. A layer of sealer is recommended to harden the surface.

Crowns and veneers.

For a recommended cement gap of approx. 20 µm, the application of a suitable die spacer up to 1 mm apical to the preparation margin is recommended.

Inlays and onlays.

The die spacer is applied up to slightly before the preparation margin for the cement gap (30 µm).



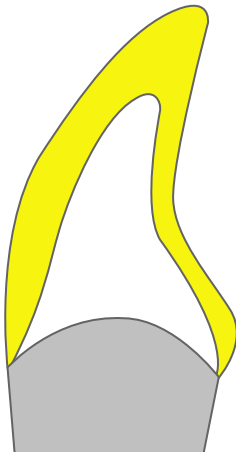
! Note:

Die spacer in a tooth-colored tone simplifies the process of individual characterization in the manufacture of elements made of lithium disilicate.

Model types.

Lithium-disilicate framework material.

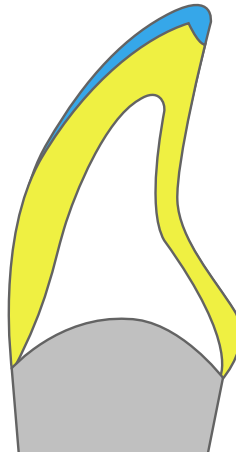
Staining technique.



Products:

- ceraMotion® One Touch
- ceraMotion® Stains Universal
- ceraMotion® Paste Glaze

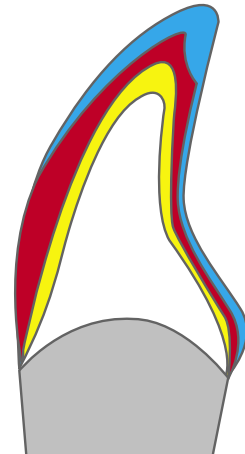
Cut-back technique.



Products:

- ceraMotion® Zr – Incisal
- ceraMotion® One Touch
- ceraMotion® Stains Universal
- ceraMotion® Paste Glaze

Layering technique.



Products:

- ceraMotion® Zr – Dentin + Incisal
- ceraMotion® Stains Universal

Weighing of the sprued model.

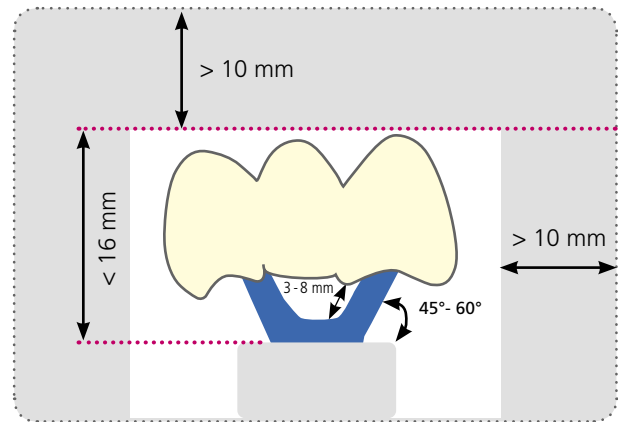
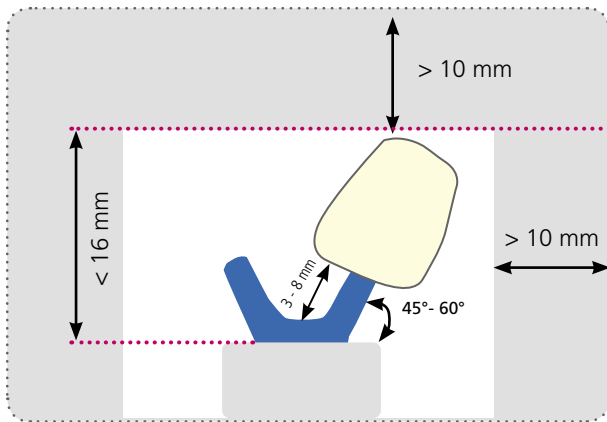
max. 0.75 g = 1 ingot

0.75 to 1.6 g = 2 ingots

Investment ring system and sprues.

The press sprue diameter of the investment ring base must correspond to the diameter of the press ingots and the press plunger (≥ 13.0 mm).

Attaching sprues.



Attaching sprues.

Investment ring system	100 g and 200 g
Diameter pressing sprue	ø 2.5 mm – 3 mm
Length pressing sprue	3 – 8 mm, attach sprues to objects at the same height
Attaching sprues on the waxed-up object	at the most voluminous points, veneers -> incisal Inlay and partial crowns -> interproximal
Angle of sprue to the waxed-up object	in flow direction of the pressing
Angle of sprue to the investment ring base	45 – 60 °
Distance between press objects	min. 3 mm
Minimum thickness between object and investment ring	10 mm



Investing.

We recommend the investment material ceraMotion® press invest.
Please refer to the Instructions for use for more detailed information.

Wet the ring base and the ring leveller with a thin layer of Vaseline.

If using a wax surface reducing agent, remove this from the press object with oil-free compressed air.



a) Pour investment material into the ring with slight vibration.



b) Position ring leveller after sufficient filling.



c) Once the investment material has set, remove the ring.



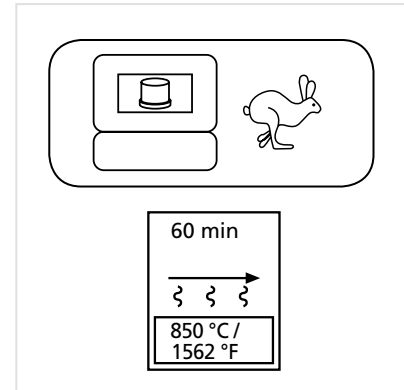
d) Using a plaster knife, smooth out any unevenness.

Pre-heating the ring.

The ceraMotion® press invest investment material guarantees as low a reaction as possible with the ceraMotion® LiSi ceramic. This results in:

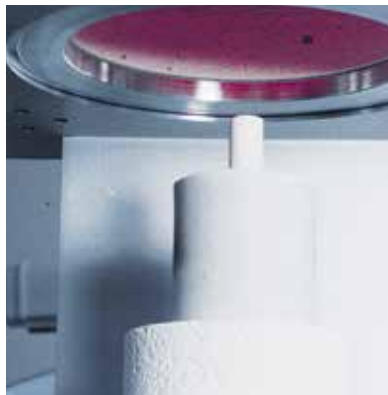
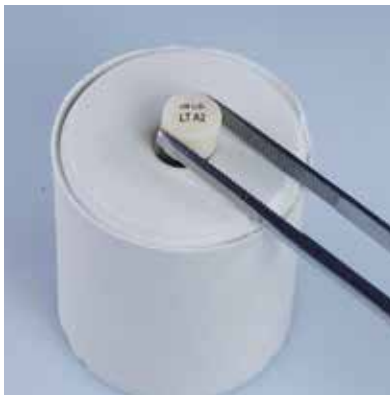
- smooth and homogeneous surfaces
- exact marking of details
- highest accuracy of fit

Observe the manufacturer's preheating parameters for the investment material. Place the investment ring with the pressing sprue in a low position in the furnace and ensure that the heat is distributed evenly.



Pressing.

- Choose a suitable press program and preheat the press furnace to the start temperature.
- Ensure that the investment ring does not cool down too much when moving to next furnace.
- Quickly lay the ceramic ingot in the pressing sprue with the impression facing upwards.
- Insert a cold press plunger and place the investment ring in the press furnace.
- Start the press program.
- After the program has finished, remove the investment ring and allow it to cool down to room temperature.
- Increase the temperature by 5°C for very delicate parts.



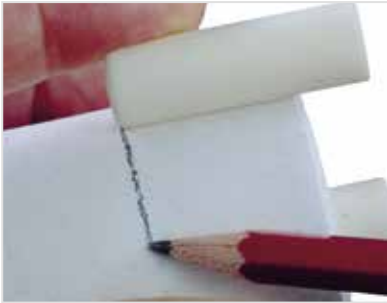
! *Caution!*

For a 100 g investment ring
use only one ingot!

Investment ring	Start temp. (°C)	Speed of temperature increase (°C/min)	Final temperature (°C)	Holding time (min)	Max. pressing time	Pressure	Vacuum
100 g	800	60	900	20:00	2:00	Maximum	Yes
200 g	800	60	905	20:00	2:00	Maximum	Yes

Parameters are guide values and must be adjusted if necessary.

Divesting.



a) After cooling, mark the length of the press plunger on the investment ring.



b) Using a separating disc, create a predefined breaking point all around.



c) With a plaster knife, break at the incision.



d) Separated investment ring at transition point from plunger to pressing cone.



e) Rough divesting with Al_2O_3 at max. 4 bar pressure. Careful, precise blasting with glass beads (medium grain size) at max. 2 bar pressure.

! *Caution!*

Blast edge areas
very carefully.

Cutting off and preparing.

Cutting off.

To prevent the ceramic from overheating, it is recommended that work is carried out at a low pressing pressure and water is used to cool if necessary. Cut off the press sprue with a thin diamond disc without pressure. Process the stems of the press sprues with suitable abrasives.

! Important:

When processing press ceramics, ensure always that the object does not become overheated.

Preparing.

Carefully fit the object onto the stump. Check once again with control spray or control paste; repeat procedure if necessary. Process using abrasives suitable for ceramics.

Before further processing (glazing/staining/layering), blast surface at 1 bar pressure with Al_2O_3 medium grain size. Then, steam clean well!



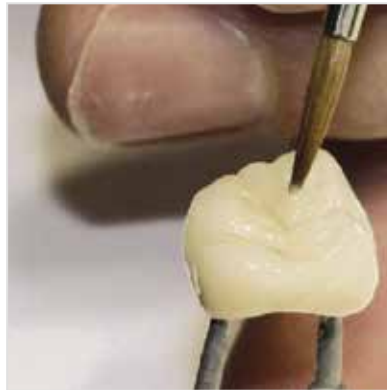
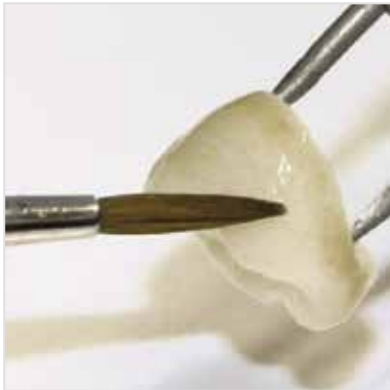
Cut off sprue.



Grind framework.

Staining technique.

To achieve a glazed surface and/or shade characterizations, ceraMotion® Zr glazes (Glaze GL and Paste Glaze PGL), Stains Universal as well as the One Touch 2D and 3D pastes can be used.



*Please
observe:*

Position the stained element
on a rounded ceramic pin,
then on the firing tray.
If refractory material is used,
avoid any form of contact between
this and staining/layering products.

Glaze firing / stain firing.

Please observe the table below as regards the firing parameters of the glaze material*. Please use the glazing firing program for firing ceraMotion® Stains Universal.

	Start temp. (°C)	Drying time (min)	Speed of temperature increase (°C/min)	Vacuum start (°C)	Vacuum end (°C)	End temperature (°C)	Holding time (min)
Glaze firing	500	6:00	55	500	750	750	1:00 (without vacuum)
First firing Zr Paste Glaze* Stains 3D/2D/Glaze	450	8:00	55	450	730	730	1:00 (without vacuum)
Second firing Correction Zr Paste Glaze* 3D/2D	450	8:00	55	450	720	720	1:00 (without vacuum)

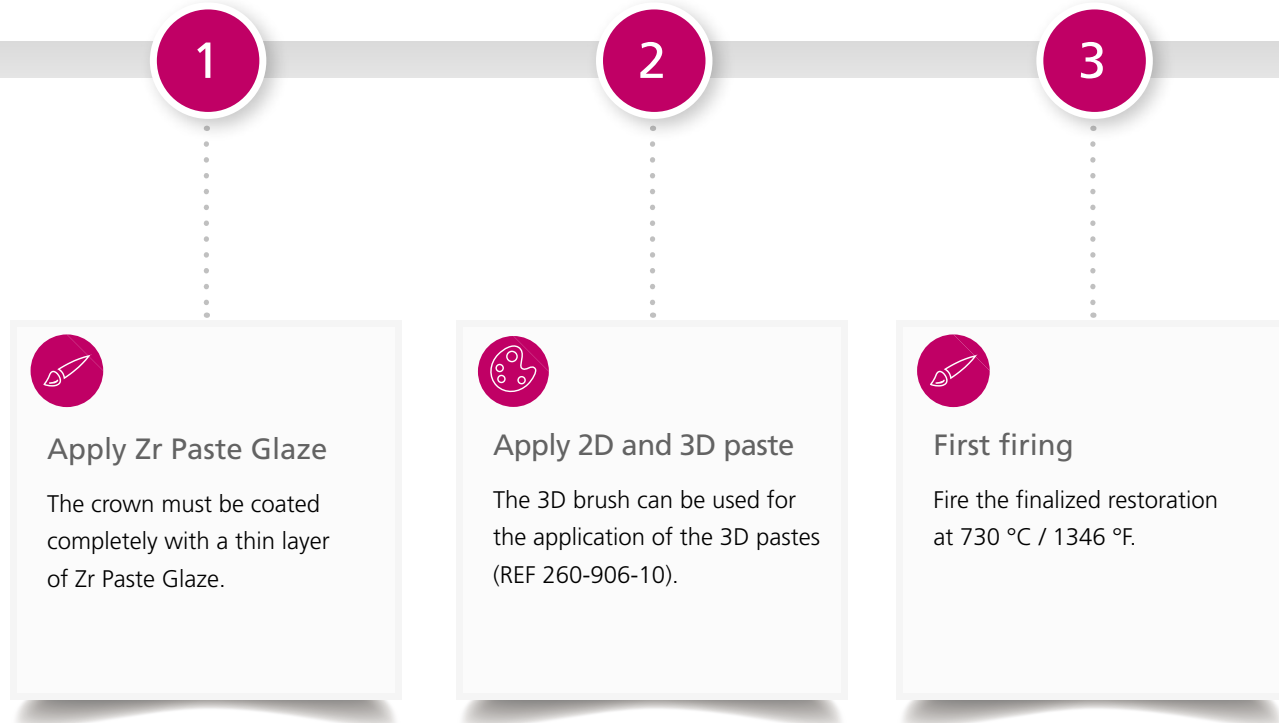
Parameters are guide values and must be adjusted if necessary.

*Paste or powder

ceraMotion® One Touch.



ceraMotion® One Touch are specially developed 2D and 3D pastes for the aesthetic finalization and characterization of all-ceramic monolithic restorations made of lithium disilicate and zirconium oxide.





If required

4

*Pastes
2D & 3D...*



Corrections (optional)

- 2D pastes
- 3D pastes
- Zr Paste Glaze
- Firing temperature
720 °C / 1328 °F



Cut-back technique.

The restoration is built up fully anatomically and then reduced minimally. The restoration is finished with ceraMotion® Zr incisal masses or, in the case of minimal cut-back, with One Touch 2D and 3D pastes.



	Start temp. (°C)	Drying time (min)	Speed of temperature increase (°C/min)	Vacuum start (°C)	Vacuum end (°C)	Final temperature (°C)	Holding time (min)
Incisor firing	500	6:00	55	500	760	760	1 (with vacuum)
First firing Zr Paste Glaze Stains 3D/2D/Glaze	450	8:00	55	450	730	730	1:00 (without vacuum)
Second firing Correction Zr Paste Glaze 3D/2D	450	8:00	55	450	720	720	1:00 (without vacuum)

Complete or partial layering with ceraMotion® Zr.

It is possible to complete glaze firing without using glazing materials if the restoration is given a complete layer of ceraMotion® Zr veneering ceramic. It is necessary to use a glaze to give the restoration a uniform shiny appearance if it has only been partially layered.



	Start temp. (°C)	Drying time (min)	Speed of temperature increase (°C/min)	Vacuum start (°C)	Vacuum end (°C)	Final temperature (°C)	Holding time (min)
Connecting firing	500	6:00	55	500	760	760	1:00 (with vacuum)
Dentin/ incisor firing	500	6:00	55	500	760	760	1:00 (with vacuum)
Glaze firing with glazing materials*	500	6:00	55	500	750	750	1:00 (without vacuum)

*See ceraMotion® Zr Instructions for use

ceraMotion® Zr.



Veneering ceramics for zirconium oxide and lithium-disilicate frameworks.

- Safety due to high bending strength: 115 MPa.
- Free of feldspar – therefore no fluctuations in product quality.
Low firing temperature of 750 °C /760 °C (1382/1400 °F).
- High shade vitality even with multiple firings.
- Homogeneous and bright ceramics already after the first dentin firing.
- Highest bonding strength with zirconium oxide frameworks and lithium disilicate frameworks thanks to ideal CTE setting.
- Short firing cycle due to low transformation temperature and quick cooling.
- Natural aesthetics due to special masses for opalescence, fluorescence and translucency.



Technical data.



Information on material	
Chemical designation	Silicate glass ceramics
Chemical composition	Main components of the ceramic: SiO ₂ , Al ₂ O ₃ , Li ₂ O, P ₂ O ₅ , K ₂ O, ZnO, ZrO ₂

Classification in accordance with DIN EN ISO 6872: Type II Class 3	
CTE	Press: $10.25 \times 10^{-6} \text{ K}^{-1}$ (25 – 500 °C / 77 – 932 °F)
Chemical solubility	25 µm/cm ²
Bending strength*	450 MPa

*3-point bending test

LT (Low translucency)		
255-001-05	ceraMotion® LiSi	LT A1
255-002-05	ceraMotion® LiSi	LT A2
255-003-05	ceraMotion® LiSi	LT A3
255-035-05	ceraMotion® LiSi	LT A3.5
255-004-05	ceraMotion® LiSi	LT A4
255-012-05	ceraMotion® LiSi	LT B2
255-013-05	ceraMotion® LiSi	LT B3
255-022-05	ceraMotion® LiSi	LT C2
255-023-05	ceraMotion® LiSi	LT C3
255-033-05	ceraMotion® LiSi	LT D3






275-010-00	ceraMotion® press invest	2.5 kg 25 x 100 g
275-015-00	ceraMotion® press invest Mixing liquid	1 l
260-365-13	Press plunger Ø 13 mm, for single use	20 pieces

HT (High translucency)		
255-041-05	ceraMotion® LiSi	HT 1
255-042-05	ceraMotion® LiSi	HT 2

LT (for Vita 3D-Master®*)			corresponds to
255-102-05	ceraMotion® LiSi	LT02	OM2
255-111-05	ceraMotion® LiSi	LT11	1M1
255-112-05	ceraMotion® LiSi	LT12	1M2
255-121-05	ceraMotion® LiSi	LT21	2M1
255-122-05	ceraMotion® LiSi	LT22	2M2
255-123-05	ceraMotion® LiSi	LT23	2M3
255-131-05	ceraMotion® LiSi	LT31	3M1
255-132-05	ceraMotion® LiSi	LT32	3M2
255-133-05	ceraMotion® LiSi	LT33	3M3
255-141-05	ceraMotion® LiSi	LT41	4M1
255-142-05	ceraMotion® LiSi	LT42	4M2

*Vita Classical® and Vita 3D-Master® are registered trademarks of VITA Zahnfabrik H. Rauter GmbH & Co. KG, Bad Säckingen, Germany.

Meaning of the listed symbols.

-  Please observe the processing instructions
-  Batch number
-  Storable until (Date: Year – Month)
-   0483
- RxOnly Sale and use only to/by specialist personnel

Warning notices.

Only for dental use by a qualified expert. The user must ensure that the intended use corresponds to the manufacturer's specifications.

Measures for protection of equipment and products.

Preheating ovens and press ovens should be maintained, cleaned, and calibrated regularly. When investing, divesting / grinding the objects or blasting the objects, wear safety glasses and breathing protection and use a suction unit. There is a risk of combustion when firing and pressing in the furnace. Therefore, wear gloves and use tongs.

General information.

To protect the product against contamination, choose a suitable work area and use clean instruments and tools. In the processing of the medical products, products in question should be stored between 10 °C and 40 °C (50 °F and 104 °F). These non-toxic products can be disposed of without an issue if the statutory provisions are upheld.

Dentaurum Group

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DENTAURUM
QUALITY
WORLDWIDE
UNIQUE



Date of information: 11/18
Subject to modifications



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