

Bonding to acrylic denture teeth

a) Materials and methods

To test the bonding of the varnishes, six maxillary anterior teeth (VITAPAN EXCELL) were masked on one side with protective film. The portion of the teeth (half) that were not masked, were sandblasted with 50 µm corundum abrasive and cleaned with compressed air. In each case, either VITA AKZENT LC CHROMA STAINS red-brown or OPTIGLAZE color A (GC) was then applied to the roughened surface of three teeth with a brush. In the case of VITA AKZENT LC CHROMA STAINS red-brown, the varnish was polymerized for 90 seconds in the Hilite Power polymerization device (Kulzer), and in the case of OPTIGLAZE color A (GC), the varnish was polymerized for 60 seconds in the Speed Labolight polymerization device (Hager & Werken), according to the processing instructions. Then the protective film was carefully removed from the non-varnished side of the teeth. The varnished teeth were photographed and then were subjected to thermal cycling in water between 5 C and 55 C for 5000 cycles. Then the specimens were documented again using photographs.

b) Source

Internal study, VITA R&D, report 0628/19

c) Result

The photographs each show an example of the view of a tooth varnished on one side before and after the thermal load.



d) Conclusion

The tooth surfaces coated with VITA AKZENT LC CHROMA STAINS red-brown appear smooth, crack-free and lustrous after the thermal load. The comparative test specimens show cracks and chipping of the coated surfaces. VITA AKZENT LC shows good bonding to acrylic denture teeth.

Stability

a) Materials and methods

VITA AKZENT LC EFFECT STAINS white was applied to a glass plate. Then the glass plate was tilted to check the stability of the stain. The glass plate was held in the tilted position (about 40°) for 60 seconds. The stain application was documented using photographs before the plate was tilted and after 60 seconds in the tilted position.

b) Source

Internal study, VITA PM, report 0478/21, 10/21, Mr. Kimmich

c) Result

The photographs show VITA AKZENT LC EFFECT STAINS white on the glass plate after the application and after 60 seconds in the tilted position.



1. Application of the stain on a glass plate



2. Testing of stability by tilting the plate

d) Conclusion

The VITA AKZENT LC EFFECT STAINS show very good stability in the test. The applied stain did not run, but remained stable in exactly the same location where it was applied on the glass plate when the surface was tilted.

Abrasion resistance

a) Materials and methods

To prepare the test specimens for testing the abrasion resistance of VITA AKZENT LC GLAZE, the surfaces of two posterior crowns made of VITA ENAMIC were etched with VITA ADIVA CERA-ETCH for 60 seconds, rinsed with water, cleaned with steam, blown dry with compressed air and silanized with VITA ADIVA C-Prime. The crowns prepared in this way were stained in the fissures with VITA AKZENT LC EFFECT STAINS and stained on the cusps with VITA AKZENT EFFECT STAINS blue. The stains were fixed with a hand lamp for light curing. VITA AKZENT LC GLAZE was then applied to the entire surface with a disposable microbrush applicator, intermediate polymerization was carried out with the hand lamp and the crowns were polymerized in the Speed Labolight (Hager & Werken) for four minutes. Afterwards, the crowns were polished with a soft goat hair brush and polishing paste, and a dry cotton buff was used to achieve a high gloss. The ENAMIC crown prepared in this way was fixed on a holder together with a reference crown and subjected to simulated toothbrush abrasion in a machine for 20 hours. (toothpaste: Sensodyne Classic; toothbrush: Fuchs medium; frequency of brush strokes: 136/min; 26.4 g contact weight). The crowns were documented using photographs before and after the abrasion test.

b) Source

Internal study, VITA R&D, report 0083/21

c) Result

Stained VITA ENAMIC crown
prior to wear test



Stained VITA ENAMIC crown
after wear test



Simulated wear (20 h)

d) Conclusion

The gloss of the stained VITA ENAMIC crown was perfectly preserved even after 20 hours of simulated wear. Coating with VITA AKZENT GLAZE provides efficient protection of the characterized shade applied underneath.

Shade stability

a) Materials and methods

To test the shade stability of VITA AKZENT LC GLAZE, the surfaces of 25 rectangular VITA ENAMIC test specimens were sandblasted with 50 µm corundum, cleaned with compressed air and silanized with VITA ADIVA C-Prime. VITA AKZENT LC GLAZE (sample AP033) was applied to the surfaces prepared in this way and cured for 90 seconds in the HiLite Power device (Kulzer).

For comparison, another 25 test specimens made of VITA ENAMIC were also sandblasted with 50 µm corundum and cleaned with compressed air. Ceramic Primer II (GC) was then applied to the surfaces and blown dry with compressed air. The surfaces prepared in this way were coated with OPTIGLAZE color clear (GC) and the coating polymerized for 60 seconds in the Speed Labolight device (Hager & Werken). The coated surfaces were measured with an i7 spectrophotometer (X-Rite).

Five test specimens of each series were immersed in different liquid media at 37 °C. As a control group, five test specimens each were stored in dry condition at 37 °C. At intervals of four weeks each, the test specimens were cleaned and the coated surfaces were measured using a colorimeter.

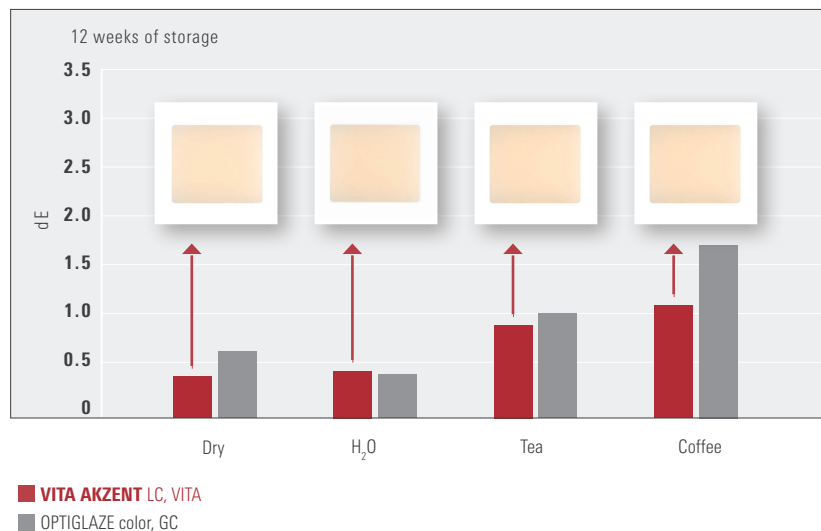
b) Source

Internal study, VITA R&D, report 0559/19

c) Result

The following diagram shows the dE values of the test specimens after 12 weeks of storage in the specified media.

Discoloration resistance test



d) Conclusion

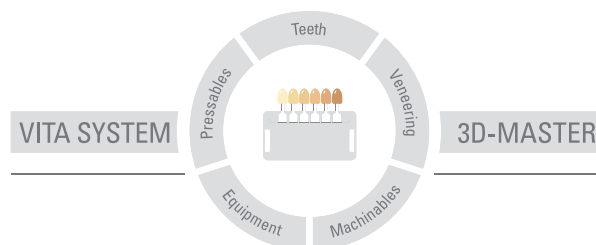
After 12 weeks of storage in water, tea and coffee, the coated surfaces of both test specimen series exhibit dE values of < 2 and show very good color stability in these media.

You can find more information on VITA AKZENT LC at:
www.vita-zahnfabrik.com/akzentlc

References

1. Internal studies, VITA R&D:

VITA Zahnfabrik H. Rauter GmbH & Co. KG
Research and Development Division
Spitalgasse 3, 79713 Bad Säckingen, Germany
Dr. Berit Gödiker, project manager for VITA R&D, VITA Zahnfabrik, Bad Säckingen



Please note: Our products must be used in accordance with the instructions for use. We accept no liability for any damage resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers that are not compatible or not authorized for use with our product and this results in damage. The VITA Modulbox is not necessarily a component of the product. Date of issue of this information: 2021-12

After the publication of this information for use any previous versions become obsolete. The current version can be found at www.vita-zahnfabrik.com

VITA Zahnfabrik has been certified and the following products bear the CE mark:

CE 0124

VITA AKZENT® LC, VITA ENAMIC®, VITAPAN EXCELL®

The products/systems of other manufacturers mentioned in this document are registered trademarks of the respective manufacturers.

Rx only (only for professional use) **MD**

VITA

VITA Zahnfabrik H. Rauter GmbH & Co. KG
Spitalgasse 3 · D-79713 Bad Säckingen · Germany
Tel. +49(0)7761/562-0 · Fax +49(0)7761/562-299
Hotline: Tel. +49(0)7761/562-222 · Fax +49(0)7761/562-446
www.vita-zahnfabrik.com · info@vita-zahnfabrik.com
[facebook.com/vita.zahnfabrik](https://www.facebook.com/vita.zahnfabrik)