



HeraCeram® Ceramics
Perfect for you.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

HeraCeram®

Simply perfect.

Ceramics that are perfectly adapted both in terms of their appearance and their technical properties: that means simple, reliable and fast processing with unbeatable aesthetic results. Each HeraCeram ceramic product is specifically tailored to suit your framework material. At the same time, every ceramic also offers consistent processing and high aesthetics for perfect results that you can rely on.

Optically perfect – with high-purity quartz glass

Synthetic quartz glass is your guarantee of superior quality for all HeraCeram ceramics. Thanks to its extreme purity, it offers unique aesthetic properties, e.g. opalescence and fluorescence from within.

Technically perfect – with a stabilised leucite structure (SLS)

The stabilised leucite structure (SLS) ensures that HeraCeram ceramics are particularly resistant to stress. And the consistent level of microfine leucite crystals makes chipping a thing of the past.



Simply perfect – with a consistent processing philosophy

All HeraCeram ceramics are processed in exactly the same simplified way – allowing you to maximise your efficiency. There is also an added bonus: expensive firing time can be saved thanks to shorter firing and cooling times depending upon your preferred technique.

Reap the benefits – with HeraCeram.

Optimise your success with HeraCeram. Surpass your expectation and give your clients the smile that they have only dreamed about on any alloy or zirconia frame work. Inspired by science, HeraCeram creates optimised aesthetics with extreme physical and mechanical strength. Its robustness has been verified by independent university studies. Make life easier and reap the benefits of fast efficient processing that saves time and costs. HeraCeram – made with you in mind.

Optically perfect, technically perfect – for results that you and your patients can see. Everything is geared to your success.



Ceramic for all that you do

Perfect frameworks for all requirements.

With HeraCeram ceramics, you can achieve aesthetic restorations that suit every need in any situation – from authentic reproduction of everyday A – D shades to skilful customisation, through to high end complex restorations with vibrant light dynamics.

All ceramic materials are processed in exactly the same simple way for every framework material. A great help if you are running a busy dental laboratory.

Everyday A–D Shades

Reliable reproduction
of classic A–D shades

- Opaquer set resp. ■ Liner set*
- Dentine and/or ■ Chroma
- Incisal set dentine set**
- Optional:
- Stains set
- universal

Personalised

Patient specific
shade adjustment

- Opaquer set resp. ■ Liner set*
- Dentine and/or ■ Chroma
- incisal set dentine set**
- Optional:
- Stains set
- universal

+

- Increaser set
- Enhancer set

Our starter sets: First-Touch set (A2; A3; A3,5);
Professional set (BL3; A2; A3; A3,5; B2; B3; C2; C3; D3)***

Matrix

Truly natural for highly
individualised restorations.

- Opaquer set resp. ■ Liner set*
- Dentine and/or ■ Chroma
- incisal set dentine set**
- Optional:
- Stains set
- universal

+

- Matrix set

Special

Special applications

Margin set

Bleach
Shades***

Pressable
ceramics****

Gingiva set

* only HeraCeram Zirkonia
 ** only HeraCeram Zirkonia 750
 *** not available for HeraCeram Zirkonia 750
 **** only HeraCeram

Perfectly tailored to your framework.

For conventional bonding alloys
 HeraCeram is a high fusing ceramic line
 for conventional bonding alloys with a CTE
 ranging from 13.5 – 14.9 $\mu\text{m}/\text{mK}$.



For zirconium dioxide frameworks
 HeraCeram Zirkonia is ideally suited to zirconium
 dioxide frameworks with its CTE of 10.5 $\mu\text{m}/\text{mK}$.
 The stabilised leucite structure (SLS) prevents
 cracking and chipping.



For lithium disilicate and zirconium dioxide frameworks
 HeraCeram Zirkonia 750 is developed for ceramic
 frameworks with a CTE ranging from 10.2–10.5 Mm/mK ,
 lithium disilicate and zirconium dioxide. Its lower firing
 temperature guarantees a safe treatment of both
 frameworks.



Optically perfect – with high purity synthetic quartz glass.

Quartz glass (SiO_2) is an integral part of all dental ceramics and plays a functional role. However, the purer the quartz glass, the better the optical properties. Our specialised quartz glass is totally unique within dentistry. It is the only dental ceramic manufactured today, that uses pure Synthetic Glass.

That means faultless design and performance. Synthetic manufacture ensures that HeraCeram ceramics provide not only perfect and consistent high quality, but also identical aesthetics. The purity of synthetic quartz glass provides unique, internal true opalescence and fluorescence. This ensures that every HeraCeram restoration can achieve a natural and fully dynamic appearance.



Take a look at the natural quartz crystal. See how the light is dispersed. Pure synthetic glass is completely different. See how synthetic glass appears transparent and pure. Optically perfect.



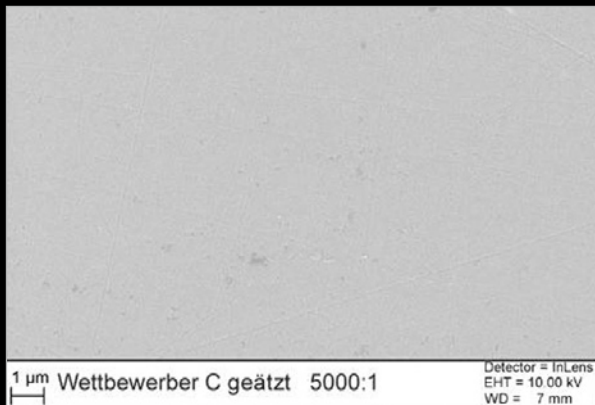
Synthetic Quartz Glass. Purity of translucency is the base for enamel-like opalescence.

Technically perfect – with a stabilised leucite structure (SLS).

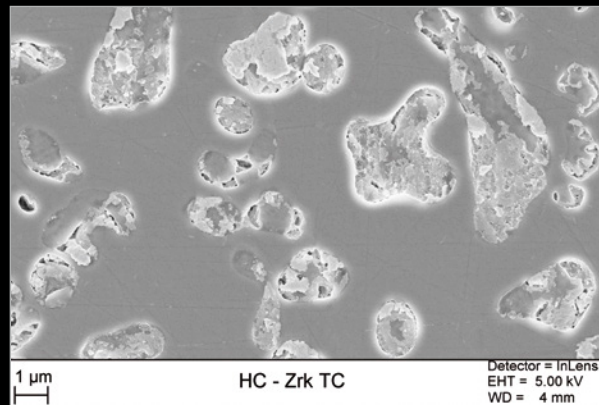
All HeraCeram ceramics are able to combine time saving processes with the highest levels of stress resistance. This is due to what we term as Stabilised Leucite Structure or SLS. All ranges of HeraCeram including Zirkonia contain micro-fine Leucite particles which substantially reduce the susceptibility of chipping and fracture. So less stress in the restoration and also less stress for you! The secret behind our SLS formula is its composition combined with a specialised production process. The combination of balanced Leucite crystals and specialised manufacturing prevents an uncontrollable rise in the coefficient of thermal expansion during firing. So no matter if the ceramic is bonded to metal or to zirkonia oxide there will be less stress meaning less failures.

Because of the SLS formula, HeraCeram ceramics are extremely robust and can be fired quickly, efficiently, reliably and consistently. A huge range of benefits that should satisfy every dental technician:

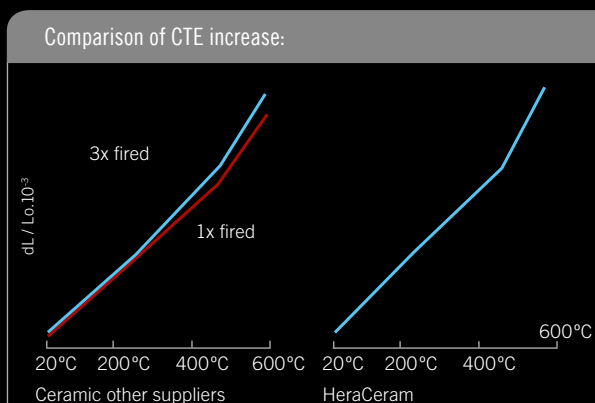
- Extremely short firing cycles as the starting temperature is 600°C
- High heating rate (100°C/min)
- Low firing end temperature (880°C max.)
- No special cooling phase required
- Reduced firing shrinkage
- Stabilised coefficient of thermal expansion, even after multiple firings
- Protection against chipping and cracks



This shows a Zirconia Oxide veneering ceramic without the inclusion of Leucite.



See the difference. Heraceram Zirkonia with its crack inhibiting Stabilised Leucite Structure. Technically perfect.



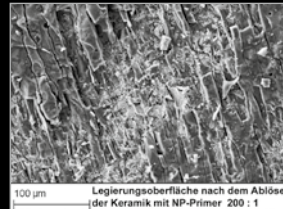
Comparison of CTE. Unstable CTE of other dental ceramic after multiple firing. (left) Stabilised CTE of HeraCeram after multiple firing. (right)

The perfect bond – secure bonding for your framework.



NP-Primer

The perfect foundation for safe veneering of non-precious metals. With the new HeraCeram® NP-Primer, non-precious metal frameworks can be reliably conditioned for ceramic veneering with HeraCeram saving you time. The NP-Primer prevents uncontrolled formation of an oxide layer on the nonprecious metal alloy surface. It specifically loosens the oxide layer on the non-precious metal surface and thus enables optimal wetting of the framework surface with ceramic. Even with critical oxide behaviour, the NP-Primer ensures secure bonding between the alloy and bonding ceramic. An optimal foundation for long lasting aesthetic restorations.



In a high resolution SEM, it is clear that the ceramic has fractured, but fully adheres to the non-precious alloy surface pre-treated with NP-Primer.



In close up the varying and inferior degree of wetting of the untreated non-precious surface can clearly be seen, which explains a poor bond strength.

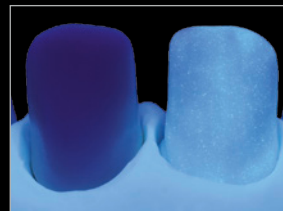


Zr-Adhesive

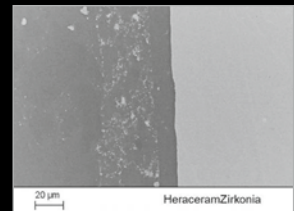
HeraCeram Zirconia Paste Adhesive is specifically developed for zirconium oxide veneering. It will ensure a maximum bond between the veneering ceramic and the zirconia framework. No need for risky sandblasting of the sensitive zirconium oxide surface.

The adhesive firing process has three functions:

- Cleansing of the Zirconia framework
- Realisation of an extreme adhesive bond due to optimised wetting of the zirconium oxide surface
- Provide internal fluorescence for a more natural appearance



The fluorescent effect of the Adhesive becomes visible in ultraviolet light.



Micrograph of Adhesive on ZrO₂.

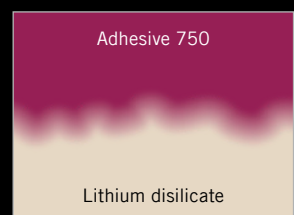


Adhesive 750

Our new Adhesive 750 guarantees best-in-class bonding even at lower temperatures. One bonding solution for lithium disilicate and zirconia frameworks! Its ultrafine grain size improves handling and firing properties, while offering smoother consistency and increasing the wettability of the framework surface. Our unique single bonding strategy creates adhesive bonds to zirconia and cohesive bonds to lithium disilicate. Adhesive 750 has built-in fluorescence which is seen at the deepest part of the restoration. Exactly as nature intended!



Adhesive bonding with zirconia



Cohesive bonding with lithium disilicate

Always perfect – top class results with any processing technique.



Classic layering technique

From the simple reproduction of everyday shades to portraying intricate life like details of natural teeth, you are able to master every layering concept. Our comprehensive range of ceramics always offers the best solution even if you prefer to use bonding alloy or zirconia as your preferred framework.

Pressable ceramics

HeraCeram Pressable ceramic. The integration of bonding and press ceramic within a single system. Ideal for inlays, onlays, veneers and single crowns. Harmonise every restoration as nature intended time after time.

Processing of Universal Stains.

A range of stains for universal applications.

HeraCeram Stains universal are stains for all ceramic lines from Kulzer. The range of indications covers all applications from standard individualisation up to the comprehensive shade design of monochromatic systems (e.g. monolithic zirconium dioxide restorations). Stains and glaze are available in powder and paste form.



Individualisation of molar occlusal surfaces by means of optical deepening of fissures with stains, e.g. Maroon.



In addition to Body Stains (BS) and Enamels (EN), the Stain Set universal includes 17 individual stains and a glaze.



Stains for characterisation have a thicker consistency for effects with precise colour separation. In contrast, the stains for applications over larger surfaces are somewhat softer. As such, they spread out automatically and cover the surface evenly.

HeraCeram Zirkonia 750

the “cool” solution for: zirconia and lithium disilicate.

Why use two ceramics when all you need is one?

New HeraCeram Zirkonia 750. One ceramic for every type of zirconia and lithium disilicate restoration. HC Zirkonia 750 stands out with its unique and revolutionary adhesive, ultrafine particle size, highly extended gingival range, and increased shade selection. And it's now more antagonist-friendly due to increased density, ensuring long-lasting and unrivalled natural looking restorations.

There are no limits!

HeraCeram Zirkonia 750 has all the aesthetic and professional resources you need to recreate nature on all-ceramic frames. It offers an impressive new range of chroma dentines, our unique Adhesive 750 with increased wettability, and the largest range of gingiva shades currently available. You now have the resources to deliver simple everyday restorations, as well as finely detailed and high-end individualised restorations of supreme quality – with a single ceramic for all ceramic frames (CTE of 10.2 to 10.5 $\mu\text{m}/\text{mK}$).

The advantages at a glance:

- One ceramic for all types of zirconia and lithium disilicate.
- Adhesive 750. Our unique single bonding strategy.
- Ultrafine particle size. Elevated surface smoothness and density.
- Impressive range of chroma dentines ensuring shade accuracy.
- Low temperature firing. No chance of warpage or discolouration.



Gingival restorations

'Red aesthetics' required.

The increasing use of implants now also makes it possible to indicate fixed dental restorations where the necessary tooth abutments were previously lacking. In these cases, the jaw and gums have already frequently undergone substantial deterioration. However, a restoration can only succeed if the surrounding conditions are right, in other words: if both the 'red' and the 'white' aesthetics can be reproduced. After all, unsatisfactory gums spoil the overall impression and missing gingival substance results in unnatural tooth proportions and 'holes' in the interdental gaps.

The be all and end all: healthy gums

Severely atrophied jaw ridges pose a huge challenge in restorations with crowns and bridges. In these cases, not only the teeth but also the missing gingiva must be replaced. And intact gums not only support a harmonious appearance, they also prevent hygiene and phonetic deficits at the same time. A restoration only becomes a rehabilitation when the gums look healthy.

Demanding restorations

Reconstruction of the gingiva is just as challenging as veneering. It is also necessary here to pay attention to anatomy, surface texture, colour and individual characteristics. These factors play a crucial part in how the restoration is perceived – both visually by the general public and haptically by the patient's tongue.

New gingival colour concept

The demand for gingival restorations is increasing. Kulzer has therefore revamped the gingival colour concept: three additional gingival colours and special gingival stains offer the dental technician a whole range of possibilities for perfectly reproducing the 'red aesthetics' so that the patient can smile happily again.



Laughter and happiness show more than only teeth.



Fragmentary: the provisionals give an idea about the challenge for aesthetic and phonetic on these atrophied jaws.



Natural impression: restoration of the anteriors with restoration of the gums. (Source: Zsolt Kovacs, Labor Dentalmaia, Pedro Couto Viana, Dentist; Portugal)

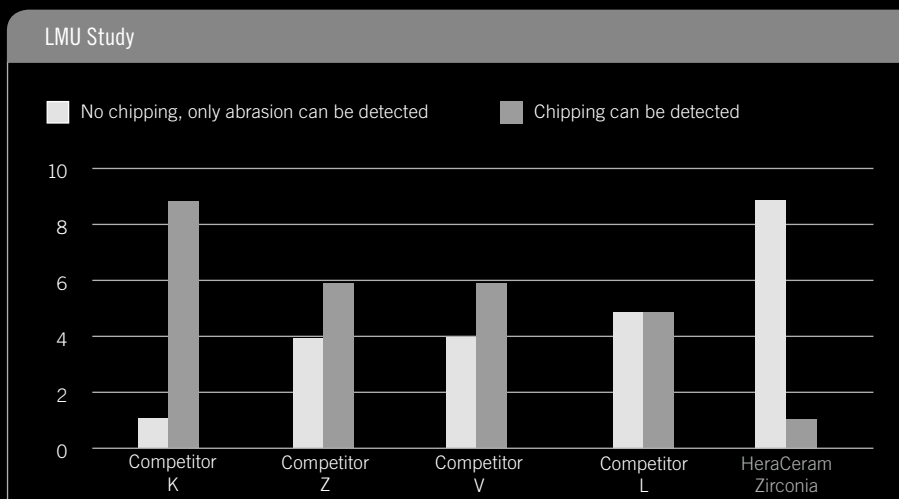
Science – proven veneering for zirconium oxide.

Scientific investigations show that an optimised veneering ceramic combined with correct protocols at the laboratory significantly reduce the likelihood of chipping for zirconium oxide restorations.

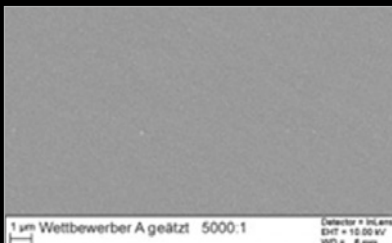
In a recent study on the fracture behaviour of zirconium oxide veneers the Polyclinic for Dental Prosthetics at the Ludwig Maximilians University (LMU) in Munich discovered substantial differences between various veneering materials. Zirconium oxide crowns were veneered with layering ceramic and examined for chipping after artificial ageing in a mastication simulator.

Of the five veneering ceramics examined, HeraCeram Zirkonia turned out to be the best all round. Zirconium oxide crowns that had been veneered with HeraCeram Zirkonia suffered far less chipping than all rival ceramics tested.

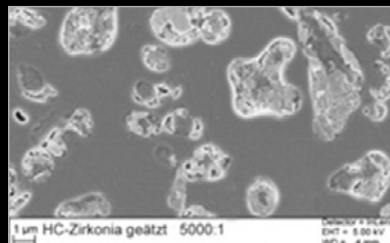
Beuer F, Schweiger J. In-vitro-Untersuchung zum Frakturverhalten von Zirkoniumdioxid-Einzelkronen. LMU München, 2011, published at the magazine "das dental labor", March 2012.



► Chipping problems are clearly reduced with HeraCeram.



Zirconium oxide bonding ceramic without anti-crack structure



HeraCeram Zirkonia with stabilised leucite structure

HeraCeram NP primer improves wettability and bonding.

Study carried out at the Hannover Medical School on veneering of NPM.

The veneering of non-precious metals (NPM) is often a real challenge due to high oxide formation. A recent study at the Hannover Medical School has shown: the Hera Ceram NP primer increases the wettability of the NPM surface and consequently the bond strength.

Who is veneering NPM, knows the Problem: The oxides on the framework surface influence the bonding. They reduce the wettability of the alloy surface and avoid the full utilization of the bonding parameters. Which can cause to flaws, bubbles or chipping.

The NP-Primer allow an optimal coverage of the alloy surface with ceramics. It is reliable in flaking the emerging oxides and prevent a high oxidation of the alloy surface. This ensure for a certain bonding between alloy and ceramic.

Good wettability creates a secure bond.

The Hannover Medical School has confirmed the primer's positive effect on the bond in a recent in-vitro study. The effects of the primer application were tested quantitatively in a mechanical fracturing test and qualitatively under a scanning electron microscope.

The NP primer increased the rate of energy release. This defines the energy required to detach the ceramic from the alloy surface. Consequently, a higher value represents a more secure bond between the alloy and the ceramic. Under the microscope, islets of ceramic adhesions in the test without primer application indicated poor wetting of the framework surface. The tests using the NP primer reported a homogeneous surface lightly coated with ceramic – a clear indication of the uniform bond between the ceramic and framework.

Conclusion: HeraCeram NP primer increases the wettability of the NPM surfaces. This makes optimal use of all the factors involved in the bond and effectively prevents problems such as fracturing, bubbling and flaking.

Source: Kohorst P, Rizeq F, Stiesch M. Verbesserung des Keramik-Legierung-Verbundes durch Applikation eines Primers [Improving the ceramic-alloy bond by applying a primer]. Hannover Medical School, Hanover 2011.

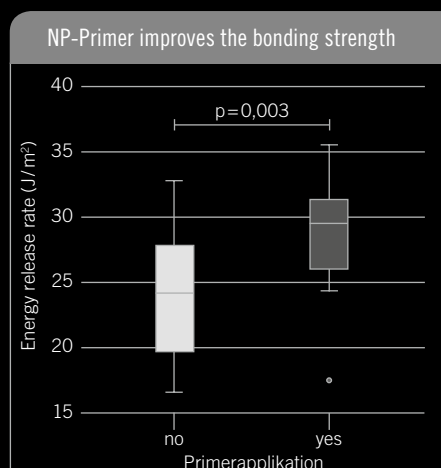
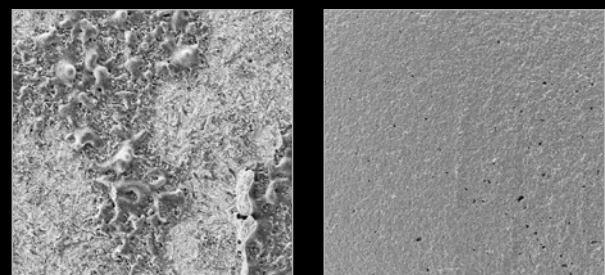


Image: Dr. Philipp Kohorst



HeraCeram NP primer improves the wettability of the NPM surface and thus improves the bond (pictures of fracture surface left without and right with primer).

Kulzer Academies

training courses for your success.

We offer a full range of exciting training courses designed to surpass your expectations. Expand your knowledge and increase your skill levels by attending a tailored training programme presented by our technical training team.

We are here to help you for all things ceramic and we look forward to seeing you.



For further information on all Kulzer training programs please contact your local Kulzer representative.

Find out more about HeraCeram www.kulzer.com/HeraCeram

HeraCeram® Stains universal

The range of stains for universal applications

Stain Set, universal.

The Stains universal set includes 22 Stains (2ml) and a Glaze paste (2ml).

Contents

- 17x2 ml Individual Stains
- 3x2 ml Body Stain BS-A; BS-B; BS-C
- 2x2 ml Enamels EN Pearl; EN Opal
- 1x2 ml Glaze GL
- 1x2 ml Stain Liquid universal SLU
- 1x Stain brush
- 1x Glaze brush
- 1x Shade guide
- Art. Code: 6605 2534
- In addition to the set, the Glaze is also available as a powder (20g).

Stain Set, universal, powder.

The Stains universal set includes 22 Stains (3g) and a Glaze (3g).

Contents

- 17x3 g Individual Stains
- 3x3 g Body Stain BS-A; BS-B; BS-C
- 2x3 g Enamels EN Pearl; EN Opal
- 1x3 g Glaze GL
- 1x3 g Stain Liquid universal SLU
- 1x Stain brush
- 1x Glaze brush
- 1x Shade guide
- Art. Code: 6605 8216
- In addition to the set, the Glaze is also available as a powder (20g).



Contact in Germany

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