



Laboratory Products 2018/2019

Quality products and services for your success.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP



Giving a hand to oral health.

Dear customers,

As you surely noticed from the cover of this catalogue, our name now is Kulzer. It is a name that has stood for reliable and innovative dental products for more than 80 years – and we will stay true to that reputation. Our goal is to provide you with best-in-class solutions that empower you to design production processes that are safe, more convenient, and at the same time cost-effective. We continuously expand our portfolio of dental materials and technologies to reach these goals on your behalf. In the road ahead, an even stronger R&D department backed up by the innovating power of our parent company, Mitsui Chemicals, will support this aim.

We create solutions that ensure smooth processes in the laboratory. Our individualised approach to automated in-house production reveals the countless ways to combine and interconnect Kulzer products, such as: the model scanner cara Scan 4.0; the new 3D-printer cara Print 4.0; the new milling machines; and a broad range of materials, such as dima Mill and dima Print. In addition to the digital realm, we continually develop our classic materials. Innovations like the plaster Moldarock Royal and our high-performance light curing unit HiLite Power 3D offer excellent assistance in your daily tasks.

Even with our new look and name, we will remain your reliable lifetime partner and continue to expand upon our customer-oriented products and services. In future, you can rely on our enlarged customer service to help you take advantage of the opportunities that new technologies offer. If you are also interested in developing your professional skills, you can benefit from our extensive training programme. Together with you, we are giving a hand to oral health.

Rediscover a reliable partner – in this catalogue, at our events, and in a personal conversation.

Yours sincerely



Marc Berendes, CSO



Marc Berendes, CSO

“In our system solutions, materials, technologies and services are interconnected from the very start.”

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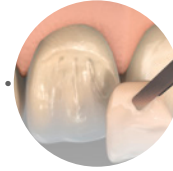
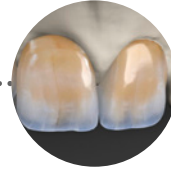
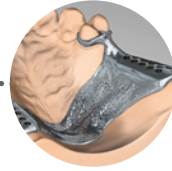
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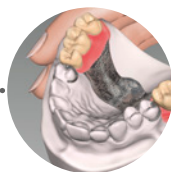
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LABORATORY



Work Preparation	Crown- and Bridgework	Cast Partial Denture System	Ceramics	Veneering Composites
Dental Plasters <ul style="list-style-type: none"> Dental Plasters Type 2 Dental Plasters Type 3 Dental Plasters Type 4 Special plasters Futher Materials for Modelling <ul style="list-style-type: none"> Silicone Surfactant SWE 2000 Splitcast System & Insolation Pins Blocking out material 	Dental Alloys <ul style="list-style-type: none"> Non Precious Metal Alloys Wires, solders and special materials Ceramic Bonding Alloys Universal Alloys Gold Content Casting Alloys Precision Attachments <ul style="list-style-type: none"> T-Attachments Locks Anchor Systems & Retainers Root posts Other precision attachments Preciano Electroforming <ul style="list-style-type: none"> Preciano iQ Preciano Gold Solution Preciano Cunsumables Investments Crowns- and Bridges <ul style="list-style-type: none"> Speed Heating Programm controlled Solder Investment Casting Machines & Accessories <ul style="list-style-type: none"> Heracast iQ Accessories for casting machines Cast Treament & Soldering <ul style="list-style-type: none"> Consumables Abrasive Materials Etching Materials and Flux 	Duplicating <ul style="list-style-type: none"> Vario Duplicating Flask Duplicating silicone KF Partial Denture-casting Wax Investments <ul style="list-style-type: none"> Speed Heating Programm controlled Investment for Partial Denture System <ul style="list-style-type: none"> Speed Programm controlled Partial Denture Casting Alloys <ul style="list-style-type: none"> Non Precious Metal Alloys Precious Metal Alloys Wires, Solders for partial denture casting alloys Casting Machines & Accessories <ul style="list-style-type: none"> HeraCast iQ Accessories for casting machines 	Veneering Ceramics <ul style="list-style-type: none"> HeraCeram HeraCeram Zirkonia HeraCeram Zirkonia 750 Pressable Ceramics <ul style="list-style-type: none"> HeraCeram Press Stains <ul style="list-style-type: none"> HeraCeram Stains universal Non-Precious Metal Bonder <ul style="list-style-type: none"> HeraCeram NP-Primer HeraCeram Pre-opaque Accessories for Veneering Ceramics <ul style="list-style-type: none"> Liquids Brushes Shade Guides Tray and pins Accessories for Pressable Ceramics <ul style="list-style-type: none"> Investment Compound for Pressable Ceramics Disposable press plunger Investment ring set Austromat 624 Austromat 654 press-i-dent 	Metal-supported Veneering <ul style="list-style-type: none"> Signum composite Signum composite flow Signum cre-active Signum matrix Metal-free Veneering <ul style="list-style-type: none"> Signum ceramis Signum cre-active Signum matrix Bonding Agents <ul style="list-style-type: none"> Signum ceramic bond Signum metal bond Signum zirconia bond Light Polymerization Devices <ul style="list-style-type: none"> HiLite power 3D HiLite pre 2 Accessories Veneering Composites <ul style="list-style-type: none"> Signum connector Signum HP diamond Signum HP paste Signum insulating gel Signum insulating pen Signum liquid Signum toolkit/ Instruments



Denture Teeth	Denture Materials	CAD/CAM	Laboratory Devices and Equipment
Pala Mix & Match <ul style="list-style-type: none"> ■ PalaVeneer ■ Pala Premium ■ Pala Idealis ■ Pala Mondial Classic Basic Artic Accessories Teeth <ul style="list-style-type: none"> ■ Pala Mix & Match Shade Guide ■ Tooth Cabinets 	Cold Curing Denture Acrylics <ul style="list-style-type: none"> ■ PalaXpress ultra ■ PalaXpress ■ Palapress ■ Palapress vario ■ Paladur ■ Meliodent RR Heat Curing Denture Acrylics <ul style="list-style-type: none"> ■ Paladon 65 ■ Meliodent Heat Cure ■ Paladent 20 Tray and Model Acrylics <ul style="list-style-type: none"> ■ Palatry XL ■ Palavit L ■ Palavit G ■ Palavit M Tooth-coloured Acrylic <ul style="list-style-type: none"> ■ Palavit 55 VS ■ PalaVeneer Dentine Characterization <ul style="list-style-type: none"> ■ Pala cre-active Finishing <ul style="list-style-type: none"> ■ Palaseal ■ Palaclean Denture Manufacturing <ul style="list-style-type: none"> ■ Aislar ■ Palabond Equipment for Denture Manufacturing <ul style="list-style-type: none"> ■ Contact A ■ Palamat elite ■ Palajet Accessories Denture Materials <ul style="list-style-type: none"> ■ Pala Shade Guide ■ PalaMeter ■ PalaBox ■ Further Accessories for Denture Materials 	cara Production Service Implant Prosthetics <ul style="list-style-type: none"> ■ cara I-Bridge ■ cara I-Bar ■ cara I-Butment ■ cara YantaLoc Crown and Bridges Prosthetics <ul style="list-style-type: none"> ■ cara C&B ■ cara Inlays/Onlays/Veneers ■ cara Models ■ cara Telescope ■ cara Temporary cara Hardware and Software <ul style="list-style-type: none"> ■ cara TRIOS ■ 3Shape Scanner ■ cara Scan 4.0 ■ cara Print 4.0 ■ cara Mill 2.5, 3.5, 3.5L dima Material <ul style="list-style-type: none"> ■ Zirconium Dioxide ■ PMMA ■ Wax ■ Cobalt chrome ■ 3D print resins 	Casting Machines <ul style="list-style-type: none"> ■ Heracast iQ ■ Accessories for casting machines Electroforming Unit <ul style="list-style-type: none"> ■ Preciano iQ Injection Unit <ul style="list-style-type: none"> ■ Palajet Polymerization Units <ul style="list-style-type: none"> ■ Palamat elite ■ HiLite power 3D ■ HiLite pre 2 Ceramic furnace <ul style="list-style-type: none"> ■ Austromat 624 ■ Austromat 654 press-i-dent

1 SERVICES

1.2 KULZER TRAINING CENTER HANAU

MASTER-CLASS TRAININGS OF ALL KULZER PRODUCTS:
SIMULATED DENTISTRY TRAININGS AND COMPLETE DIGITAL
WORKFLOWS IN THE LABORATORY.



Conference Room
with sophisticated AV-capabilities for learning at high level



Simulation Room
ultramodern dentistry simulation units for training all kind of patient treatment



Laboratory Classroom
equipped with perfect dental workplaces & AV-capabilities



Technical Area
fully equipped dental laboratory

Multimedia:

All classrooms are very well equipped with high end conversation and media-transmission technology

Training varieties:

From Impression taking via CAD/CAM to veneering. Hands on restoratives and medical therapie under life like conditions

Experts:

Our most experienced trainer will share their knowledge, tips and tricks in a range of languages



Bénédicte Pretscher

ASK FOR FURTHER INFORMATION
ON COURSE BOOKINGS NOW!

benedicte.pretscher@kulzer-dental.com
www.kulzer.com/training-center-hanau

1.3 KULZER EXPERTPOOL

DENTAL KNOWLEDGE

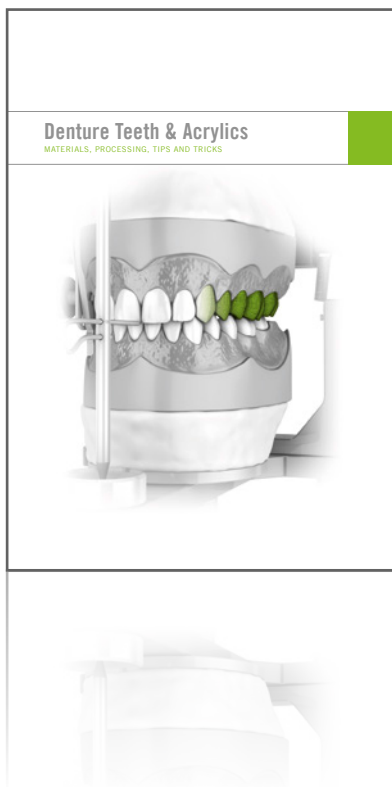
The latest book in the series “Dental Knowledge” from Kulzer, **“Denture Teeth and Acrylics: materials, processing, tips and tricks”** provides important knowledge about manufacturing, characterisation, repair and care of dentures. The first part of the book examines materials and processes. Key focus is on PMMA-based components of denture acrylics and innovative fillers in artificial teeth as well as, acrylic processing procedures in dental manufacturers and the laboratory environment.

Furthermore the book includes the physical and chemical properties of teeth and denture base material as well as the prerequisites for biocompatibility and long duration of use for denture teeth. **The practical section of the book includes the technical procedure for producing dentures**, from the first step of taking an impression, through to the set up and gingival models, and even up to individual characterisation.

In addition, there are helpful tips and information regarding denture care, repair and relining. The acrylic troubleshooting guide at the end of the book explains the possible causes for bubble formation, discolouration, cracks and several other issues by giving valuable tips on how to avoiding these issues.

Please contact your local partner if you want to order this book.

Article No. 66054983



DIGITAL PROSTHETICS FROM CARA. PUT YOUR TRUST IN CUSTOMISED DIGITAL SOLUTIONS.

As an innovative, reliable partner for dental laboratories and dental practices, cara offers products, services and technologies for the complete digital dental workflow. With our state-of-the-art cara Production Centre and our extensive product portfolio, covering all elements of CAD/CAM, we offer you precisely the solutions that you require. Customised, high-quality and aesthetic.

Utilise the full potential of digital dentistry with cara including: digital impression-taking with the dental scanner in the laboratory or practice, the processing of the data with CAD software, centralised production of the frameworks in the cara Production Centre as well as veneering products for dental technicians. We offer you the perfect conditions with our products and services.

2 CAD/CAM

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cara Basics for Laboratories.

Digital solutions from one source.

cara Production Centre

The perfect selection! With our wide range of production technologies, first-class materials, such as the translucent zirconium dioxide, cobalt-chrome, titanium, ceramics and acrylics, as well as innovative products from implant prosthetics to classic crowns and bridges, we have the perfect solution for every indication.

cara Team

There for you seven days a week! Our Production Centre is manned in shifts and production for cara customers continues even over the weekend. Our specialised application technicians are available to help you personally from Monday to Friday: either live on site or via our telephone and online technical support service. We will also be delighted to assist you by suggesting flexible financing systems.

cara Digital Workflow

Systematic safety! cara offers you everything from a single source, from the cara TRIOS intraoral scanner to laboratory scanners and software packages right up to production and production devices for the laboratory. Optimally coordinated components, also optionally available in open-system versions, make data exchange between the laboratory and practice even simpler. The cara Production Centre also receives and processes data from other systems, allowing optimal compatibility.



cara TRIOS intraoral scanner.

New standards in digital impressions.

Not only the patient is happy. There is less and less need for the often uncomfortable impression-taking process at the dentist's, as it is replaced by the considerably more comfortable digital impression via the intraoral scanner. In nearly no time at all, the oral situation is captured in three dimensions and stored in digital form. Free of powder and contrast agents and absolutely precise.

The cara TRIOS intraoral scanner designs digital impressions very simply, quickly and precisely. Your familiar work process remains the same: cara TRIOS just makes it much more efficient! You receive the data already prepared in digital form, define the preparation margin, extract the die virtually from the alveolar model, articulate the models, check the overall structure and send the designed framework for production. An extremely convenient and efficient workflow which also includes a range of benefits for your laboratory!

- Stronger laboratory-dentist relationship
- Simplified cooperation and coordination
- Accurate data from the partner practice and more precisely defined results
- Connection and receipt of data are free of charge
- No protracted work preparations and reworking necessary
- Fewer sources of error and higher dental restoration quality
- Greater productivity thanks to optimised workflow
- Long-term customer satisfaction

For further Information about cara TRIOS please also take a look on www.kulzer.com/cara-trios



Real-time 3D scan in true colours and cara TRIOS Pod.

TRIOS,  3Shape



cara has a lot more to offer you!

Find out more about the possibilities on our website. Or contact our sales representatives in your country.

www.kulzer.com/cara

cara Hardware and Software.

Scanners & software for all your needs.

cara scanners

Our partner 3Shape offers the widest range of scanners in the Dental Lab Industry. With the new E-Scanner Series E1, E2 and E3, and the D1000 and D2000 you have the choice to find the right scanner for your specific needs. Combine that with the right software package and you have a customized system for your practice lab. The new Crown & Bridge package has been designed to solve the majority of the cases in a lab. If you need more, go with the premium package or choose from a long list of Add-On modules for more advanced cases or use pay-per-use by using CAD Points for each case.



Dental System – Software Configurations

Dental System Crowns & Bridges

- Coping and bridge frameworks
- Anatomical copings and bridges
- Full anatomical C&B
- Single Wax Up/wax-up bridges
- Inlay/Onlay/Veneers

Dental System Premium offers additional:

- Gingiva design
- Tabletops and non prepared veneers
- Multi-layer C&B
- Digital temporaries
- Virtual diagnostic wax-up
- Post & Core
- Telescopes
- Impression trays
- Positioning guides
- Splints, nightguards and protectors

Add-On Module of 3Shape or use CAD Points

Abutment Designer



Full Dentures



Implant Bars & Bridges



Model Builder™ (TRIOS® and 3rd Party)



Removable Partial Dentures



CAD Points



All other indications can be done by using CAD Points or ordering the add-on modules.

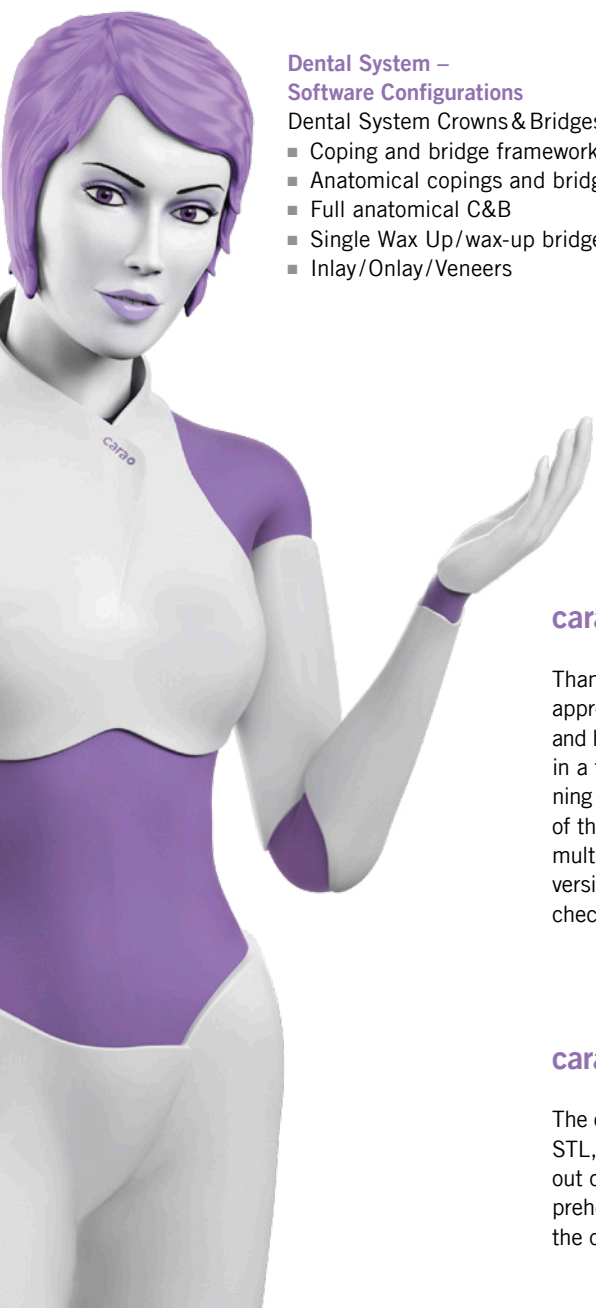
cara Scan 4.0: convenient and ready to use

Thanks to its small dimensions and its low weight, the cara Scan 4.0 is appropriate for every laboratory and every practice. The easily operated and highly precise two-axis scanner measures to an accuracy of 15 microns in a fully automatic scanning procedure and offers you a range of scanning strategies: The in-place strategy allows you to determine the position of the individual tooth exactly; the multi-die strategy allows you to scan multiple teeth simultaneously and you can work with the fully automatic version for single caps. Selective scanning of the gingiva, wax-ups and check bites are also made easier.



cara CAD Software: universal and practice-oriented

The cara CAD software works with standardised open formats. For example, STL, PLY, ASC and other data sets can be imported into and exported out of all CAD/CAM systems without any problems. This guarantees comprehensive system compatibility and smooth communication between the dental practice, dental laboratory and production centre.



2 CARA CAD/CAM

2.4 CARA MILL 2.5, 3.5, 3.5 PRO, 3.5L, 3.5L PRO



cara Mill 2.5, 3.5, 3.5 PRO, 3.5L, 3.5L PRO Powerful range of precision milling solutions.

cara offers five different mills, ranging from a compact, benchtop solution to a powerful, 24-hour output-boosting solution. The new PRO(fessional) lines of the cara Mill 3.5 and 3.5L provide maximum stability for vibration-free processing. In addition, the high-dynamic servo motors with absolute measuring system in all axes increase processing speed by up to 20% while maintaining optimum precision. All mills are based on Kulzer's many years of experience with centralised CAD/CAM production.

cara Mill 2.5: Compact solution for soft materials.

The ideal introduction to milling, perfect for small to medium-sized laboratories. cara Mill 2.5 and its extensive accessories help you achieve first-class results in your own lab. Independently, at competitive prices and with the best cara quality. With its space-saving and premium design, cara Mill 2.5 is a precise and sturdy milling machine for wet and dry processing. It's your gateway to in-house 5-axis milling, so you can machine all key dental materials such as zirconia, PMMA acrylics, wax, lithium disilicate, glass ceramic and hybrid materials.



cara Mill 3.5, 3.5 PRO: For hard and soft materials.

With 6 mm mill tools, cara Mill 3.5, 3.5 PRO is a more powerful, and more technically sophisticated mill in the cara family. It has simultaneous 5-axis machining capabilities and up to a 30° axis tilt angle. The 60,000 rpm, 1 kW spindle can handle all of the important materials used within the dental industry – even hard metals such as cobalt chrome and titanium. And it's still compact enough to fit on your workbench.

The cara Mill 3.5, 3.5 PRO promises an easy and intuitive operation designed to help labs achieve fast and accurate results no matter what the material, from wax to zirconium to CoCr (solid metal). The highest precision is ensured even for hard-metal dental restorations with complex geometries. Now you can keep those complex milling jobs in-house.



cara Mill 3.5L, 3.5L PRO: Hard and soft materials, milled 24/7.

cara Mill 3.5L, 3.5L PRO is basically the same workhorse as cara Mill 3.5, 3.5 PRO, but with the additional benefits of having an integrated disc loader and a precise, zero point clamping system. The loader system allows you to store up to 12 discs for fully automated milling over longer periods, also made feasible by a 20-fold tool changer. This enables the mill to operate at full capacity round the clock and even over the weekends.

This mill processes all relevant blank materials from CoCr, titanium, zirconium dioxide, plastics, block materials, and new future materials with a single machine system, virtually without restrictions. The unique features of this system make it ideal for demanding labs seeking to produce all typical applications in-house, with high quality, using CAD/CAM technology.



Complete your digital workflow

cara Mill CAM 4 & 5: Control software for getting started and going in-depth



cara Mill CAM 4 is our “basic” CAM software with no licensing fees. The straightforward interface is perfect for technicians who are just getting started with milling on a machine like cara Mill 2.5. The software allows for 3+2-axes milling in a simple, user-friendly format.

cara Mill CAM 5 is the software of choice for experienced professionals who want to take full advantage of the diverse functionalities of sophisticated milling machines like cara Mill 3.5, 3.5 PRO and 3.5L, 3.5L PRO – but the software is also suitable for cara Mill 2.5. cara Mill CAM 5 allows for simultaneous 5-axes milling in a user-friendly, but in-depth and sophisticated format.

Milling tools and accessories: Extracting detail

Our milling cutters and grinders meet the highest technical requirements and are extremely cost-efficient due to their long service lives. Milling tools are available with diamond nanoparticle coatings or abrasion-proof galvanic diamond coatings, and specialised tools are available for special cutting geometries.

In addition, there are various preform abutment holders available, which allow simultaneous processing of six blanks in a single operation, and to mill or grind up to 3 block materials with a glass-ceramic adapter respectively.



cara Mill Vac eco+: The quiet power of clean

cara Mill Vac eco+ is a quiet, compact and powerful dust-extraction solution. This high-performance unit reliably evacuates particles and provides filtration of fumes and fine dust generated by dental marking, milling, cutting, etching or engraving. The low-noise suction system – below 75 dB – also uses a downstream HEPA filter to prevent residual particles from leaking out.

cara Mill Sinter: Touchscreen temperature control

cara Mill Sinter is the user-friendly solution to the challenge of finding a high-performance, table-top furnace for high-quality dental workshops. Combining precision drying with fast and targeted heating and cooling, this space-saving high-temperature furnace features low power consumption and short sintering cycles at up to 1,530°C (1,560°C optional).



Learn more on our website:

www.kulzer.com/cara-mill

cara Print 4.0

Quick, precise, economical: The perfect fit.

Finally, a fast 3D printer that meets all the accuracy requirements for polymer-based dental appliances. cara Print 4.0 is the new 3D printer built specifically for dental technicians – by dental experts at Kulzer – with many advantages over other printers:

- uses a high-quality photopolymer
- produces monochrome dental appliances and precise restorations
- faster and more economical

Quick & Easy

Thanks to a user-friendly interface, both beginners and experts in CAD/CAM can reap the benefits.

- One hour or less to print most restorations
- Simultaneous printing of multiple restorations
- Digital Light Projection (DLP) generates each layer in a single flash

Precise & accurate

The results of the cara Print 4.0 can be seen and felt immediately:

- smoother, more homogeneous surfaces.
- exceptional precision
- restorations can be positioned in almost any direction
- perfect fit

Economical

The cara Print 4.0 in-house manufacturing process reduces costs and time.

- Additive process reduces waste
- Long-lasting resin tray
- Refill system instead of cartridges



Technical details at a glance:

Polymerization technology	Digital Light Projection (HD DLP @ 405 nm)
Building area	103x58x130 mm
Resolution (X & Y-axes)	53.6 µm
Layer thickness (Z-axis resolution):	30–100 µm (varies by indication & speed vs. resolution needs)
Average build speed	50 mm/hour (@50 µm)
Min./Max. build speed	15–120 mm/hour
Average duration of 1 print cycle	<1 hour
Connectivity	WiFi, Ethernet or USB
Input format	open STL
CAD software compatibility	All CAD programs using open STL
CAM software	cara Print CAM, included with purchase
Printer dimensions	267x420x593 mm
Printer weight	21 kg
Non-curing resin trays	2 included with purchase

cara Print 4.0

A comprehensive, yet open digital workflow

The cara system for 3D printing works with open STL files commonly used by CAD programs, such as 3Shape. cara Print CAM software is included with the purchase of cara Print 4.0, so no hidden licensing fees!

Materials: dima Print

cara Print 4.0 will work with any resins that cure at 405 nm. dima Print materials, created with a deep knowledge of 3D printing, are especially designed to deliver perfect results.

Post-curing: HiLite® Power 3D

HiLite Power 3D, the high-performance light-polymerization unit can be used with all light-curing dental materials.

cara Service

Our experts ensure a quick learning curve and long-term support.

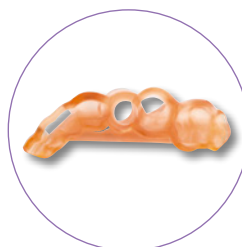
Overview of applications:



A night guard,
made with
dima Print Ortho



An individual impres-
sion tray, made with
dima Print Impression



A surgical drill guide,
made with
dima Print Guide



A dental model,
made with
dima Print Model



A CAD-to-cast structure,
made with
dima Print Cast

dima Print materials will be available for further indications, including:

- Temporary prosthetic restorations
- Permanent prosthetic restorations (e.g. crowns & bridges)
- Denture bases

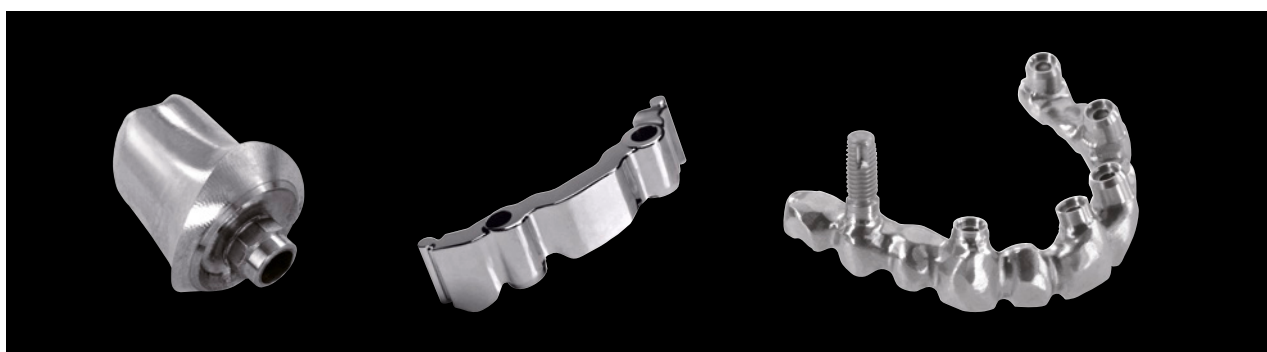
Learn more on our website:

www.kulzer.com/cara-print

cara Implant Prosthetics. The safe way to enhanced aesthetics.

Implantology and aesthetic dentistry are inseparable in dental prosthetics and dentistry. Just like the cara I-Products and the implant systems of your choice! The customised abutments and superstructures for high-quality dental restorations offer you the perfect conditions for taking your first steps in the growing world of implant prosthetics or expanding your market position.

The use of cara I-Products pays off for you. For example, the naturally shaped emergence profile and the individually designable abutment make it even easier for you to achieve first-class results. For maximum flexibility, the screw channel can even be angled on the cara I-Butment CoCr angled, cara I-Bridge angled and cara I-Bar angled. This offers you considerably more technical flexibility and also allows you to expand your range of services significantly. The secure, reliable direct screw connection means you do not need any more abutments for adjusting divergent implants. For you, that means fewer parts and work steps and thus increased cost-efficiency and time savings.



From left to right: one-piece cara I-Butment, cara I-Bar and cara I-Bridge with implant also made of titanium.

cara Warranty

As a technology pioneer, our company boasts much more experience than our imitators. In combination with state-of-the-art production processes and a professional quality assurance system, this allows us to offer you guarantees spanning up to 20-years¹ on cara I-products. The prosthetic solutions that offer you the greatest flexibility are thus also covered by the most comprehensive guarantee.



cara I-Solutions

The cara I-Products are available for a wide variety of implant systems². You can find more detailed information on which system is best suited to which indication in the continuously updated platform overviews at www.kulzer.com/cara

Manufacturer	
ANKYLOS®	Neoss®
ASTRA TECH Implant System®	Nobel Biocare®
Bego®	Osstem®
BioHorizons®	Straumann®
Biomet 3i™	Sweden&Martina
Bränemark System®	Thommen®
Bredent®	TRI®-Vent
Camlog® Implant System	XIVE®
Dentaurum tioLogic®	Zimmer Dental

¹ cara guarantees depending on material selection: cara I-Butment 5–10 years, cara I-Bridge 5–20 years, cara I-Bar 10 years.

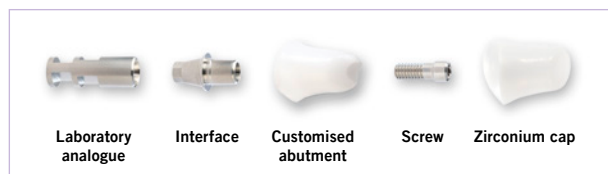
² The registered trademarks and company names are the property of the respective companies.

cara I-Butment®.

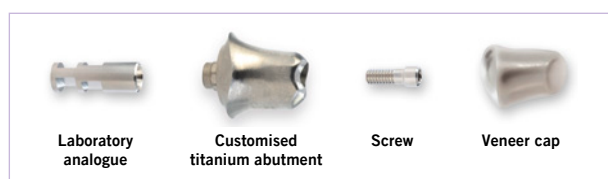
Customised abutments with a perfect fit.

Take advantage of the benefits of customised cara I-Butments in comparison with standard abutments. We guarantee you the highest quality, a perfect fit and accuracy to your specifications with CAD/CAM production. This allows you to adapt the cement margin to the gingival level. They not only look like real teeth but also reduce the risk of periimplantitis.

cara offers you the perfect abutment for every indication and aesthetic situation. You have the choice between two-piece abutments made of zirconium dioxide on a titanium interface and one-piece titanium or cobalt-chrome abutments. The naturally shaped emergence profile, the simple adjustment of divergent implants and the possibility of angling the abutment geometry by up to 25° with cara I-Butment Ti and CoCr are additional benefits.



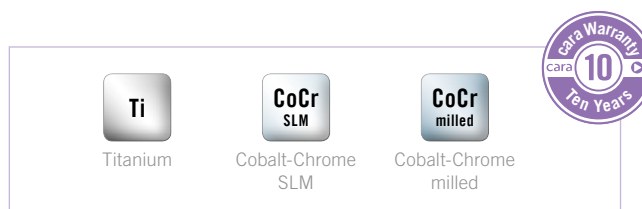
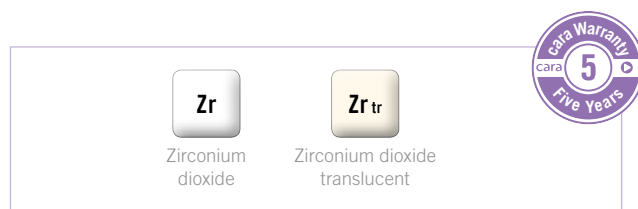
Two-piece zirconium abutment on titanium interface.



One-piece titanium and CoCr abutment.



cara I-Butment angled in Ti and CoCr with angled screw channel.



cara I-Butment CoCr angled with screw channel angled up to 25°.

2 CARA IMPLANT PROSTHETICS

2.8 CARA I-BRIDGE

cara I-Bridge®.

Flexibility with angled screw channels.

Our innovative prosthetics update speaks for itself! cara I-Bridge regular with straight screw channels and cara I-Bridge angled with angled screw channels are accurately produced and homogeneous implant bridges with an optimal fit. They offer increased safety thanks to stress-free bridges and the screw connection reduces the risk of periimplantitis. cara I-Bridge are produced with the latest CAD/CAM technology in our production centre in Hanau, Germany, and are available for all market-leading implants systems via the “cara I-Bridge New Connection”.

<div>Zr</div> <div>Zirconium dioxide</div> <div> </div>	<div>Ti</div> <div>Titanium</div> <div>CoCr SLM</div> <div>Cobalt-Chrome SLM</div> <div>CoCr milled</div> <div>Cobalt-Chrome milled</div> <div> </div>
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cara I-Bridge regular

The superstructure in the version with straight screw channels is available in cobalt-chrome and titanium. cara I-Bridge regular can be adapted with spacer sleeves or – if the implant is already well positioned – placed at implant level. The screw connection directly with the implant is not only exceptionally effective and cost-efficient, but also highly recommendable from an aesthetic perspective.



cara I-Bridge angled by Zahnkreation Wolfgang Sommer.

cara I-Bridge angled

Only cara has the original! cara I-Bridge angled is based on the patented production process with angled screw channels. It is an accurately produced implant bridge made of titanium or cobalt-chrome with the possibility of angling the screw channels by up to 25°. This ensures optimal positioning of the implant bridge without cost-intensive abutments and thus makes cara I-Bridge angled a cost-efficient and aesthetically pleasing solution.



cara I-Bridge angled:
up to 25° more flexible thanks to
the screw channel which can be angled.

IMPLANT PROSTHETICS

2.9 CARA I-BAR

cara I-Bar®.

Stress-free and accurate fit.

The cara I-Bar is our answer to your desire for a reliable primary structure for a dental restoration that can be removed under certain conditions. To ensure a stress-free fit, cara I-Bar is produced from a block of cobalt-chrome or titanium. The dental restoration is suitable for a wide range of indications and leading implant systems, can be individually designed and can be adjusted to reflect the natural contours of the gingiva. The CAD design process remains in your hands: simply use the standardised or custom-designed bar and adjust it to fit the patient. You can include a range of different types of attachments and are not limited by the number of implants per jaw.



cara I-Bar regular

The individually produced CAD/CAM bars already offer you a wide range of application possibilities in the cara I-Bar regular version. The bars can be screwed on any number of implants – on common implant systems and for every patient case.

cara I-Bar angled

All the knowledge of cara production is used to ensure an accurate fit and optimal precision. The patented possibility of angling the screw channel by up to 20° ensures longer-lasting friction surfaces and also offers you increased flexibility.



Bar work on six implants in the mandible.



The bar is divided into three parts for simpler cleaning.



The finished piece rotated laterally to the left.



The primary structure is optimally adjusted to the natural contours of the gingiva.

2 CARA IMPLANT PROSTHETICS

2.10 CARA YANTALOC

cara YantaLoc®.

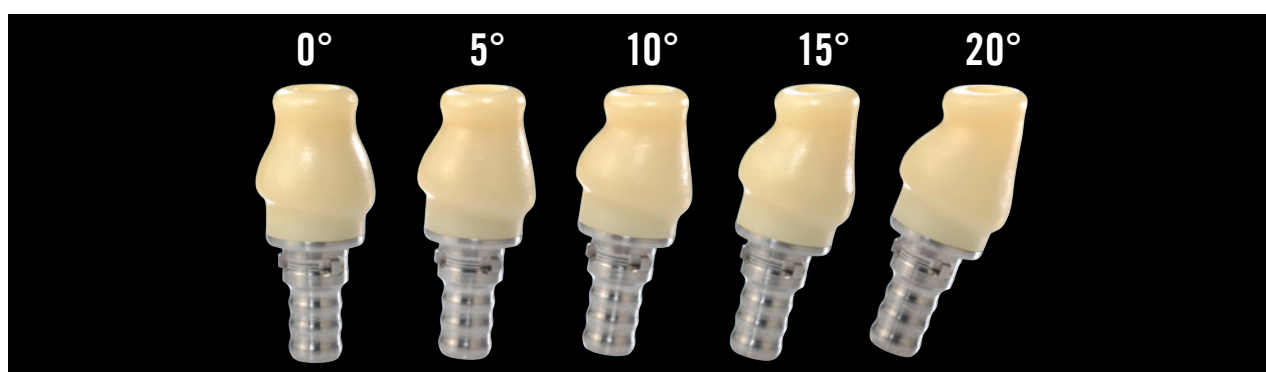
Stable grip for dental restorations.

Zr

Provide a stable grip and minimise the risk of periimplantitis: cara YantaLoc can do both! The patent-pending connection comprising of a screw retained Titanium base with an angled zirconium dioxide structure and an attachment function allows users to fix removable dental restorations to implants safely. The smooth zirconium dioxide surface prevents wear of the retention elements in the matrix: That makes regular replacement unnecessary and your patients can bite down hard for longer.

The structure is made of zirconium dioxide and offers excellent soft tissue integration and pseudoadhesion of the gingiva, less plaque and lower bacterial deposits than on metallic abutments. Alloy-triggered allergies can be ruled out with high performance ceramics. Cleaning is simple too: even with a regular toothbrush.

YantaLoc can be used on a wide range of standard implant systems. Thanks to five different angulations from straight to 20° and the slim construction, even difficult implant positions can be easily compensated. With their tooth-like colour, the ceramic structure creates a thoroughly aesthetic effect in the mouth.



Users can order cara YantaLoc in five different angulations up to 20°.



Comparison of the size of cara YantaLoc and cara YantaLoc LV:
The Low Version allows the height to be significantly reduced to a minimum of only 4.00 mm and a gingival margin of 1–2 mm instead of the previous 7.19 mm and 1–3 mm.



Bonding of the zirconia retainer on a titanium base and subsequent screw connection in the practice.

CROWN AND BRIDGE PROSTHETICS

2.11 CARA CROWNS, BRIDGES AND MORE

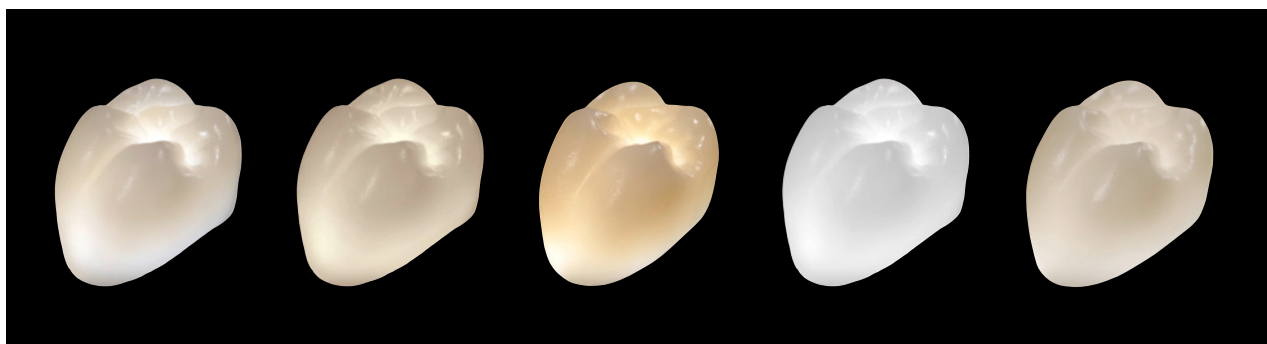
cara Crowns, Bridges and more.

Always the right material.

cara translucent zirconium dioxide

Zr_{tr}**Zr_{ML}**

The translucent zirconium dioxide from cara can be used to produce monolithic crowns and bridges constructions cost-effectively and to produce optically appealing frames for customised ceramic veneering. The extremely high translucency and tooth-coloured shading make the material a cost-effective alternative to non-precious metal all-cast crowns – especially in the posterior dental region. In combination with HeraCeram Universal stains in paste form and HeraCeram Zirkonia ceramics, you can produce aesthetic prostheses for every indication. cara 5-Year Warranty offers you and your patients additional security.



From left to right: cara translucent zirconium dioxide in transmitted light in the colour spectra light, medium and intensive as well as white WS and B-medium WS.

cara lithium disilicate

LiSi₂*

The cara lithium disilicate complements the all-ceramic product range for high-quality single-tooth restorations. The fact that they are made from the tried-and-tested IPS e.max® CAD blanks from Ivoclar Vivadent and the sophisticated and specially adapted grinding strategy ensures that you receive LiSi₂ in outstanding cara quality. The 3Shape DentalDesigner™ software allows you to design inlays and onlays as well as cutback and fully anatomical crowns simply and efficiently. You then receive the products you require back from the cara Production Centre in an uncrystallised state – and can personalise them as required.



From left to right: completed restoration, finished with HeraCeram Zirkonia 750 and Stains universal.

* cara LiSi₂ frames are made of well-proven IPS e.max® CAD blanks by Ivoclar Vivadent.

2 CARA

CROWN AND BRIDGE PROSTHETICS

2.11 CARA CROWNS, BRIDGES AND MORE

cara polymethyl methacrylate



Tried-and-tested quality from cara. The tooth-coloured polymethyl methacrylate acrylics in the two colours cara Temp PMMA light and cara Temp PMMA medium are ideal tools for laboratory fabricated temporary restorations. They can be designed simply and produced cost-effectively. The accurately fitting production makes them the first choice for long-term temporaries too. The residue-free, burn-out plastic cara Cast PMMA is exclusively approved for extraoral use and is perfect for the production of crowns and bridges using the press-to or casting techniques.



From left to right: cara temporary restorations in the colours PMMA light and PMMA medium.

cara cobalt-chrome



Save yourself extensive reworking! cara cobalt-chrome alloys are ceramic bonding alloys which are free from beryllium and cadmium and with which you can produce a smooth, ready-to-veneer frame with no trouble at all. The CoCr frameworks manufactured with the selected laser melting (SLM) additive production process are as homogeneous and accurately fitting as perfectly cast non-precious metal crowns and bridges. The layered build up offers maximum design freedom and allows precise fabrication of delicate structures. The subtractive milling process for framework structures, telescopes and fully anatomic units is characterised by its extremely smooth surfaces. 10-year cara guarantees are included with both versions.



Excellent fit (CoCr SLM).



Very smooth and shiny surface (CoCr milled).

cara has a lot more to offer you!

Find out more about your possibilities on our website.
Or contact our local sales representatives in your country.

kulzer.com/cara



3 DIMA

CHOOSE QUALITY AND GET THE BEST RESULTS.

DIMA MATERIAL — AS IF IT WAS MADE FOR YOU.

dima represents a comprehensive range of CAD/CAM discs for high quality dental restorations. Manufactured using the most modern production processes, such as, for example, isostatic press processes, we offer materials that set new standards in terms of dimensional stability, milling properties, accuracy of fit and indication variety, as well as from aesthetic aspects.

Based on our several years of know-how in central machine-based material processing, we present you with the dima programme CAD/CAM discs with outstanding processing and material properties and proven service surrounding our products for digital finishing.

Kulzer combined its longstanding materials expertise with deep knowledge of 3D printing to create dima Print materials. The materials and 3D printing process are perfectly matched to ensure the best results.

3 DIMA MATERIAL

3.1	ZIRCONIUM DIOXIDE	PAGE 30
3.2	PMMA	PAGE 36
3.3	WAX	PAGE 37
3.4	COBALT CHROME	PAGE 37
3.5	VENEERING CERAMICS, MILLING MACHINES AND ACCESSORIES	PAGE 38
3.6	3D PRINT RESINS	PAGE 39



dima®

Top quality for the best results.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

3 DIMA MATERIAL

3.1 ZIRCONIUM DIOXIDE

dima Mill Zirconia Multilayer (ML)

Better results, less finishing work.

The multichrome structure of dima Mill Zirconia ML enables dental technicians achieve natural shading results which can be varied according to where the restoration is positioned within the disc. It is a real highlight offering key advantages in terms of processing and aesthetics.

A nuance more beautiful.

- Multilayer zirconia for maximum authenticity from the dentine core to the incisal edge
- Outstanding translucence and natural shade gradient
- 4 seamlessly integrated colour layers
- 3 highly translucent shades: Shade A, B and C (This gives users the option of reliable and direct use of the V-shades, A1–A3, B1–B3 and C1–C3)
- Matched to HeraCeram ceramics and stain shades for the perfect finish

A nuance more efficient.

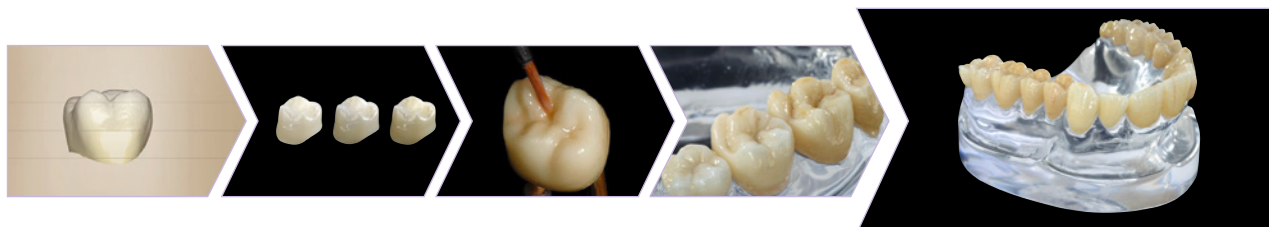
- Improved aesthetics with less time and expense
- Flexible control of the shade gradient by height positioning during nesting
- Enamelling in the posterior region is generally sufficient and in many cases additional colouring is no longer required.
- Highest fitting accuracy and tool-sparing processing with high edge stability

A nuance easier.

- Crowns and bridges are almost ready after sintering
- Homogeneous structural density for maximum and torsion-free control of sintering shrinkage
- Work results in reliable quality
- Obtain excellent results even without extensive customisation

Indications

- Individual crowns and bridges with up to 16 units
- Inlays, onlays and veneers
- Height: 18 mm and soon also 22 mm



Innovative on principle.

dima Mill Zirconia ML now takes dental aesthetics and efficiency to an even higher level. The multichrome and highly translucent multilayer material with four seamlessly integrated colour layers shows a natural gradient that makes your restorations appear absolutely authentic. At the same time the finishing work is reduced to a minimum or can even be eliminated completely.

dima Mill Zirconia ML is suitable for cara milling solutions and all standard milling machines with Ø 98.5 mm format, also like the **cara Mill 2.5, 3.5 , 3.5 Pro, 3.5L and 3.5L Pro**.



dima Mill Zirconia ML

Delivery form	Art. code
dima Mill Zirconia ML Shade A	
dima Mill Zirconia ML 18 mm, Shade A	6606 5511
dima Mill Zirconia ML 22 mm, Shade A	6606 6854
dima Mill Zirconia ML Shade B	
dima Mill Zirconia ML 18 mm, Shade B	6606 5512
dima Mill Zirconia ML 22 mm, Shade B	6606 6855
dima Mill Zirconia ML Shade C	
dima Mill Zirconia ML 18 mm, Shade C	6606 5513
dima Mill Zirconia ML 22 mm, Shade C	6606 6856

3 DIMA MATERIAL

3.1 ZIRCONIUM DIOXIDE



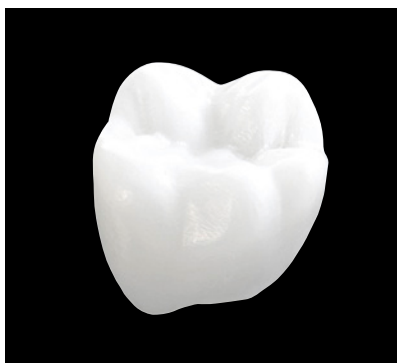
High reliability in terms of processes.

Zirconia is a material that has stood the test of time. dima Mill Zirconia, however, has the added benefit of meeting the high quality standards that Kulzer sets for its materials.

dima Mill Zirconia offers outstanding milling, high edge stability and simple processing, along with the assurance that it will not damage your machine tools. The homogeneous structural density of the dima Mill discs ensures maximum control and zero torsion when sintering.

dima Mill Zirconia ST – proven solution with natural optics

dima Mill Zirconia ST (semi-translucent) has only slight translucency. In terms of aesthetic aspects, dima Mill Zirconia ST is used everywhere where translucency is not desired or required. It is available in shades white, B light and A intensive.



ZIRCONIUM DIOXIDE SEMI-TRANSLUCENT

dima Mill Zirconia ST white

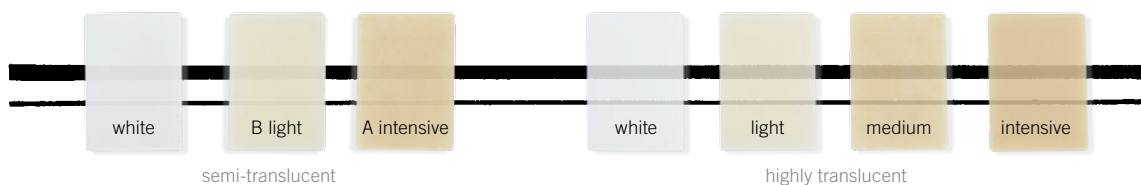
Size and Colour	Art. code
99 x 10 white	6606 4113
99 x 14 white	6606 4114
99 x 18 white	6606 4115
99 x 25 white	6606 4116

dima Mill Zirconia ST A intensive

Size and Colour	Art. code
99 x 10 A intensive	6606 4161
99 x 14 A intensive	6606 4162
99 x 18 A intensive	6606 4163
99 x 25 A intensive	6606 4164

dima Mill Zirconia ST B light

Size and Colour	Art. code
99 x 10 B light	6606 4117
99 x 14 B light	6606 4118
99 x 18 B light	6606 4119
99 x 25 B light	6606 4120



dima Mill Zirconia HT – a beautiful and strong material

Benefit in several ways. dima Mill Zirconia HT (highly translucent) is your first choice for economical manufacture of monolithic crown and bridge constructions as well as optically demanding frameworks for ceramic veneering. The high translucency and specific shading impress with results that appear especially natural. That makes this material into an outstanding alternative to non-precious metal crowns – not only in the posterior regions. dima Mill Zirconia highly translucent is available in the shades white, light, medium and intensive.

Indications

- Crowns and bridges up to 16 units
- Full anatomic, monolithic zirconia dioxide crowns and frameworks
- Primary components for telescopic and tapered crowns
- Inlays, onlays and veneers
- Two-piece abutments
- 4 different heights: 10mm, 14 mm, 18 mm and 25 mm

16 Shades
available

dima Mill Zirconia HT & HTE – Your art makes it perfect

dima Zirconia is now available in 16 shades (and also one bleach & one white). These shades were created to imitate the natural tone of natural dentine – the perfect base for ceramic restorations. dima Mill Zirconia HT offers the perfect dentine base for high quality and aesthetic ceramic veneering. dima Mill Zirconia HTE offers extra translucence for brilliant monolithics or ceramic veneers that seem to glow from within.

When combined with your skill in ceramic layering, staining and glazing, dima Mill Zirconia HT and HTE offer cost-effective and time-saving options for natural-looking results, excellent aesthetics and satisfied patients.



ZIRCONIUM DIOXIDE HIGHLY TRANSLUCENT

dima Mill Zirconia HT white

Size and Colour	Art. code
HT 99 x 10 white	6606 4165
HT 99 x 14 white	6606 4166
HT 99 x 18 white	6606 4167
HT 99 x 25 white	6606 4168

dima Mill Zirconia HT light

Size and Colour	Art. code
HT 99 x 10 light	6606 4169
HT 99 x 14 light	6606 4170
HT 99 x 18 light	6606 4171
HT 99 x 25 light	6606 4172

dima Mill Zirconia HT medium

Size and Colour	Art. code
HT 99 x 10 medium	6606 4173
HT 99 x 14 medium	6606 4174
HT 99 x 18 medium	6606 4175
HT 99 x 25 medium	6606 4176

dima Mill Zirconia HT intensive

Size and Colour	Art. code
HT 99 x 10 intensive	6606 4177
HT 99 x 14 intensive	6606 4178
HT 99 x 18 intensive	6606 4179
HT 99 x 25 intensive	6606 4180



Achieve perfect, reliable sintering results with cara Sinterpearls.

3 DIMA

MATERIAL

3.1 ZIRCONIUM DIOXIDE

ZIRCONIUM DIOXIDE HIGHLY TRANSLUCENT

dima Mill Zirconia HT, A-shades

Size and Colour	Art. code
A1 99x10 mm	6607 0005
A1 99x14 mm	6607 0006
A1 99x18 mm	6607 0007
A1 99x25 mm	6607 0008
A2 99x10 mm	6607 0009
A2 99x14 mm	6607 0010
A2 99x18 mm	6607 0011
A2 99x25 mm	6607 0012
A3 99x10 mm	6607 0013
A3 99x14 mm	6607 0014
A3 99x18 mm	6607 0015
A3 99x25 mm	6607 0016
A3.5 99x10 mm	6607 0017
A3.5 99x14 mm	6607 0018
A3.5 99x18 mm	6607 0019
A3.5 99x25 mm	6607 0020
A4 99x10 mm	6607 0022
A4 99x14 mm	6607 0024
A4 99x18 mm	6607 0025
A4 99x25 mm	6607 0026

dima Mill Zirconia HT, B-shades

Size and Colour	Art. code
B1 99x10 mm	6607 0028
B1 99x14 mm	6607 0029
B1 99x18 mm	6607 0030
B1 99x25 mm	6607 0031
B2 99x10 mm	6607 0034
B2 99x14 mm	6607 0036
B2 99x18 mm	6607 0037
B2 99x25 mm	6607 0038
B3 99x10 mm	6607 0039
B3 99x14 mm	6607 0040
B3 99x18 mm	6607 0041
B3 99x25 mm	6607 0042
B4 99x10 mm	6607 0043
B4 99x14 mm	6607 0044
B4 99x18 mm	6607 0046
B4 99x25 mm	6607 0047

dima Mill Zirconia HT, C-shades

Size and Colour	Art. code
C1 99x10 mm	6607 0048
C1 99x14 mm	6607 0049
C1 99x18 mm	6607 0050
C1 99x25 mm	6607 0053
C2 99x10 mm	6607 0054
C2 99x14 mm	6607 0055
C2 99x18 mm	6607 0056
C2 99x25 mm	6607 0058
C3 99x10 mm	6607 0059
C3 99x14 mm	6607 0060
C3 99x18 mm	6607 0061
C3 99x25 mm	6607 0062
C4 99x10 mm	6607 0064
C4 99x14 mm	6607 0065
C4 99x18 mm	6607 0066
C4 99x25 mm	6607 0067

dima Mill Zirconia HT, D-shades

Size and Colour	Art. code
D2 99x10 mm	6607 0068
D2 99x14 mm	6607 0069
D2 99x18 mm	6607 0070
D2 99x25 mm	6607 0071
D3 99x10 mm	6607 0072
D3 99x14 mm	6607 0073
D4 99x10 mm	6607 0076
D4 99x14 mm	6607 0077
D4 99x18 mm	6607 0078
D4 99x25 mm	6607 0079

dima Mill Zirconia HT, bleach

Size and Colour	Art. code
bleach 99x10 mm	6607 6480
bleach 99x14 mm	6607 6481
bleach 99x18 mm	6607 6482
bleach 99x25 mm	6607 6483

dima Mill Zirconia HT, white

Size and Colour	Art. code
white 99x10 mm	6606 4165
white 99x14 mm	6606 4166
white 99x18 mm	6606 4167
white 99x25 mm	6606 4168

ZIRCONIUM DIOXIDE HIGHLY TRANSLUCENT ESTHETIC

dima Mill Zirconia HTE, A-shades

Size and Colour	Art. code
A1 99x10 mm	6607 0084
A1 99x14 mm	6607 0085
A1 99x18 mm	6607 0086
A1 99x25 mm	6607 0087
A2 99x10 mm	6607 0088
A2 99x14 mm	6607 0089
A2 99x18 mm	6607 0090
A2 99x25 mm	6607 0091
A3 99x10 mm	6607 0092
A3 99x14 mm	6607 0093
A3 99x18 mm	6607 0094
A3 99x25 mm	6607 0095
A3.5 99x10 mm	6607 0096
A3.5 99x14 mm	6607 0097
A3.5 99x18 mm	6607 0098
A3.5 99x25 mm	6607 0099
A4 99x10 mm	6607 0100
A4 99x14 mm	6607 0101
A4 99x18 mm	6607 0102
A4 99x25 mm	6607 0103

dima Mill Zirconia HTE, B-shades

Size and Colour	Art. code
B1 99x10 mm	6607 0104
B1 99x14 mm	6607 0105
B1 99x18 mm	6607 0106
B1 99x25 mm	6607 0107
B2 99x10 mm	6607 0108
B2 99x14 mm	6607 0109
B2 99x18 mm	6607 0110
B2 99x25 mm	6607 0111
B3 99x10 mm	6607 0112
B3 99x14 mm	6607 0113
B3 99x18 mm	6607 0114
B3 99x25 mm	6607 0115
B4 99x10 mm	6607 0116
B4 99x14 mm	6607 0117
B4 99x18 mm	6607 0118
B4 99x25 mm	6607 0119

dima Mill Zirconia HTE, C-shades

Size and Colour	Art. code
C1 99x10 mm	6607 0120
C1 99x14 mm	6607 0121
C1 99x18 mm	6607 0122
C1 99x25 mm	6607 0123
C2 99x10 mm	6607 0124
C2 99x14 mm	6607 0125
C2 99x18 mm	6607 0126
C2 99x25 mm	6607 0127
C3 99x10 mm	6607 0128
C3 99x14 mm	6607 0129
C3 99x18 mm	6607 0130
C3 99x25 mm	6607 0131
C4 99x10 mm	6607 0132
C4 99x14 mm	6607 0133
C4 99x18 mm	6607 0134
C4 99x25 mm	6607 0135

dima Mill Zirconia HTE, D-shades

Size and Colour	Art. code
D2 99x10 mm	6607 0136
D2 99x14 mm	6607 0137
D2 99x18 mm	6607 0138
D2 99x25 mm	6607 0139
D3 99x10 mm	6607 0140
D3 99x14 mm	6607 0141
D3 99x18 mm	6607 0142
D3 99x25 mm	6607 0143
D4 99x10 mm	6607 0144
D4 99x14 mm	6607 0145
D4 99x18 mm	6607 0146
D4 99x25 mm	6607 0147

dima Mill Zirconia HTE, bleach

Size and Colour	Art. code
bleach 99x10 mm	6607 6484
bleach 99x14 mm	6607 6485
bleach 99x18 mm	6607 6486
bleach 99x25 mm	6607 6487

dima Mill Zirconia HTE, white

Size and Colour	Art. code
white 99x10 mm	6606 4181
white 99x14 mm	6606 4182
white 99x18 mm	6606 4183
white 99x25 mm	6606 4184

3 DIMA MATERIAL

3.2 PMMA



dima Mill temp

Size and Colour	Art. code
99-16 A1	6606 4122
99-20 A1	6606 4124
99-16 A2	6606 4095
99-20 A2	6606 4096
99-16 A3	6606 4097
99-20 A3	6606 4098
99-16 A3,5	6606 4099
99-20 A3,5	6606 4100
99-16 B2	6606 4143
99-20 B2	6606 4144
99-16 B3	6606 4145
99-20 B3	6606 4146
99-16 C2	6606 4147
99-20 C2	6606 4148
99-16 D2	6606 4149
99-20 D2	6606 4150
99-16 clear	6606 4151
99-20 clear	6606 4152

Best brand quality from Kulzer.

With the highly cross-linked polymethyl methacrylate (PMMA) you can easily combine precise processing with outstanding material properties. Excellent milling behaviour, high stability and good polishing properties made dima Mill temp a first-class choice for laboratory fabricated temporary restorations and splints. dima Mill temp is available in the eight colours A1, A2, A3, A3.5, B2, B3, C2, D2 and clear.

Indications

- Crowns and bridges and primary telescopes for temporary treatments as well as for pouring and press techniques
- Splints for therapeutic treatment and functional diagnostics as well as drilling templates
- Heights: 16 mm and 20 mm



3.3 WAX

Quick, accurate and replicable results

dima Mill Wax is a CAD/CAM milling wax suitable for all standard milling machines with Ø 98.5 mm format, such as the cara Mill. These high-end wax blanks are easy to mill without lubrication and deliver clean, smooth-as-glass results – with no smearing or melting.

dima Mill Wax blanks ensure accurate and replicable results that save time when compared to manual design. The strong yet malleable wax offers precise results for casting and (over-) pressing*, and burns out without residue.

Advantages at a glance:

- Excellent and easy millability
- Glass-smooth, smear-proof & bubble-free
- Burns out with no residue
- For casting and pressing/overpressing*
- Available in blue, green and grey and in three different heights depending on colour



Suitable for following restorations:

- Inlays, onlays, single crowns, multi-unit bridges of up to 16 units, abutments, partial dentures**, wax-ups, model castings

* Only dima Mill Wax blue and grey are recommended for pressing/overpressing.

** We recommend using green for partial dentures due to its elastic property.

3.4 COBALT CHROME

Restorations to last a lifetime

Cobalt chrome (CoCr) is an extremely resistant and durable material covering a wide range of indications. The combination of hardness and elasticity means that dima Mill CoCr solid can reliably deliver excellent and precise milling results that last a lifetime. Even very thin and complex structures – such as bridges or abutments – are no problem.

Advantages at a glance:

- Easy millability and processing
- Homogeneous material structure
- Save time due to reduced need for polishing and no post-sintering
- Tested, excellent ceramic bonding and veneering, e.g. with Signum and HeraCeram
- Consistent quality and extremely good mechanical properties (see Material properties)
- Alloy type 4 for a wide range of indications

Suitable for following restorations:

- Crowns and bridges with up to 16 units
- Full anatomical or for veneering
- Inlay/onlays
- Primary/secondary telescopes
- Attachments, abutments, bars, implant structures



Wax Material-Discs

Size and Colour	Art. code
dima Mill Wax blue	
dima Mill Wax 99x14 mm blue	6606 9191
dima Mill Wax 99x20 mm blue	6606 9192
dima Mill Wax green	
dima Mill Wax 99x20 mm green	6606 9194
dima Mill Wax 99x25 mm green	6606 9197
dima Mill Wax grey	
dima Mill Wax 99x14 mm grey	6606 9198
dima Mill Wax 99x20 mm grey	6606 9199

dima Mill CoCr solid-Discs

Size and Colour	Art. code
dima Mill CoCr solid	
dima Mill CoCr solid 99x08 mm	6607 0827
dima Mill CoCr solid 99x10 mm	6606 9997
dima Mill CoCr solid 99x12 mm	6606 9998
dima Mill CoCr solid 99x13.5 mm	6606 9999
dima Mill CoCr solid 99x15 mm	6607 0000
dima Mill CoCr solid 99x18 mm	6607 0001
dima Mill CoCr solid 99x20 mm	6607 0828
dima Mill CoCr solid 99x12 mm S*	6607 5367
dima Mill CoCr solid 99x13.5 mm S*	6607 5368
dima Mill CoCr solid 99x15 mm S*	6607 5369
dima Mill CoCr solid 99x18 mm S*	6607 5370
dima Mill CoCr solid 99x20 mm S*	6607 5372

* Discs without shoulder/10mm step

3 DIMA MATERIAL

3.5 VENEERING CERAMICS, MILLING MACHINES AND ACCESSORIES

The Kulzer programme with that little something extra.

HeraCeram Stains universal

Content	Art. code
HeraCeram Stains-Set universal	6605 2534
HeraCeram Stains-Set universal, powder	6605 8215

HeraCeram Stains

Impressive aesthetics with the staining technique. HeraCeram Stains universal and Stains universal powder are ready-to-use stains in paste or powder form for all ceramic lines from Kulzer that cover all indications for ceramic stains.

HeraCeram Zirkonia 750

HeraCeram Zirkonia 750 stands out with its unique and revolutionary adhesive, ultrafine particle size, highly extended gingival range, and increased shade selection. It has all the aesthetic and professional resources you need to recreate nature on all-ceramic frames.



In-house milling solutions

With three different mill options from Kulzer – cara Mill 2.5, cara Mill 3.5 and cara Mill 3.5L – labs of all sizes can benefit by keeping their manufacturing business in-house. Labs producing a small to medium amount of restorations with materials like zirconia, PMMA, wax or glass ceramics (excluding hard metals) will get the most benefit from cara Mill 2.5. Larger laboratories and labs with a broad material portfolio, however, might choose to procure a more powerful cara Mill 3.5 or 3.5L (including a loader for up to 12 discs).

Further milling solutions:

cara Mill CAM: Manufacturer-independent CAM systems ranging from beginner to experienced professional editions

cara Mill Sinter: High-temperature furnace with short sinter cycles of up to 1,530 °C (1,560°C optional)

cara Mill Vac eco+: high-performance and low-noise extraction unit

External milling support

In times of high-production levels, during a transition phase or just as a back-up, clients can also turn to the cara Production centre, where all the latest production techniques are used.

- **cara Mill 2.5:** compact solution for soft materials for 98.5mm discs and blocks
- **cara Mill 3.5:** for hard and soft materials for 98.5mm discs and blocks
- **cara Mill 3.5L:** for hard and soft materials, with integrated disc loader, for 98.5mm discs and blocks
- **cara Mill CAM 4 & 5:** open and manufacturer-independent CAM system for beginner and professionals.
- **cara Mill Sinter:** Dekema® high-temperature furnace with short sinter cycles of up to 1,530 °C (1,560 °C optional)
- **cara Mill Vac eco+:** high-performance and low-noise extraction unit
- **cara AS Mill Cut:** Milling and grinding tools with long durability for the highest standards of craftsmanship

For further Information about cara milling Solutions please also take a look on page 16 and www.kulzer.com/cara-mill



3.6 3D PRINT RESINS

dima Print materials: fine-tuned 3D printing resins

dima Print

Content	Art. code
dima Print Ortho 1000 g (for splints/ nightguards)	6606 9096
dima Print Impression blue 1000 g (for impression trays)	6606 9098
dima Print Guide 1000 g (for surgical drilling guides)	6606 9099
dima Print Model 1000 g (for Models)	6606 9100
dima Print Cast 1000 g (for casting)	6606 9101

dima Print materials are light-curing monomeric liquids specially optimized for 3D printing and the requirements of dental applications. When used together with cara Print 4.0 and the HiLite Power 3D post-curing unit, technicians benefit from a comprehensive 3D-printing system designed for speed, reliability and value for money.



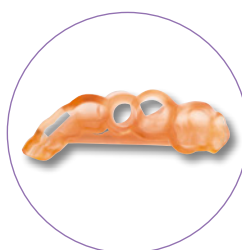
Overview of applications:



A night guard,
made with
dima Print Ortho



An individual impres-
sion tray, made with
dima Print Impression



A surgical drill guide,
made with
dima Print Guide



A dental model,
made with
dima Print Model



A CAD-to-cast structure,
made with
dima Print Cast

dima Print materials will be available for further indications, including:

- Temporary prosthetic restorations
- Permanent prosthetic restorations (e.g. crowns & bridges)
- Denture bases

For further Information about cara Print 4.0 please also take a look on page 18 and www.kulzer.com/cara-print



HERACERAM CERAMICS — SIMPLY PERFECT.

Our goal is to give you all of the tools necessary for you to create the perfect ceramic restoration. That is why our ceramic range has been specifically designed with you in mind. In terms of optical and technical properties we have every angle covered so that you can create your very own masterpiece.

Inspired by science, HeraCeram is a totally flexible range of ceramic that provides you and your patient with a perfect aesthetic solution. Whether it ought to be classic A–D shades or a complex high end restoration, all can be achieved through simplified processes and techniques. For optical and technical perfection and for results that speak for themselves HeraCeram is your perfect choice.

4 HERACERAM CERAMICS

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4.3	HERACERAM ZIRKONIA 750 — FOR LITHIUM DISILICATE AND ZIRCONIUM DIOXIDE FRAMEWORKS	PAGE 64
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HeraCeram® Ceramics
Perfect for you.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

HERACERAM® — NATURAL AESTHETICS EVERY TIME.

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 offers consistent processing and high end 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

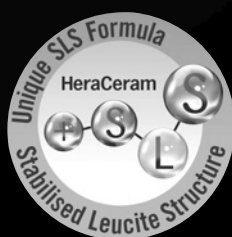
with a stabilised
leucite structure (SLS)

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.

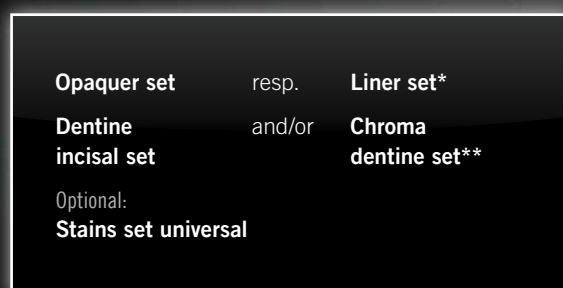


CERAMIC FOR ALL THAT YOU DO — PERFECT FRAMEWORKS FOR ALL REQUIREMENTS.

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 your preferred framework material. A great help if you are running a busy dental laboratory.

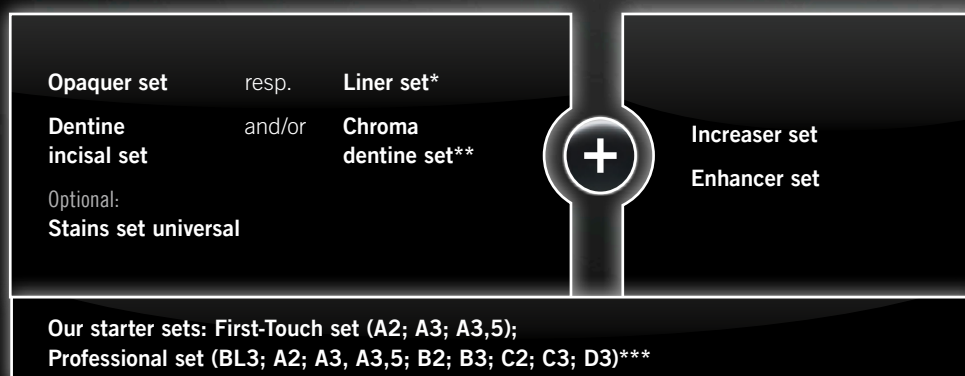
EVERY DAY A–D SHADES

Reliable reproduction
of classic A–D shades



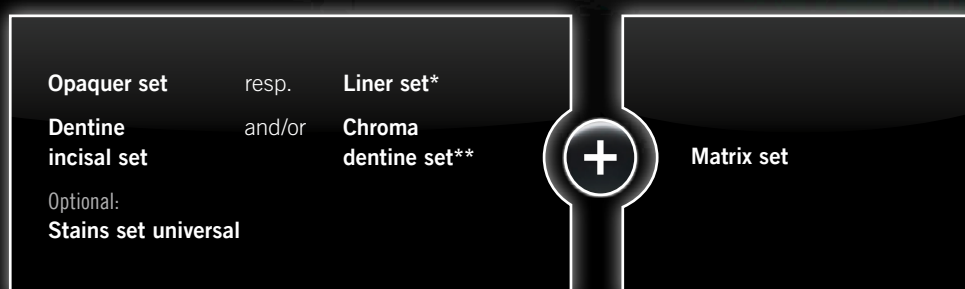
PERSONALISED

Patient specific
shade adjustment



MATRIX

Truly natural for highly
individualised restoration



SPECIAL

Special applications



* only HeraCeram Zirkonia

** only HeraCeram Zirkonia 750

*** not available for HeraCeram Zirkonia 750

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 $\mu\text{m/mK}$.



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heraCeram®

FOR ZIRCONIUM DIOXIDE FRAMEWORKS

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



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heraCeram®
Zirkonia

FOR LITHIUM DISILICATE AND ZIRCONIUM DIOXIDE FRAMEWORKS

HeraCeram Zirkonia 750 is designed for two framework materials, Lithium disilicate and zirconium dioxide. Its lower firing temperature guarantees a safe treatment of both structures and frameworks.



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heraCeram®
Zirkonia 750

4 HERACERAM® VENEERING CERAMICS

4.1 HERACERAM – FOR CONVENTIONAL BONDING ALLOYS

HERACERAM – HIGH FUSING VENEERING CERAMICS

HeraCeram is a high fusing veneering ceramic for bonding alloys with a CTE ranging from 13.5–14.9 $\mu\text{m/mK}$. As a result of the low firing temperature of max. 880°C, all alloys can be reliably processed in this CTE range.

For an aesthetic appearance, HeraCeram offers opaquer, dentine and incisal materials that are precisely adapted to one another, as well as a comprehensive range of customised materials that ensure reliable shade results even if thin layers are used. The stability of these materials combined with a low level of shrinkage during firing ensures that the restoration does not lose its shape. Thanks to its dense, extremely smooth surface, HeraCeram protects the antagonist, ensuring strong resistance to plaque and a gingiva-friendly environment.

- **VERSATILE** – HeraCeram covers a wide range of alloys for all indications, including implant supported superstructures
- **RELIABLE** – firing temperatures of max. 880°C ensure exceptionally reliable and consistent processing, particularly for alloys with a low solidus point (1050°C)
- **EFFICIENT** – extremely short firing times (dentine firing <10 minutes); identical firing with HeraCeram Zirkonia



HERACERAM

First-Touch set

Contents	
1 x 2 ml	NP-Primer
3 x 2 ml	Paste opaquer PO A2; PO A3; PO A3,5
3 x 20 g	Dentine D A2; D A3; D A3,5
3 x 20 g	Increaser IN A2; IN A3; IN A3,5
2 x 20 g	Incisal S1; S2
2 x 20 g	Enhancer EH A; EH neutral
1 x 20 g	Mask MA bright
2 x 20 g	Opal material OS 2; OT 2
1 x 20 g	Margin LM 2
1 x 1 ml	Paste opaquer liquid POL
1 x 25 ml	Modelling liquid ML
1 x	Paste opaquer brush PO
1 x	Modelling brush Toray
1 x	Shade guide
Art. Code	6604 6892

Professional set

Contents					
1 x 2 ml	NP-Primer	9 x 20 g	Dentine D BL3; D A2; D A3; D A3,5; D B2; D B3; D C2; D C3; D D3	6 x 20 g	Enhancer EH A; EH B; EH C; EH bright; EH neutral; EH grey
9 x 2 ml	Paste opaquer PO BL3-4; PO A2; PO A3; PO A3,5; PO B2; PO B3; PO C2; PO C3; PO D3	8 x 20 g	Increaser IN A2; IN A3; IN A3,5; IN B2; IN B3; IN C2; IN C3; IN D3	2 x 20 g	Mask MA bright; MA shadow
2 x 2 ml	Intensive paste opaquer gold; gingiva	4 x 20 g	Incisal S1; S2; S3; S BL	5 x 20 g	Margin HM 2; LM 1; LM 2; LM 4; LM6
7 x 2 ml	MF White; Ivory; Corn; Olive; Umbra; Mango; Polar	1 x 20 g	Transpa Clear	1 x 20 g	Correction material COR
1 x 2 ml	Glaze GL	1 x 25 ml	Modelling liquid ML	1 x 25 ml	Modelling liquid ML
1 x 1 ml	Paste opaquer liquid POL	1 x	Shade guide	1 x 25 ml	Margin liquid SM
1 x 2 ml	Stain liquid universal SLU			1 x 10 ml	Insulation F
1 x	Paste opaquer brush			1 x	Shade guide
1 x	Stain brush				
1 x	Shade guide				
Art. Code	6604 6893				

4 HERACERAM® VENEERING CERAMICS

4.1 HERACERAM – FOR CONVENTIONAL BONDING ALLOYS

HERACERAM

Paste opaquer set

Contents	
1x2 ml	NP-Primer
16x2 ml	Paste opaquer PO A1–PO D4
3x2 ml	Paste opaquer, intensive bleach; gold; gingiva
1x1 ml	Paste opaquer liquid POL
2x	Paste opaquer brush
1x	Shade guide
Art. Code	6604 6975

Dentine incisal set

Contents	
16x20 g	Dentine D A1–D D4
4x20 g	Incisal S1–S4
2x20 g	Transpa Clear; white
1x25 ml	Modelling liquid ML
1x	Shade guide
Art. Code	6604 6894

Increaser set

Contents	
16x20 g	Increaser IN A1–IN D4
6x20 g	Increaser IN S Solaris; IN P Peach; IN M Mango; IN O Orange; IN C Caramel; IN T Taiga
1x25 ml	Modelling liquid ML
1x	Shade guide
Art. Code	6604 6896

Enhancer set

Contents	
6x20 g	Enhancer EH A; EH B; EH C; EH bright; EH neutral; EH grey
2x20 g	Mask MA bright; MA shadow
5x20 g	Margin HM 2; LM 1; LM 2; LM 4; LM6
1x20 g	Correction material COR
1x25 ml	Modelling liquid ML
1x25 ml	Margin liquid SM
1x10 ml	Insulation F
1x	Shade guide
Art. Code	6604 6903

Matrix set

Contents	
3x20 g	Mamelon dentine MD 1–MD 3
2x20 g	Secondary dentine SD 1; SD 2
4x20 g	Value materials VL 1–VL 4
4x20 g	Opal incisal OS 1–OS 4
9x20 g	Opal transpa OT 1; OT 2; OT 5; OT 10; OT Y; OT A; OT B; OT G; OT Ice
1x25 ml	Modelling liquid ML
1x	Shade guide
Art. Code	6600 3297



HERACERAM

Gingiva set

Contents	
6x20g	Gingiva G 2; G 4; G 5; G 6; G 7; G 8
3x2ml	Stains Pink; Gingiva 7; Gingiva 8
1x25ml	Modelling liquid ML
1x2ml	Stains Liquid Universal SLU
1x10ml	Insolation F
1x	Shade guide
Art. Code	6605 5376

Margin set

Contents	
7x20g	Margin, high-fusing HM 1 – HM 7
7x20g	Margin, low-fusing LM 1 – LM 7
1x25ml	Modelling liquid ML
1x25ml	Margin liquid SM
1x10ml	Insulation F
1x	Shade guide
Art. Code	6600 3298

Stains set, universal

HeraCeram Stains universal are ready-to-use stains for all ceramic lines from Kulzer and allceramic crowns and bridges.

Contents	
16x2ml	Individual Stains
3x2ml	Body Stain BS-A; BS-B; BS-C
2x2ml	Enamels EN Pearl; EN Opal
1x2ml	Glaze GL
1x2ml	Stain liquid universal SLU
1x	Stain brush
1x	Glaze brush
1x	Shade guide
Art. Code	6605 2534

Stains set, universal powder

HeraCeram Stains universal powder for all ceramic lines from Kulzer and allceramic crowns and bridges.

Contents	
16x3g	Individual Stains
3x3g	Body Stain BS-A; BS-B; BS-C
2x3g	Enamels EN Pearl; EN Opal
1x3g	Glaze GL
1x2ml	Stain liquid universal SLU
1x	Stain brush
1x	Glaze brush
1x	Shade guide
Art. Code	6605 8215



4 HERACERAM® VENEERING CERAMICS

4.1 HERACERAM – FOR CONVENTIONAL BONDING ALLOYS

HERACERAM

NP-Primer, 2 ml
for processing HeraCeram on NPM
alloys

Art. Code	6604 4605
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Pre-Opaque, 2 ml
for processing HeraCeram on NPM
alloys

Art. Code	6600 8399
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Paste opaquer, 2 ml

Shades	Art. Code
PO A1	6600 3344
PO A2	6600 3345
PO A3	6600 3346
PO A3,5	6600 3347
PO A4	6600 3348
PO B1	6600 3349
PO B2	6600 3350
PO B3	6600 3351
PO B4	6600 3352
PO C1	6600 3353
PO C2	6600 3354
PO C3	6600 3355
PO C4	6600 3356
PO D2	6600 3357
PO D3	6600 3358
PO D4	6600 3359

Intensive opaquer, paste, 2 ml

Shades	Art. Code
bleach	6600 3360
gold	6600 3361
gingiva	6600 3362

Powder opaquer, 20 g

Shades	Art. Code
OA1	6600 3300
OA2	6600 3302
OA3	6600 3304
OA3,5	6600 3306
OA4	6600 3308
OB1	6600 3310
OB2	6600 3312
OB3	6600 3314
OB4	6600 3316
OC1	6600 3318
OC2	6600 3320
OC3	6600 3322
OC4	6600 3324
OD2	6600 3326
OD3	6600 3328
OD4	6600 3330

Intensive opaquer, powder, 20 g

Shades	Art. Code
bleach	6600 3332
gold	6600 3334
gingiva	6600 3336

Margin HM, 20 g

Shades	Art. Code
HM1	6600 3484
HM2	6600 3486
HM3	6600 3488
HM4	6600 3490
HM5	6600 3492
HM6	6600 3494
HM7	6600 3496

Margin LM, 20 g

Shades	Art. Code
LM1	6600 3498
LM2	6600 3500
LM3	6600 3502
LM4	6600 3504
LM5	6600 3506
LM6	6600 3508
LM7	6600 3510

Dentine, 20 g

Shades	Art. Code
DA1	6600 3366
DA2	6600 3368
DA3	6600 3370
DA3,5	6600 3372
DA4	6600 3374
DB1	6600 3376
DB2	6600 3378
DB3	6600 3380
DB4	6600 3382
DC1	6600 3384
DC2	6600 3386
DC3	6600 3388
DC4	6600 3390
DD2	6600 3392
DD3	6600 3394
DD4	6600 3396

Dentine, 100 g

Shades	Art. Code
DA1	6600 3367
DA2	6600 3369
DA3	6600 3371
DA3,5	6600 3373
DA4	6600 3375
DB1	6600 3377
DB2	6600 3379
DB3	6600 3381
DB4	6600 3383
DC1	6600 3385
DC2	6600 3387
DC3	6600 3389
DC4	6600 3391
DD2	6600 3393
DD3	6600 3395
DD4	6600 3397

Incisal, 20 g

Shades	Art. Code
S1	6600 3398
S2	6600 3400
S3	6600 3402
S4	6600 3404

Incisal, 100 g

Shades	Art. Code
S1	6600 3399
S2	6600 3401
S3	6600 3403
S4	6600 3405

Transparency, 20 g

Shades	Art. Code
T	6600 3406
Clear	6600 3412
White	6600 3410
Blue	6600 3408

Transparency, 100 g

Shades	Art. Code
Clear	6600 3413
T	6600 3407


Gingiva, 20 g

Shades	Art. Code
G	6600 3529
G2	6601 8479
G3	6601 8480
G4	6601 8491
G5	6601 8492
G6	6605 5372
G7	6605 5373
G8	6605 5374

Gingiva Stains, 2 ml

Shades	Art. Code
Pink	6605 2481
Gingiva 7	6605 5386
Gingiva 8	6605 5387

Correction, 20 g

Shades	Art. Code
COR	6600 3531

Glaze universal, 20 g

Art. Code	6605 2907
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Glaze universal, 2 ml

Art. Code	6605 2911
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Stains and Glaze see pages 49 and 54

4 HERACERAM® VENEERING CERAMICS

4.1 HERACERAM – FOR CONVENTIONAL BONDING ALLOYS

HERACERAM

Mamelon dentine, 20 g

Shades	Art. Code
MD1	6600 3440
MD2	6600 3442
MD3	6600 3444

Secondary dentine, 20 g

Shades	Art. Code
SD1	6600 3446
SD2	6600 3448

Value, 20 g

Shades	Art. Code
VL1	6600 3450
VL2	6600 3452
VL3	6600 3454
VL4	6600 3456

Opal material, 20 g

Shades	Art. Code
OS1	6600 3460
OS2	6600 3462
OS3	6600 3464
OS4	6600 3466
OT1	6600 3468
OT2	6600 3470
OT5	6600 3472
OT10	6600 3474
OTY	6600 3476
OTA	6600 3478
OTB	6600 3480
OTG	6600 3482
OTIce	6600 4097

Opal material, 100 g

Shades	Art. Code
OS1	6600 3461
OS2	6600 3463
OS3	6600 3465
OS4	6600 3467
OT1	6600 3469



HERACERAM

Increaser, 20 g

Shades	Art. Code
IN A1	6602 2181
IN A2	6602 1411
IN A3	6602 1412
IN A3,5	6602 1413
IN A4	6602 2182
IN B1	6602 2183
IN B2	6602 1414
IN B3	6602 1415
IN B4	6602 2184
IN C1	6602 2185
IN C2	6602 2186
IN C3	6602 2187
IN C4	6602 2188
IN D2	6602 2189
IN D3	6602 1416
IN D4	6602 2190
Caramel IN C	6601 3751
Mango IN M	6601 3753
Orange IN O	6601 3755
Peach IN P	6601 3757
Solaris IN S	6601 3759
Taiga IN T	6601 3761

Enhancer, 20 g

Shades	Art. Code
EHA	6603 3964
EHB	6603 3965
EHC	6603 3967
EH bright	6603 3969
EH neutral	6603 3970
EH grey	6603 3971

Mask, 20 g

Shades	Art. Code
MA bright	6603 3972
MA shadow	6603 3973

Bleach shade paste opaquer, 2 ml

Shades	Art. Code
Bleach PO BL1–2	6601 5584
Bleach PO BL3–4	6601 5582

Bleach shade dentine, 20 g

Shades	Art. Code
Bleach D BL1	6601 5589
Bleach D BL2	6601 5588
Bleach D BL3	6601 5586
Bleach D BL4	6601 5585

Bleach shade incisal, 20 g

Shades	Art. Code
Incisal S BL	6601 5590
Opal incisal OS BL	6601 5591

Bleach shade margin HM, 20 g

Shades	Art. Code
Bleach HM BL1–2	6601 5593
Bleach HM BL3–4	6601 5592

Bleach shade margin LM, 20 g

Shades	Art. Code
Bleach LM BL1–2	6601 5595
Bleach LM BL3–4	6601 5594

4 HERACERAM® VENEERING CERAMICS

4.1 HERACERAM – FOR CONVENTIONAL BONDING ALLOYS

HERACERAM

Stains universal powder, 3 g

HeraCeram Stains universal powder for all ceramic lines from Kulzer and all ceramic crowns and bridges.

Shades	Art. Code
Grey, 3 g	6605 8191
White, 3 g	6605 8192
Polar, 3 g	6605 8193
Smoke, 3 g	6605 8194
Ocean, 3 g	6605 8195
Pink, 3 g	6605 8196
Ivory, 3 g	6605 8197
Corn, 3 g	6605 8198
Sunset, 3 g	6605 8199
Caramel, 3 g	6605 8200
Mango, 3 g	6605 8201
Sienna, 3 g	6605 8202
Terra, 3 g	6605 8203
BS-A, 3 g	6605 8204
BS-B, 3 g	6605 8205
BS-C, 3 g	6605 8206
Olive, 3 g	6605 8207
Umbra, 3 g	6605 8208
Khaki, 3 g	6605 8209
Maroon, 3 g	6605 8210
EN Pearl, 3 g	6605 8211
EN Opal, 3 g	6605 8212

Stains universal, 2 ml

HeraCeram Stains universal are ready-to-use stains for all ceramic lines from Kulzer and all ceramic crowns and bridges.

Shades	Art. Code
Grey, 2 ml	6605 2471
White, 2 ml	6605 2472
Polar, 2 ml	6605 2473
Smoke, 2 ml	6605 2474
Ocean, 2 ml	6605 2475
Pink, 2 ml	6605 2481
Ivory, 2 ml	6605 2482
Corn, 2 ml	6605 2483
Sunset, 2 ml	6605 2484
Caramel, 2 ml	6605 2485
Mango, 2 ml	6605 2486
Sienna, 2 ml	6605 2487
Terra, 2 ml	6605 2488
BS-A, 2 ml	6605 2489
BS-B, 2 ml	6605 2490
BS-C, 2 ml	6605 2491
Olive, 2 ml	6605 2492
Umbra, 2 ml	6605 2493
Khaki, 2 ml	6605 2494
Maroon, 2 ml	6605 2495
EN Pearl, 2 ml	6605 2905
EN Opal, 2 ml	6605 2906

Glaze universal, 2 ml

Art. Code	6605 2911
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Glaze universal, 20 g

Art. Code	6605 2907
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4 HERACERAM® VENEERING CERAMICS

4.2 HERACERAM ZIRKONIA – FOR ZIRCONIUM DIOXIDE FRAMEWORKS

HERACERAM ZIRKONIA – VENEERING CERAMICS WITH CHIPPING PROTECTION

HeraCeram Zirkonia adhesive paste has been specifically developed with zirconium dioxide veneers in mind. It ensures maximum adhesion of the veneering ceramic to the zirconium dioxide framework without the need for unpredictable sandblasting of the delicate zirconium dioxide surface. An adhesive bake optimises moistening of the framework surface, cleans the framework and causes it to fluoresce for vibrant radiation of light from within.

HeraCeram Zirkonia liners provide the basic shading. A careful balance between chroma and opacity ensures that the framework surface is perfectly shaded without obstructing the transmission of light through the translucent zirconium dioxide framework.

- **PERFECT AESTHETICS** – synthetic quartz glass in its purest form provides HeraCeram Zirkonia with optical properties identical to reality
- **RELIABLE** – SLS protects HeraCeram Zirkonia against cracking and chipping and offers maximum reliability for zirconium dioxide veneers
- **EFFICIENT** – extremely short firing times (first dentine firing in just 10 minutes); identical firing with HeraCeram



HERACERAM ZIRKONIA

First-Touch set

Contents	
1x3ml	Zr-Adhesive neutral
3x2ml	Liner L A2; L A3; L A3,5
3x20g	Dentine D A2; D A3; D A3,5
3x20g	Increaser IN A2; IN A3; IN A3,5
2x20g	Incisal S1; S2
2x20g	Enhancer EH A; EH neutral
1x20g	Mask MA bright
2x20g	Opal material OS 2; OT 2
1x20g	Margin LM 2
1x1ml	Paste opaquer liquid POL
1x25ml	Modelling liquid ML
1x	Paste opaquer brush PO
1x	Modelling brush Toray
1x	Shade guide
Art. Code	6604 6906

Professional set

Contents					
1x3ml	Zr-Adhesive neutral	9x20g	Dentine D BL3; D A2; D A3; D A3,5; D B2; D B3; D C2; D C3; D D3	6x20g	Enhancer EH A; EH B; EH C; EH bright; EH neutral; EH grey
9x2ml	Liner L BL3-4; L A2; L A3; L A3,5; L B2; L B3; L C2; L C3; L D3	8x20g	Increaser IN A2; IN A3; IN A3,5; IN B2; IN B3; IN C2; IN C3; IN D3	2x20g	Mask MA bright; MA shadow
2x2ml	Liner, intensive gold; gingiva	4x20g	Incisal S1; S2; S3; S BL	5x20g	Margin HM 2; LM 1; LM 2; LM 4; LM 6
7x2ml	MF White; Ivory; Corn; Olive; Umbra; Mango; Polar	1x20g	Transpa Clear	1x20g	Correction material COR
1x2ml	Glaze GL	1x25ml	Modelling liquid ML	1x25ml	Margin liquid SM
1x1ml	Paste opaquer liquid POL	1x	Shade guide	1x10ml	Insulation
1x2ml	Stain liquid universal SLU			1x	Shade guide
1x	Paste opaquer brush				
1x	Stain brush				
1x	Shade guide				
Art. Code	6604 6907				

4 HERACERAM® VENEERING CERAMICS

4.2 HERACERAM ZIRKONIA – FOR ZIRCONIUM DIOXIDE FRAMEWORKS

HERACERAM ZIRKONIA

Dentine incisal set

Contents	
16x20g	Dentine D A1–D D4
4x20g	Incisal S1–S4
2x20g	Transpa Clear; White
1x25ml	Modelling liquid ML
1 x	Shade guide
Art. Code	6604 6908

Increaser set

Contents	
16x20g	Increaser IN A1–IN D4
6x20g	Increaser IN S Solaris; IN P Peach; IN M Mango; IN O Orange; IN C Caramel; IN T Taiga
1x25ml	Modelling liquid ML
1 x	Shade guide
Art. Code	6604 6909

Enhancer set

Contents	
6x20g	Enhancer EH A; EH B; EH C; EH bright; EH neutral; EH grey
2x20g	Mask MA bright; MA shadow
5x20g	Margin HM 2; LM 1; LM 2; LM 4; LM6
1x20g	Correction material COR
1x25ml	Modelling liquid ML
1x25ml	Margin liquid SM
1x10ml	Insulation
1 x	Shade guide
Art. Code	6604 6910

Matrix set

Contents	
3x20g	Mamelon dentine MD 1–MD 3
2x20g	Secondary dentine SD 1; SD 2
4x20g	Value materials VL 1–VL 4
4x20g	Opal incisal OS 1–OS 4
9x20g	Opal transpa OT 1; OT 2; OT 5; OT 10; OT Y; OT A; OT B; OT G; OTIce
1x25ml	Modelling liquid ML
1 x	Shade guide
Art. Code	6602 0163



HERACERAM ZIRKONIA

Gingiva set

Contents	
6x20g	Gingiva G 2; G 4; G 5; G 6; G 7; G 8
3x2ml	Stains Pink; Gingiva 7; Gingiva 8
1x25ml	Modelling liquid ML
1x2ml	Stains liquid universal SLU
1x10ml	Insulation F
1x	Shade guide
Art. Code	6605 5385

Margin set

Contents	
7x20g	Margin, high-fusing HM 1 – HM 7
7x20g	Margin, low-fusing LM 1 – LM 7
1x25ml	Modelling liquid ML
1x25ml	Margin liquid SM
1x10ml	Insulation F
1x	Shade guide
Art. Code	6602 0165

Stains and glaze see pages 49 and 54



4 HERACERAM® VENEERING CERAMICS

4.2 HERACERAM ZIRKONIA – FOR ZIRCONIUM DIOXIDE FRAMEWORKS

HERACERAM ZIRKONIA

Zr-Adhesive, 3 ml

Art. Code	6602 0166
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Zr-Adhesive, neutral, 3 ml

Art. Code	6603 9940
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Liner, 2 ml

Shades	Art. Code
LA1	6602 0167
LA2	6602 0168
LA3	6602 0169
LA3,5	6602 0170
LA4	6602 0171
LB1	6602 0172
LB2	6602 0173
LB3	6602 0174
LB4	6602 0175
LC1	6602 0176
LC2	6602 0177
LC3	6602 0178
LC4	6602 0179
LD2	6602 0180
LD3	6602 0181
LD4	6602 0401

Intensive liner, 2 ml

Shades	Art. Code
Bleach	6602 0182
Gold	6602 0183
Gingiva	6602 0184

Margin HM, 20 g

Shades	Art. Code
HM1	6602 0262
HM2	6602 0263
HM3	6602 0264
HM4	6602 0265
HM5	6602 0266
HM6	6602 0267
HM7	6602 0268

Margin LM, 20g

Shades	Art. Code
LM1	6602 0269
LM2	6602 0270
LM3	6602 0271
LM4	6602 0272
LM5	6602 0273
LM6	6602 0274
LM7	6602 0275

HERACERAM ZIRKONIA

Dentine, 20 g

Shades	Art. Code
DA1	6602 0188
DA2	6602 0189
DA3	6602 0190
DA3,5	6602 0191
DA4	6602 0192
DB1	6602 0193
DB2	6602 0194
DB3	6602 0195
DB4	6602 0196
DC1	6602 0197
DC2	6602 0198
DC3	6602 0199
DC4	6602 0200
DD2	6602 0201
DD3	6602 0202
DD4	6602 0203

Dentine, 100 g

Shades	Art. Code
DA1	6604 2081
DA2	6604 2082
DA3	6604 2083
DA3,5	6604 2084

Incisal, 20 g

Shades	Art. Code
S1	6602 0204
S2	6602 0205
S3	6602 0206
S4	6602 0207

Incisal, 100 g

Shades	Art. Code
S1	6604 2089
S2	6604 2090

Transparency, 20 g

Shades	Art. Code
T	6602 0209
Clear	6602 0208
White	6602 0210
Blue	6602 0211

Transparency, 100 g

Shades	Art. Code
Clear	6604 2093

Gingiva, 20 g

Shades	Art. Code
G	6602 0277
G2	6602 0278
G3	6602 0279
G4	6602 0280
G5	6602 0281
G6	6605 5381
G7	6605 5382
G8	6605 5383

Gingiva Stains, 2 ml

Shades	Art. Code
Pink	6605 2481
Gingiva 7	6605 5386
Gingiva 8	6605 5387

Correction, 20 g

Shades	Art. Code
COR	6602 0276

Stains and glaze see pages 49 and 54



4 HERACERAM® VENEERING CERAMICS

4.2 HERACERAM ZIRKONIA – FOR ZIRCONIUM DIOXIDE FRAMEWORKS

HERACERAM ZIRKONIA

Mamelon dentine, 20 g

Shades	Art. Code
MD1	6602 0240
MD2	6602 0241
MD3	6602 0242

Secondary dentine, 20 g

Shades	Art. Code
SD1	6602 0243
SD2	6602 0244

Value, 20 g

Shades	Art. Code
VL1	6602 0245
VL2	6602 0246
VL3	6602 0247
VL4	6602 0248

Opal incisal, 20 g

Shades	Art. Code
OS1	6602 0249
OS2	6602 0250
OS3	6602 0251
OS4	6602 0252

Opal incisal, 100 g

Shades	Art. Code
OS1	6604 2422
OS2	6604 2424

Opal transpa, 20 g

Shades	Art. Code
OT1	6602 0253
OT2	6602 0254
OT5	6602 0255
OT10	6602 0256
OTY	6602 0257
OTA	6602 0258
OTB	6602 0259
OTG	6602 0260
OTIce	6602 0261



HERACERAM ZIRKONIA

Increaser, 20 g

Shades	Art. Code
IN A1	6602 0212
IN A2	6602 0213
IN A3	6602 0214
IN A3,5	6602 0215
IN A4	6602 0216
IN B1	6602 0217
IN B2	6602 0218
IN B3	6602 0219
IN B4	6602 0220
IN C1	6602 0221
IN C2	6602 0222
IN C3	6602 0223
IN C4	6602 0224
IN D2	6602 0225
IN D3	6602 0226
IN D4	6602 0227
Mango IN M	6602 0228
Solaris IN S	6602 0229
Peach IN P	6602 0230
Orange IN O	6602 0231
Taiga IN T	6602 0232
Caramel IN C	6602 0233

Enhancer, 20 g

Shades	Art. Code
EHA	6603 6311
EHB	6603 6312
EHC	6603 6313
EH bright	6603 6315
EH neutral	6603 6316
EH grey	6603 6317

Mask, 20 g

Shades	Art. Code
MA bright	6603 6320
MA shadow	6603 6319

Bleach shade liner, 2 ml

Shades	Art. Code
Liner bleach L BL1–2	6602 1856
Liner bleach L BL3–4	6602 1855

Bleach shade dentine, 20 g

Shades	Art. Code
Bleach D BL1,	6602 1860
Bleach D BL2	6602 1859
Bleach D BL3,	6602 1858
Bleach D BL4,	6602 1857

Bleach shade incisal, 20 g

Shades	Art. Code
Incisal S BL	6602 1891
Opal incisal OS BL	6602 1892

Bleach shade Margin HM, 20 g

Shades	Art. Code
Bleach HM BL1–2	6602 1894
Bleach HM BL3–4	6602 1893

Bleach shade Margin LM, 20 g

Shades	Art. Code
Bleach LM BL1–2	6602 1896
Bleach LM BL3–4	6602 1895

Body Stains (BS) and Enamels (EN)
see page 48

Alternative Stains universal could be
used (pages 49 and 54)

4 HERACERAM® VENEERING CERAMICS

4.3 HERACERAM ZIRKONIA 750 – FOR LITHIUM DISILICATE AND ZIRCONIUM DIOXIDE FRAMEWORKS

HERACERAM ZIRKONIA 750 – OUR NEW ENHANCED CERAMIC FOR USE ON ZIRCONIA OXIDE AND LITHIUM SILICATE STRUCTURES AND FRAMEWORKS.

Combining the robustness and reliability of proven SLS technology, HeraCeram Zirkonia 750 is also perfectly adapted to the specific physical properties of Lithium Silicate making it your ideal material of choice.

With its new highly specialised adhesive, providing world beating bond strength, physical bonding is maximised at 750°C for Lithium Silicate and 800°C for Zirkonia.

HeraCeram Zirkonia 750 is fully aligned with our current ceramic portfolio which offers a wide range for choice and application of all types of ceramic restorations.

- **PERFECT AESTHETICS** – synthetic quartz glass in its purest form provides HeraCeram Zirkonia 750 with optimised optical properties.
- **RELIABLE** – SLS formulation protects HeraCeram Zirkonia 750 against cracking and chipping offering maximum reliability for zirconium dioxide and lithium disilicate restorations.
- **EFFICIENT** – One ceramic designed for two different framework materials.



HERACERAM ZIRKONIA 750

First-Touch-Set

Contents	
1x3ml	Adhesive 750
1x2ml	Body Stain BS-A
1x2ml	Glaze universal
3x20g	Dentine D A2; D A3; D A3,5
3x20g	Increaser IN A2; IN A3; IN A3,5
2x20g	Incisal S 1; S 2
2x20g	Enhancer EH A; EH neutral
1x20g	Mask MA bright
2x20g	Opal material OS 2; OT 2
1x20g	Correction material COR
1x1ml	Paste opaquer liquid POL
1x25ml	Modelling liquid ML
1x	Modelling brush, Toray
1x	Glaze brush
1x	Shade guide
Art. Code 6606 0702	

Dentine-Incisal-Set

Contents	
16x20g	Dentine D A1–D D4
4x20g	Incisal S 1–S 4
1x20g	Transpa Clear
1x3ml	Adhesive 750
1x25ml	Modelling liquid ML
1x	Shade guide
Art. Code 6606 0703	

Increaser-Set

Contents	
16x20g	Increaser IN A1–IN D4
6x20g	Increaser IN S Solaris; IN P Peach; IN M Mango; IN O Orange; IN C Caramel; IN T Taiga
1x25ml	Modelling liquid ML
1x	Shade guide
Art. Code 6606 0704	

Enhancer-Set

Contents	
6x20g	Enhancer EH A; EH B; EH C; EH bright; EH neutral; EH grey
2x20g	Mask MA bright; MA shadow
2x20g	Transpa T; white
2x20g	Gingiva G 5; G 6
1x20g	Margin LM 2
1x20g	Correction material COR
1x10ml	Isolation F
1x25ml	Modelling liquid ML
1x	Shade guide
Art. Code 6606 0705	

Matrix-Set

Contents	
3x20g	Mamelon dentine MD 1–MD 3
2x20g	Secondary dentine SD 1; SD 2
4x20g	Value material VL 1–VL 4
4x20g	Opal incisal OS 1–OS 4
9x20g	Opal transpa OT 1; OT 2; OT 5; OT 10; OT Yellow; OT Amber; OT Blue; OT Grey; OT Ice
1x25ml	Modelling liquid ML
1x	Shade guide
Art. Code 6606 0706	

Chroma dentine-Set

Contents	
16x20g	Chroma dentine CD A1–CD D4
4x20g	Incisal S 1–S 4
1x20g	Transpa Clear
1x3ml	Adhesive 750
1x25ml	Modelling liquid ML
1x	Shade guide
Art. Code 6606 7055	

Margin-Set

Contents	
5x20g	Margin HM 1; 2; 3; 4; 6
5x20g	Margin LM 1; 2; 3; 4; 6
1x20g	Correction material COR
1x25ml	Margin liquid SM
1x10ml	Insulation F
1x	Shade guide
Art. Code 6606 7061	

Gingiva-Set

Contents	
6x20g	Gingiva G2; G4; G5; G6; G7; G8
3x2ml	Stains universal pink; Gingiva 7; Gingiva 8
1x25ml	Modelling liquid ML
1x2ml	Stain Liquid universal SLU
1x10ml	Insulation F
1x	Shade guide
Art. Code 6606 7062	

4 HERACERAM® VENEERING CERAMICS

4.3 HERACERAM ZIRKONIA 750 – FOR LITHIUM DISILICATE AND ZIRCONIUM DIOXIDE FRAMEWORKS

Adhesive 750, 3 ml

Art. Code	6606 0707
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Dentine, 20 g

Shades	Art. Code
DA1	6606 0841
DA2	6606 0842
DA3	6606 0843
DA3,5	6606 0844
DA4	6606 0845
DB1	6606 0846
DB2	6606 0847
DB3	6606 0848
DB4	6606 0849
DC1	6606 0850
DC2	6606 0851
DC3	6606 0852
DC4	6606 0853
DD2	6606 0854
DD3	6606 0855
DD4	6606 0856

Dentine, 100 g

Shades	Art. Code
DA1	6607 5377
DA2	6607 5378
DA3	6607 5379
DA3,5	6607 5380

Margin HM, 20 g

Shades	Art. Code
HM1	6606 6849
HM2	6606 6850
HM3	6606 6851
HM4	6606 6852
HM6	6606 6853

Margin LM, 20 g

Shades	Art. Code
LM1	6606 6845
LM2	6606 0901
LM3	6606 6846
LM4	6606 6847
LM6	6606 6848

Chroma dentine, 20 g

Shades	Art. Code
CDA1	6606 7111
CDA2	6606 7112
CDA3	6606 7113
CDA3,5	6606 7114
CDA4	6606 7115
CDB1	6606 7116
CDB2	6606 7117
CDB3	6606 7118
CDB4	6606 7119
CDC1	6606 7120
CDC2	6606 7121
CDC3	6606 7122
CDC4	6606 7123
CDD2	6606 7124
CDD3	6606 7125
CDD4	6606 7126

Chroma dentine, 100 g

Shades	Art. Code
CDA1	6607 5393
CDA2	6607 5387
CDA3	6607 5388
CDA3,5	6607 5389

Incisal, 20 g

Shades	Art. Code
S1	6606 0857
S2	6606 0858
S3	6606 0859
S4	6606 0860

Incisal, 100 g

Shades	Art. Code
S1	6607 5381
S2	6607 5382
S3	6607 5383



Correction material, 20 g

Shades	Art. Code
COR	6606 0904

Increaser, 20 g

Shades	Art. Code
INA1	6606 0871
INA2	6606 0872
INA3	6606 0873
INA3,5	6606 0874
INA4	6606 0875
INB1	6606 0876
INB2	6606 0877
INB3	6606 0878
INB4	6606 0879
INC1	6606 0880
INC2	6606 0881
INC3	6606 0882
INC4	6606 0883
IND2	6606 0884
IND3	6606 0885
IND4	6606 0886
Mango INM	6606 0887
Solaris INS	6606 0888
Peach INP	6606 0889
Orange INO	6606 0890
Taiga INT	6606 0891
Caramel INC	6606 0892

Enhancer, 20 g

Shades	Art. Code
EHA	6606 0893
EHB	6606 0894
EHC	6606 0895
EH Bright	6606 0896
EH Neutral	6606 0897
EH Grey	6606 0898

Enhancer, 100 g

Shades	Art. Code
EHA	6607 5385
EH Neutral	6607 5386

Mask, 20 g

Shades	Art. Code
MA Bright	6606 0899
MA Shadow	6606 0900

Transparency, 20 g

Shades	Art. Code
TC (Clear)	6606 0861
T	6606 0862
White	6606 0863

Transparency, 100 g

Shades	Art. Code
TC (Clear)	6607 5384

Secondary dentine, 20 g

Shades	Art. Code
SD1	6606 0905
SD2	6606 0906

Mamelon dentine, 20 g

Shades	Art. Code
MD1	6606 0907
MD2	6606 0908
MD3	6606 0909

Value, 20 g

Shades	Art. Code
VL1	6606 0910
VL2	6606 0911
VL3	6606 0912
VL4	6606 0913

Opal incisal, 20 g

Shades	Art. Code
OS1	6606 0867
OS2	6606 0868
OS3	6606 0869
OS4	6606 0870

Opal incisal, 100 g

Shades	Art. Code
OS1	6607 5390
OS2	6607 5391

Opal transpa, 20 g

Shades	Art. Code
OT 1	6606 0921
OT 2	6606 0922
OT 5	6606 0923
OT 10	6606 0924
OT Y	6606 0925
OT A	6606 0926
OT B	6606 0927
OT G	6606 0928
OT Ice	6606 0929

Opal transpa, 100 g

Shades	Art. Code
OS1	6607 5392

Gingiva, 20 g

Shades	Art. Code
G2	6606 6841
G4	6606 6842
G5	6606 0902
G6	6606 0903
G7	6606 6843
G8	6606 6844

4 HERACERAM® VENEERING CERAMICS

4.4 ACCESSORIES FOR VENEERING CERAMICS

BRUSH

Paste opaquer brush

Art. Code 6600 4002



Modelling brush Toray

Art. Code 6600 4003



Modelling brush Kolinski

Art. Code 6600 4001



Stain brush

Art. Code 6600 4000



Glaze brush

Art. Code 6605 2542



SHADE GUIDES, LIQUIDS

Shade guides HeraCeram

Shades	Art. Code
Dentine-incisal	6604 6963
Increaser	6604 6964
Enhancer	6604 6962
Matrix	6600 4122
Margin	6600 4123
Bleach	6601 5636
Stains universal	6605 2528
Gingiva	6605 5375

Shade guides HeraCeram Zirkonia

Shades	Art. Code
Dentine-incisal	6604 6972
Increaser	6604 6973
Enhancer	6604 7169
Matrix	6604 7224
Margin	6604 7225
Bleach	6604 7232
Gingiva	6605 5384

Shade guides HeraCeram Zirkonia 750

Shades	Art. Code
First-Touch	6606 0741
Dentine-incisal	6606 0742
Increaser	6606 0743
Enhancer	6606 0744
Matrix	6606 0745
Chroma dentine	6606 7052
Margin	6606 7053
Gingiva	6606 7054

Opaquer liquid

	Art. Code
OL2, 25 ml	6600 3533
OL2, 250 ml	6600 3534

Paste opaquer liquid

	Art. Code
POL, 1 ml	6600 3537

Modelling liquid ML

	Art. Code
ML, 25 ml	6600 3539
ML, 250 ml	6600 3540

Modelling liquid MLS

	Art. Code
MLS, 25 ml	6600 3541
MLS, 250 ml	6600 3542

Margin liquid

	Art. Code
SM, 25 ml	6600 3543

Stain fluid

	Art. Code
MF, 20 ml	6600 3545
SLU, 2 ml	6605 2541
SLU, 20 ml	6605 5371

Insulation

	Art. Code
F, 10 ml	6605 5319



4 HERACERAM® VENEERING CERAMICS

4.5 HERACERAMPRESS – FOR ALL-CERAMIC RESTORATIONS

HERACERAMPRESS

Adhesive, 2 ml

Art. Code	6601 5818
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Transparency Incisal, 10 pieces

Art. Code	
PK-TS1	6601 5829
PK-TS2	6601 5830

Dentine, 5 pieces

Art. Code	
PK-A3,5	6601 5929

Dentine, 10 pieces

Art. Code	
PK-A2	6601 5820
PK-A3	6601 5821



4.6 HERACERAM – ACCESSORIES FOR PRESSABLE CERAMICS

ACCESSORIES FOR PRESSABLE CERAMICS

Heravest
Disposable press plunger

Delivery form	Art. Code
50 pieces	6604 3951

**Heravest Press**

Art. Code	6602 0402
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Investment materials see Page 256

HeraCeram
Investment ring set

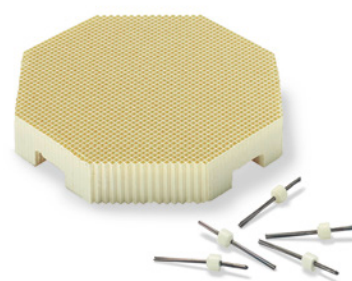
Delivery form	Art. Code
100 g	6601 7844
200 g	6601 6631

**HeraCeramPress**
Fan pin

Delivery form	Art. Code
5 pieces	6601 6420

**HeraCeramPress**
Tray

Art. Code	6601 6421
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FOR THE LOVE OF PERFECTION

IS IT CERAMIC OR IS IT A NATURAL TOOTH? IT'S SIGNUM!

You will be amazed to see that a composite can rival the aesthetic results and durability of high performance ceramics? New Signum can do just that, as micro-fine filler particles and a unique matrix formula work together to achieve aesthetic results comparable to nature. For long-lasting restorations and comfort!

Signum is a modular designed system made of universal and special veneering composites, colouring kits, tools and accessories resulting from Kulzer research. Each component of the Signum system is highly developed and specialised for its own range of application. And each individual component has been perfectly matched for interaction with the other Signum components, respectively. Enjoy the security of perfect restorations!

Thanks to the unique matrix formula, uniform aesthetics and layering will be one of your easiest tasks when using HeraCeram ceramics. Its ceramic-like properties ensure that the natural appearance of a Signum veneer lasts a long time. For satisfied customers and patients.

There are different paths to achieving perfect aesthetic results. Signum does not dictate the way but adapts to your methods. Liquid and pasty materials give you the freedom to follow your personal style. Signum is more than a composite: It is a world of masterful results.

5 VENEERING COMPOSITES

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Signum® Veneering Composites and Accessory Products
Freedom for your aesthetics.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

5.1 **VENEERING COMPOSITES****SIGNUM SETS****Signum composite first touch**

2-colour Signum composite starter set that includes matrix components for metal-supported indications.

Contents	
2x3g	Signum opaque F (OA3, OB3)
2x4g	Signum composite flow dentin (DA3, DB3)
1x4g	Signum composite dentin (DA3)
1x4g	Signum composite enamel (EM)
2x4g	Signum matrix (OS3, SD1)
1x4ml	Signum liquid
5x	Signum opaque F brush heads
1x	Signum stain brush
1x	Universal brush holder
20x	Cannules with caps 1.2 mm
1x	Instruction sheet
Art. Code	6604 4563

**Signum essentia**

9-colour set for metal-supported restorations e.g. for removable prosthetics with telescopic crowns and framework materials.

Advantages

- Rapid polishing
- Very low water absorption and solubility
- Comfortable chewing

Contents	
10x3g	Signum opaque F (OA1, OA2, OA3; OA3,5; OA4; OB2; OB3; OC3; OD3; OP)
9x4g	Signum composite dentine (DA1, DA2, DA3; DA3,5; DA4; DB2; DB3; DC3; DD3)
3x4g	Signum composite enamel (EL, EM, ED)
4x4g	Signum composite margin (M1 – M4)
1x4g	Signum composite effect ET1 transparent
1x4ml	Signum liquid
2x	Universal brush holder
25x	Signum opaque F brush heads
20x	Cannules with caps, 1.2 mm
Art. Code	6601 9673



SIGNUM SETS

Signum flow first touch

The flowable dentines complete the veneering system of Signum. They can be combined with Signum composite, Signum ceramis or can be used independently on metal based restorations. For adjusting the shades to be more individual. It can be mixed together with the Signum matrix flows.

Advantages

- Abrasion stability is comparable to the natural tooth
- Compatibility to all Signum components
- Free choose of the consistency you prefer
- Unique handling properties like the ceramic layering
- High flexibility at the working process

Contents	
2x4g	Signum composite flow dentin (DA2, DA3)
2x3g	Signum opaque F (OA2, OA3)
1x4g	Signum composite flow cervical (CV1)
1x4g	Signum matrix opal incisal (OS2)
2x4g	Signum matrix opal transparent (OTA (Amber), OTY (Yellow))
1x4ml	Signum liquid
5x	Signum opaque F brush heads
1x	Universal brush holder
1x	Signum stain brush
20x	Cannules with caps 1.2 mm
1x	mixing block, small
Art. Code 6605 2771	



Signum essentia flow set

Contents	
6x4 g	Signum composite flow dentin (DA2, DA3, DA3.5, DB3, DC3, DD3)
2x4 g	Signum composite flow cervical (CV1, CV2)
7x3 g	Signum opaque F (OA2, OA3, OA3.5, OB3, OC3, OD3, OR)
2x4 g	Signum matrix opal incisal (OS2, OS3)
1 x 4 ml	Signum liquid
25x	Signum opaque F brush heads
2x	Signum stain brush
1 x	Universal brush holder
30x	Cannules with caps 1.2 mm
1 x	Instruction card
1 x	mixing block, small
Art. Code 6604 9088	



5.1 VENEERING COMPOSITES

SIGNUM SETS

Signum ceramis first touch

2-colour Signum ceramis starter set that includes matrix components for metal-free indications (inlays, onlays, full crowns).

Contents	
2x4 g	Signum ceramis dentine (DA2, DA3)
1x4 g	Signum ceramis enamel (EL)
1x4 g	Signum matrix (OS2)
2x4 g	Signum ceramis effect ET4 transparent orange, ET5 transparent white
2x3 ml	Signum cre-active (maroon, T1)
1x4 ml	Signum liquid
1x	Signum stain brush
20x	Cannules with caps, 1.2 mm
1x	Instruction sheet
Art. Code	6604 5066

Signum ceramis

8-colour set for metal-free restorations (inlays, onlays, full crowns)

Advantages

- Compatible with Signum matrix and Signum cre-active
- Long-term abrasion resistance

Contents	
8x4 g	Signum ceramis dentine (DA2; DA3; DA3,5; DA4; DB2; DB3; DC3; DD3)
3x4 g	Signum ceramis enamel (EL, EM, ED)
5x4 g	Signum ceramis effect ET1 transparent ET2 transparent blue ET4 transparent orange ET5 transparent white
4x4 g	Signum ceramis margin (M1 – M4)
1x4 ml	Signum liquid
Art. Code	6602 2910



SIGNUM SETS

Signum matrix

Perfect finish with flow for restorations with and without metal

Signum matrix consists of flowable components that are compatible with Signum composite and Signum ceramis. With these materials, you can imitate natural effects, you are free to control the opalescence in the incisal area, the fluorescence of the veneer and much more for a perfect finish.

Advantages

- 1 : 1 HeraCeram Matrix aesthetics concept
- ideal combination of paste and flow
- Perfect control of opalescence, transparency and fluorescence



Contents	
3x4 g	Signum matrix mamelon dentine (MD1, MD2, MD3)
2x4 g	Signum matrix sekundär dentin (SD1, SD2)
4x4 g	Signum matrix value (VL1 – VL4)
4x4 g	Signum matrix opal enamel (OS1 – OS4)
9x4 g	Signum matrix opal transparent (OT1, OT2, OT5, OT10, OTA, OTB, OTG, OTY, OTice)
20x	Cannules with caps, 1.2 mm
1 x	Signum matrix shade guide
2x	Signum stain brush
Art. Code	6601 9675

Signum cre-active

For characterisation

Signum cre-active is the creative module for characterising and simulating prominent details such as white striations, enamel cracks, etc. This fits all any products in our range; naturally, it is 100 % compatible with Signum composite and Signum ceramis. Artificial teeth can also be modified with Signum cre-active.

Advantages

- Customised processing
- Can be combined and mixed with Signum matrix
- Also suitable for acrylic teeth in combination with Signum connector

Contents	
8x3g	Signum cre-active (white, polar, umbra, corn, mango, caramel, maroon, black)
2x3g	Signum cre-active transparent (T1, T2)
20x	Cannules with caps, 1.2 mm
5x	Cannules, 1.87 mm
1 x	Signum cre-active shade guide
2x	Signum stain brush
Art. Code	6603 3446



5.1 **VENEERING COMPOSITES****SIGNUM REFILLS****Signum opaque F**

Light curing fluorescent single-component. Signum opaque F is used for the colour masking of metal frames.

Delivery form: 1 x 3 g

Colours	Art. Code
OA1	6602 0066
OA2	6602 0067
OA3	6602 0068
OA3,5	6602 0069
OA4	6602 0070
OB1	6602 0071
OB2	6602 0072
OB3	6602 0073
OB4	6602 0074
OC1	6602 0075
OC2	6602 0076
OC3	6602 0077
OC4	6602 0078
OD2	6602 0079
OD3	6602 0080
OD4	6602 0081
OP (Opaque pink)	6602 0082
OR (Opaque red)	6604 6832

**Signum composite**

Composite pastes for the specialised requirements of metal frame restorations.

Signum composite dentine, 1 x 4 g

Colours	Art. Code
DA1	6602 0006
DA2	6602 0007
DA3	6602 0008
DA3,5	6602 0009
DA4	6602 0010
DB1	6602 0011
DB2	6602 0012
DB3	6602 0013
DB4	6602 0014
DC1	6602 0015
DC2	6602 0016
DC3	6602 0017
DC4	6602 0018
DD2	6602 0019
DD3	6602 0020
DD4	6602 0021

Signum composite effect, 1 x 4 g

Colours	Art. Code
ET1 (transp.)	6602 0027
ET2 (transp. blue)	6602 0028
ET4 (transp. orange)	6602 0029
ET5 (transp. white)	6602 0030

**Signum composite flow**

dentine and cervical of low viscosity for more freedom in the way you work

Signum composite flow, 1 x 4 g

Colours	Art. Code
DA1	66048941
DA2	66048942
DA3	66048943
DA3,5	66048944
DA4	66048945
DB1	66049051
DB2	66049052
DB3	66049053
DB4	66049054
DC1	66049055
DC2	66049056
DC3	66049057
DC4	66049058
DD2	66049059
DD3	66049060
DD4	66049061

Signum composite flow cervical, 1 x 4 g

Colours	Art. Code
CV1	66050346
CV2	66051713

Signum composite margin, 1 x 4 g

Colours	Art. Code
M1	6602 0023
M2	6602 0024
M3	6602 0025
M4	6602 0026

Signum composite enamel, 1 x 4 g

Colours	Art. Code
EL	6602 0034
EM	6602 0035
ED	6602 0036

SIGNUM REFILLS

Signum ceramis

Glass ceramic composite specially developed for metal free restorations. Optimised abrasion resistance, high mechanical stability and brilliant colours.

Signum ceramis dentine, 1 x 4 g

Colours	Art. Code
DA1	6602 2940
DA2	6602 2942
DA3	6602 2943
DA3,5	6602 2944
DA4	6602 2945
DB1	6602 2946
DB2	6602 2947
DB3	6602 2948
DB4	6602 2949
DC1	6602 2950
DC2	6602 2951
DC3	6602 2952
DC4	6602 2953
DD2	6602 2954
DD3	6602 2955
DD4	6602 2956

Signum ceramis effect, 1 x 4 g

Colours	Art. Code
ET1 (transp.)	6603 0948
ET2 (transp. blue)	6603 0949
ET4 (transp. orange)	6603 0950
ET5 (transp. white)	6603 0981

Signum ceramis margin, 1 x 4 g

Colours	Art. Code
M1	6603 1429
M2	6603 1432
M3	6603 1433
M4	6603 1434

Signum ceramis enamel, 1 x 4 g

Colours	Art. Code
EL	6602 2957
EM	6602 2958
ED	6602 2959



Signum cre-active

With the Colour fluids of Signum cre-active, amazing individualised characterisations can be achieved and restorations are perfectly matched to the adjacent teeth.

Delivery form: 1 x 3 g

Colours	Art. Code
white	6602 0049
polar	6602 0050
umbra	6602 0051
corn	6602 0052
mango	6602 0053
caramel	6602 0054
maroon	6602 0057
black	6602 0058
T1	6602 0059
T2	6602 0060



SIGNUM REFILLS

Signum matrix

Signum matrix is a flowable composite which is capable of achieving superior performance for opalescence, fluorescence and transparency to compliment the highest of abrasion resistance. Perfect for incisal or occlusal finishes.

Signum matrix value, 1 x 4 g

Colours	Art. Code
VL1	6601 9703
VL2	6601 9704
VL3	6601 9705
VL4	6603 9706

Signum matrix secondary dentine, 1 x 4 g

Colours	Art. Code
SD1	6601 9693
SD2	6601 0669

Signum matrix mamelon dentine, 1 x 4 g

Colours	Art. Code
MD1	6601 9691
MD2	6601 9692
MD3	6601 0670

Signum matrix opal Incisal, 1 x 4 g

Colours	Art. Code
OS1	6601 9694
OS2	6601 9695
OS3	6601 9696
OS4	6601 9697

Signum matrix opal transparent, 1 x 4 g

Colours	Art. Code
OT1	6601 9677
OT2	6601 9678
OT5	6601 9679
OT10	6601 9680
OTA	6601 9698
OTB	6601 9699
OTG	6601 9700
OTY	6601 9701
OTice	6601 9702



5.2 BONDING AGENTS

METAL BONDING AGENT

Signum metal bond

Bonding agent for crowns, bridges and partial dentures.

The bonding agent is extremely resilient and remains strong for a long period of time. It is easier and quicker to process than heat bonding procedures or sandblasting systems. The "2 bottle system" provides an extraordinary adhesive force between the alloy and the veneering composite due to its specialised material composition.

Advantages

- Innovative cold bonding agent for all dental alloys
- Wide areas of application (acrylic dentures/composite)
- Due to cold adhesion bonding it is suitable for restorations with a chairside application
- Up to 300 % better shear bond strength on PM alloy (see graphic below*)
- Space saving build up of layers
- Opaque 2. component for quick metal masking

Signum metal bond (set)

Delivery forms	
1 x 4ml	Signum metal bond I
1 x 4ml	Signum metal bond II
1 x	Dose tray
Art. Code	6603 3913



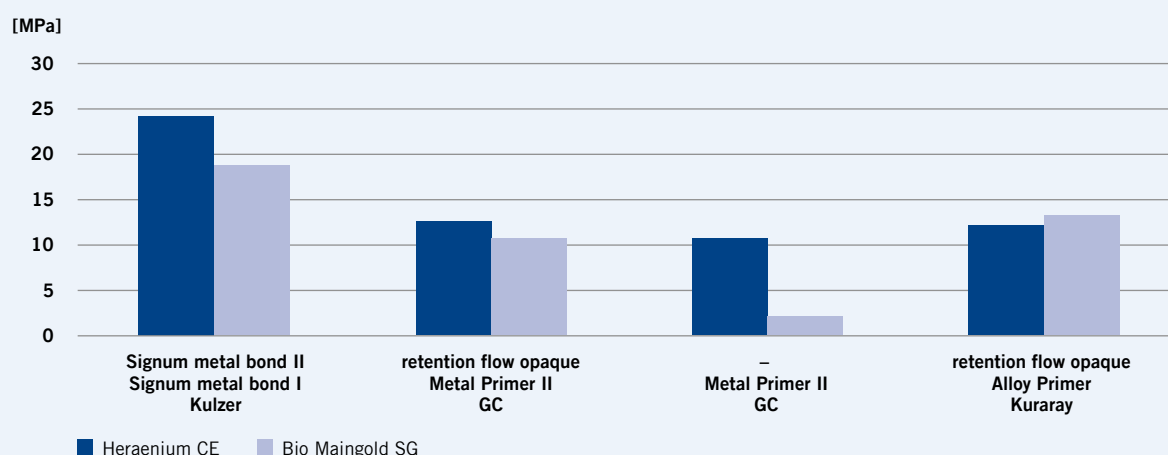
Signum metal bond (refills)

Delivery form	Art. Code
1 x 4 ml Signum metal bond I	6603 3915
1 x 4 ml Signum metal bond II	6603 3916



Comparison of shear bond strength of several bonding systems*

(build up with two layers of opaque, one layer of Signum composite dentine)



*shear bond strength test according to ISO 10477: 2004
University of Tübingen, Germany/Prof. Dr. rer. nat. Geis-Gerstorfer J

ZIRCONIA BONDING AGENT

Signum zirconia bond

The bonding agent for the material combination zirconium dioxide + Signum composite or ceramis. It ensures absolute safety through a strong adhesive bond.

Advantages

- Officially verified strong bonding to zirconium dioxide
- Compatible with all zirconium dioxide frameworks
- Supports adhesion with composite cements when seating zirconium dioxide restorations (e.g. Maryland bridges, primary crowns)

Indication

- For the fabrication of long term temporary restorations with Signum composite or Signum ceramis on zirconium dioxide
- For the intraoral and extraoral repair of chipped ceramic veneers with direct filling composite. This applies exclusively for defects that extend to the zirconium dioxide framework.
- Not suitable for bonding to silicate ceramics (Please see Signum ceramic bond)

Signum zirconia bond (set)

Delivery forms	
1 x 4ml	Signum zirconia bond I
1 x 4ml	Signum zirconia bond II
1 x	Dose tray
Art. Code	6603 8530

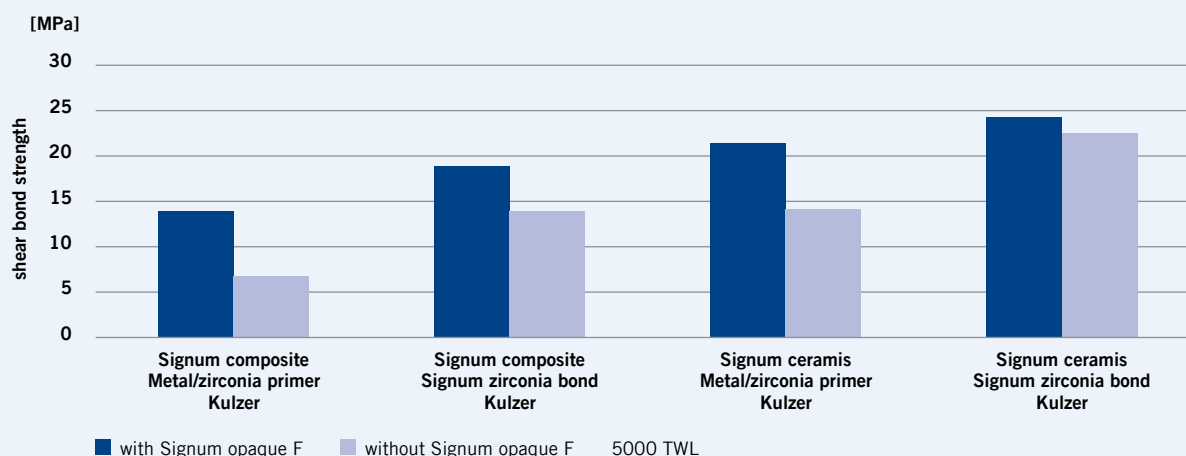


Signum zirconia bond (refills)

Delivery form	Art. Code
1 x 4ml Signum zirconia bond I	6603 8541
1 x 4ml Signum zirconia bond II	6603 8542



Test of shear bond strength according to ISO 10477:



*Source: Universitätsklinikum Jena [University Medical Centre], Fachbereich Prothetik und Werkstoffkunde [Prosthetics and Materials Science], Prof. Dr. med. dent. habil. Küpper H, Dr. Göbel R, March 2008, documentation available

CERAMIC BONDING AGENT

Signum ceramic bond

2 Step Bonding agent for Silicate ceramic

The new bonding agent for the silanisation of silicate ceramics achieves very high adhesion rates on the basis of ISO 10477. Fast and efficient to use, Signum ceramic bond can be used as a bonding agent for seating full ceramic restorations and for repairing chipped ceramic restorations using direct filling composite. Pre-polymerisation of the bonding agent is not required. Signum ceramic bond is compatible with the majority of filling composites and composite cements on the market.

Advantages

- Quick, safe and secure handling
- Intraoral and extraoral application
- Excellent long lasting aesthetic results
- No need for polymerisation
- Extraordinary bonding strength and durability (up to 30 MPa according to ISO 10477)

Indication

- Use for Intraoral and extraoral repair at chairside with a direct composite
- For preparation of the bonding surface before cementation, e.g. Ceramic restorations using resin cements
- To generate a dispersion layer on silicate ceramic in order to achieve connection/bond with (Meth-)acrylate based composite (e.g. Signum composite, Signum ceramis, Venus and others)

The set is available with 25 disposable brushes and 5 milling burs.

Signum ceramic bond (set)

Delivery forms	
1 x 4ml	Signum ceramic bond I
1 x 4ml	Signum ceramic bond II
1 x	Dose tray
25 x	brushes
5 x	K1 bur
1 x	Instruction sheet
Art. Code	6603 9817



Signum ceramic bond (refill)

Delivery forms	Art. Code
1 x 4 ml Signum ceramic bond I	6604 2514
1 x 4 ml Signum ceramic bond II	6604 2515
5 x K1 bur	6604 4581



PROVISIONALS

Palavit 55 VS

Self curing for interim work in crown and bridge procedures as well as dentures

Advantages

- Universal acrylic for the laboratory and dental practice
- No additional investment required due to auto polymerisation
- High sheen polish and stable colour
- High mechanical stability and low water intake

Applications

- For the reproduction of facings
- For the repair of methyl methacrylate crowns and bridge facings
- For the adhesion of ready-made facings (on metal frames)
- For the production of long-term provisional solutions (facing procedure)
- For the aesthetic supplement of ready made teeth
- For the production of tooth colours on a prosthetic basis
- For the production of shaping facings

Palavit 55 VS (set)

Contents	
6x20g	powder in all colours
45ml	liquid
1 x	Pipette
1 x	Silicone mixing bowl
Art. Code	6470 7530



Palavit 55 VS (refills)

Liquid 1x45 ml

Delivery forms	Art. Code
Palavit 55 VS DE/IT, 45 ml	6470 7527
Palavit 55 VS FR/NL, 45 ml	6607 0213



1x20g

Colours	Art. Code
A20	6470 7557
A30	6470 7558
A35	6470 7559
B30	6470 7560
D30	6470 7561
I	6470 7562



1x100g

Colours	Art. Code
A20	6470 7563
A30	6470 7564
A35	6470 7565
B30	6470 7566
D30	6470 7567
I	6470 7568

5.4 EQUIPMENT

EQUIPMENT

HiLite pre 2

Pre-polymerisation lamp with mobile charging unit

Signum HiLite pre 2 provides LED light technology with modern design for rapid and professional pre-polymerisation* of flowable composites. The device can be used for a wide variety of indications in the fields of acrylic prosthetics and veneering.

* For final polymerisation, an additional device is required, e.g. Signum HiLite power or HiLite power 3D.

Advantages

- Mobile or stationary use possible
- Designed for a wide variety of indications
- Very long LED service life
- Independent of mains power thanks to rechargeable battery
- Very high spectral radiant intensity
- Homogeneous light distribution
- Customized light exposure time
- Very little heating up of the object thanks to cold light
- Reinforced aluminium case

Applications

Ideal for pre-polymerisation of flowable composites of the Signum matrix, Signum cre-active and Pala cre-active product ranges.

Contents

- Handpiece (incl. rechargeable lithium ion battery)
- Docking station
- Magnetic charging socket with power supply unit
- Anti-dazzle device
- Clip
- Depositing tray for handpiece



Technical data

Charger power supply input voltage	100–240 V AC, 0.3A max., 50/60Hz
Output voltage	5V DC, 1A max.
Power supply of handpiece Rechargeable lithium ion battery	3.7V DC
Light source	LED, 3W, 405 nm (peak wavelength)
Weight of handpiece in g	77
Dimensions of handpiece, LxØ in mm	120x19
Dimensions of docking station WxHxD in mm	69x135x215

Signum HiLite pre 2

Art. Code	6605 9751
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EQUIPMENT

HiLite power 3D

High performance light polymerisation device for light-curing veneering and 3D print materials.

The HiLite power 3D creates the perfect polymerisation for all light curing dental materials.

Advantages

- **NEW!** 2nd time mode for composite AND 3D printed material
- **NEW!** Easy operation – single button timer control
- **NEW!** 6 polymerization times (6, 90 and 180 seconds/ 5, 10 and 15 minutes)
- **NEW!** Blue process timer control LEDs
- High-power flash bulb with long life performance
- Efficient cooling management
- Safety door lock
- Worldwide voltage power supply
- Wide range of light from 390–540 nm
- Short polymerisation times

Applications

Ideal for pre and final polymerising light-curing composites from the Signum, 3D print, Pala and many other product ranges.

- Veneering composite materials
- Light curing, prosthetic materials
- Blocking out materials
- Light curing silicon key
- 3D print material

Contents

- Lamp module with flashlamp and chip card
- Filter Glass
- Pot-shaped reflector
- Object holder
- Mains cable Europe, US/JP
- 2x model tray

**Technical data**

Nominal voltage	100/115/230 V (via voltage selector switch)
Nominal frequency	50/60 Hz
Fuse protection	T6,3 A
Power consumption	325 VA
Dimensions W×H×D in mm	225×230×345
Weight in kg	9.5

HiLite power 3D
Light polymerisation device
incl. reflector pot and object holder

Art. Code 6606 9514

For further Information about cara Print 4.0 please also take a look on page 18 and www.kulzer.com/cara-print

5.5 ACCESSORIES

ACCESSORIES

Signum connector

Light curing bonding agent between prosthetic acrylic materials and light curing veneering materials.

Advantages

- For individual colour and shape modifications on ready-made dentures
- For the individual colouring of prosthetic based acrylics

Delivery form	Art. Code
1 x 5 ml	6471 4211



Signum HP Paste

Polishing paste

Polycrystalline paste to polish composite materials

Delivery form	Art. Code
Stick, 1 x 10 g	6471 2537



Signum liquid

Processing aid for modelling and reproducing the dispersion layer

Delivery form	Art. Code
1 x 4 ml	6471 4198



Signum insulating gel

Universally-compatible insulating gel

Advantages

- Higher plaque-resistance, as it is applied prior to final polymerization
- Water soluble, i.e. completely extractable from the modelling material
- Simple to use
- Applicable for all modelling Materials

Indication

- Isolation of modelling materials from composite materials
- Application prior to final polymerisation prevents the creation of a dispersion layer on the veneering surface

Delivery form	Art. Code
10g container	6470 6307



Signum HP diamond

Diamond polishing paste with microfine diamond abrasives for fast polishing of highly-filled composites.

Advantages

- Does not smear
- Faster and longer-lasting shine even after cleaning
- Generate surface quality lower than 0.1 µm

Delivery form	Art. Code
1 x 15g	6604 5987



Signum insulating pen (set)

A two component isolation to separate gypsum or epoxy resin from the veneering composite material and ceramic.

Advantages

- Grease free
- No film or layer thickness
- No detrimental effect on the material's properties
- Optimal handling
- Applicable for all modelling materials

Contents	
1 x 12 ml	Insulating pen I
1 x 12 ml	Insulating pen II
Art. Code	6471 2597



Signum insulating pen (refills)

Delivery form	Art. Code
Insulating pen I 1 x 12 ml pen	6471 2595
Insulating pen II 1 x 12 ml pen	6471 2596

ACCESSORIES

Signum tool kit

Rotating special instruments for processing and polishing composite materials.



Contents

1 x	Mepol I
1 x	Mepol II
1 x	Inpol
1 x	Silico
1 x	Prepol
1 x	Hipol
1 x	Fissura 1
1 x	Fissura 2
1 x	Magnum
1 x	Piccolo
1 x	Diaface

Art. Code 6601 5677

Signum tool kit (refills)

Delivery form	Art. Code
Mepol I, 10 pieces	6600 7708
Mepol II, 5 pieces	6601 5678
Silico, 10 pieces	6600 7723
Prepol, 10 pieces	6600 7652
Hipol, 10 pieces	6600 7707



Composite assortment box, empty

All materials can be kept safe from light and contamination in this ergonomic wooden box.

Delivery form

Wooden box, made from cherry wood, 5 drawers

Art. Code

6601 9710



Drawer inserts

Delivery form

5 pieces for 100 syringes

Art. Code

6601 9707



Signum mixing block

Delivery form

including cover
5 pieces

Art. Code

6471 0901



ACCESSORIES

Signum matrix shade guide

Art. Code 6601 9769



Signum cre-active shade guide

Art. Code 6604 1118



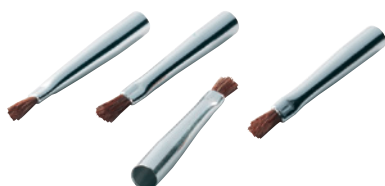
Brush inserts 2 x 50 pieces

Delivery form	Art. Code
white	6471 1179
red	6471 1180
clear	6470 6770



Brush heads Signum opaque F

Delivery form	Art. Code
25 pieces	6471 1887



Universal brush holder

Delivery form	Art. Code
for disposable brushes, 5 pieces	6471 1886



Canules

Delivery form	Art. Code
Plastic canula	6601 9708
Metal canula	6601 9709
caps for metal canula	6602 0132



Signum stain brush

Art. Code 6601 9831



ACCESSORIES

Blocset

Blocking out material

Blocset paste – light-curing, highly plastic, single-component material for dental model pre-paration

Blocset liquid – light-curing modelling liquid for processing Blocset paste and dispersion layer restoration

Advantages

- Excellent grinding qualities after polymerisation
- Dimensionally stable under high temperatures (e.g during burnout and deep draw processes)
- Superior bonding strength on model materials
- Excellent edge stability and abrasion resistance

Indication

- Build-up and enlargement of plaster dies to save on precious metals
- Alignment of interfacing parts on plaster dies and models

Contents

3 x 4 g	Blocset paste
1 x 3 ml	Blocset liquid

Art. Code	6470 7645
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DENTURE MATERIALS

DEVELOPING DENTURE TEETH AND DENTURE ACRYLICS FOR OUR CUSTOMERS:

PALA. THAT'S PROSTHETICS.

Pala, the recognised brand for high quality denture teeth, acrylics and accessories. Developed and engineered over many years, our perfectly matched products are designed to offer the best technology for creating precise and functional dentures.

We want you to work with our products every day. Therefore we have to ensure the highest level of quality standards during each and every manufacturing process. Our aim is to work with you as our partner hand in hand to understand and adapt to your ever changing needs and to offer the total solution. That's Pala. That's prosthetics.

6 DENTURE MATERIALS

6.1	PALAVENEER SYSTEM	PAGE 96
6.2	DENTURE TEETH	PAGE 100
6.3	DENTURE ACRYLICS	PAGE 109
6.4	SET UP	PAGE 120
6.5	FINISHING	PAGE 123
6.6	CHARACTERISING/FINISHING	PAGE 127
6.7	ACCESSORIES	PAGE 129
6.8	MELIODENT	PAGE 131



Pala®

That's Prosthetics.

Denture Teeth and Acrylics for the Future.

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

DENTURE MATERIALS

IMPLEMENTING INNOVATIONS IN THE DENTAL PRACTICE: PALA. THAT'S PROSTHETICS.

The leading market position from a lot of Pala products depends partly on our philosophy of partnership: success is whatever benefits you, our customer. Our research and development is based on this principle and the results speak for themselves, such as our modern INCOMP process. With this production method we eliminate porosities and bubbles in the denture teeth and ensure extreme density.

THE PALA MIX & MATCH COMBINATION PRINCIPLE

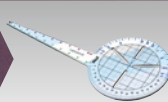






The Pala Mix&Match combination principle gives you the tools to combine Pala Mondial, Pala Premium and Pala Idealis teeth with one another to achieve individual and professional results. With Pala Mix&Match you can cater for individual requirements with considerably more flexibility and provide patients with precision dentures. You have all indications covered with Pala Mix&Match's perfectly harmonised denture teeth.

PALA FROM A TO Z.

Pala. The complete system. Precision engineering for dentures.

The process for manufacturing customised appliances has never been simpler. From mixing of the acrylic to the final fit of the denture, a range of materials and equipment is available to offer perfect results. Whether it is the Pala Mix and match principle, preparation of the model using the Palameter, or even transporting dentures in a Palabox, Pala has it covered.

Pala takes you to a perfect result step by step.

						
Preparation	Tooth selection	Set-up	Acrylics	Finishing	Characterization	Transport
PalaMeter Palavit L Palatray XL	Pala Idealis Pala Premium Pala Mondial PalaVeneer Pala Mix&Match DS	Contact A	PalaXpress ultra PalaXpress Palapress Palapress vario Paladon 65 Paladur PalaVeneer Dentine	Palajet Palamat elite Aislar Palaferm Palabond Palaferm	Pala cre-active Palaseal PalaPolish	PalaBox
Besides this practical instrument, proven materials for creating custom impression trays provide precision and fit.	Pala Mix & Match for maximum flexibility and reliable, easy-to-set-up prosthetics for all requirements and any situation.	Set-up instruments for precise positioning and detail accuracy. The result: Dentures with long-term stability in a shortened production time.	Our wide range of products for all indications are the result of more than 80 years of experience with innovative ideas.	Systematic processing of our products, reliability, high precision, and low residual monomer levels.	Light-cure materials for customising prosthetic restorations for immediately visible characterisation.	For storage and for safe transport.

6.1 PALAVENEER SYSTEM

PALAVENEER

PalaVeneer 6/8

Veneering system – more room for perfect results

The PalaVeneer veneer shells can be combined with all Pala tooth lines in the Pala Mix & Match concept. PalaVeneers represent absolute trueness to shade, form and function. The tooth material NanoPearls® makes PalaVeneer particularly abrasion-stable and fracture-resistant. The shapes of the PalaVeneers are based on highly-aesthetic Premium 6 and Idealis 8 with its perfect morphology to keep enough space for construction elements.

The thin wall thickness gives the maximum attainable overall aesthetic, even when space is limited or in functionally difficult cases. This makes it possible for the technician to achieve highly aesthetic, Premium-identical layering in the anterior region.

Despite the very thinly shaped veneers, the shells alone achieve a shade very close to the desired target shade.

The extended cervical area offers the best covering for implants and tertiary structures.

Benefits

- The maximum attainable overall aesthetic in limited space and functionally difficult cases.
- Thin shells, reduced fissure depth and an extended cervical area.
- Able to be combined with all Pala tooth lines and PalaVeneer shells in the Pala Mix & Match concept.
- Absolute trueness to shade, form and function
- Tooth material with NanoPearls® for the highest abrasion stability and fracture resistance.
- Consistently thin shell, even in the cusp area
- Basal contouring adapted to classical framework structures
- Created to match the Idealis tooth line occlusal surface
- Less polishing effort
- 3D Multilayering
- Easy setup, based on reduced shear forces

Indication

- Telescopic work
- Model cast prosthetics
- Implant structures
- Cover dentures
- Aesthetic try-ons
- CAD/CAM bridges and bars
- Laboratory manufactured temporary restorations

**System components**

- PalaVeneer Dentine 16 shades A1–D4
- Palabond
- Signum opaque F 16 shades A1–D4
- Signum metal bond
- Pala Lab Putty

PalaVeneer 6**Delivery form**

shades	16 shades A1–D4
moulds	9 upper anteriors 3 lower anteriors

PalaVeneer 8**Delivery form**

shades	16 shades A1–D4
moulds	3 upper posterior 3 lower posterior



TOOTH-COLOURED DENTURE ACRYLICS

PalaVeneer Dentine

Tooth coloured acrylic for deposition of PalaVeneers veneer shells

PalaVeneer Dentine is a self-curing, tooth colored PMMA prosthetic acrylic, particularly suited to fix PalaVeneer veneer shells.

PalaVeneer Dentine distinguishes itself through excellent processing properties.

Together with PalaVeneer veneer shells, the technician obtains a perfect, Premium-identical layering in the anterior region.

PalaVeneer Dentine was modified with the proven NanoPearls® material for maximum abrasion stability and fracture-resistance.

Benefits

- Optimal processing properties
- Good adhesive bond
- Simple processing
- Rapid swelling
- Colour stable
- Fluorescent material
- Adapted to the mechanical properties of PalaVeneer 6 and PalaVeneer 8 material
- Good polishability

Indication

- Fixing and backing PalaVeneer veneer shells on metal frameworks
- Fixing and backing milled acrylic teeth on metal frameworks
- To restore/bond facets
- To produce long term temporaries (facet technique)
- To aesthetically finish pre-fabricated teeth

System components

- PalaVeneer 16 shades A1 – D4
- Palabond
- Signum opaque 16 shades A1 – D4
- Signum metal bond
- Pala Lab Putty



PalaVeneer Dentine refills

Delivery form	Art. Code
Liquid 25 ml DE/GB	6605 7636
Liquid 25 ml IT/ES	6607 0747
Liquid 25 ml FR/NL	6607 0749
Liquid 80 ml DE/GB	6605 7637
Liquid 80 ml IT/ES	6607 0748
Liquid 80 ml FR/NL	6607 0750
Powder 35g	
A1	6605 7540
A2	6605 7565
A3	6605 7566
A3.5	6605 7567
A4	6605 7568
B1	6605 7569
B2	6605 7570
B3	6605 7621
B4	6605 7622
C1	6605 7623
C2	6605 7624
C3	6605 7625
C4	6605 7626
D2	6605 7627
D3	6605 7628
D4	6605 7629
I	6605 7632

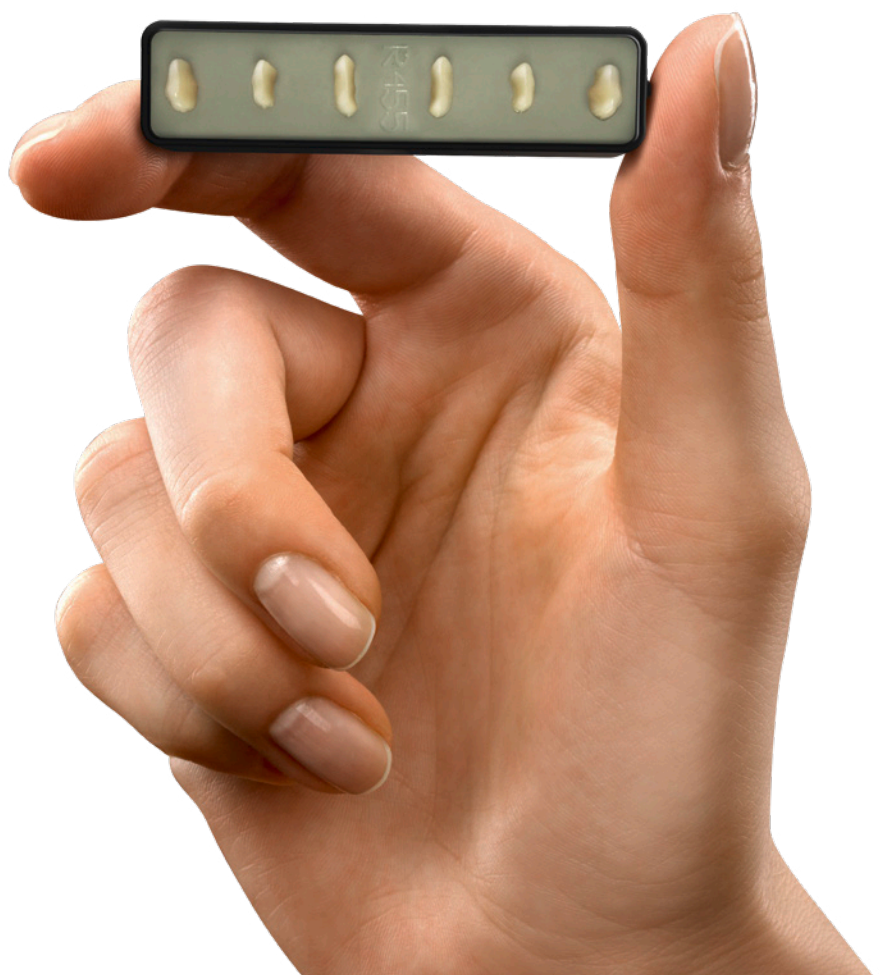
6.1 PALA MIX & MATCH DS

Pala Mix & Match DS

Artificial teeth for CAD/CAM process.

Bringing together classic and digital dental technology – With Pala® Mix & Match DS

When teeth are adjusted to fit the individual patient, this is done by hand. In full denture prosthetics, the vertical adaption is mainly performed basally. In digital full denture prosthetics, precision is particularly key to transferring the virtual patient situation to reality. In the Kulzer digital sets Pala Mix & Match DS, the shapes of the Pala tooth lines Pala Premium 6, Pala Mondial 6 and 8 as well as the Pala Idealis 8 are held in specially manufactured frames. The appropriate teeth and the denture tooth blanks are stored as a dataset in the software Ceramill® D-Flow (Amann Girrbach) and can be milled for each individual patient.

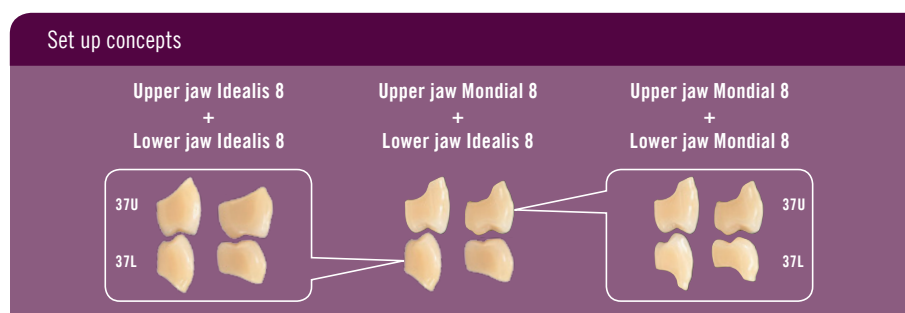


Info:

Article numbers for denture teeth are not shown in the catalogue. Please place your order as usual or contact your local dealer.

The Pala Mix & Match principle also allows you to combine all of Kulzer's Mix & Match Pala tooth lines Pala Idealis, Pala Premium and Pala Mondial in digital prosthetics, to achieve individual, professional results. The ability to combine these tooth lines with one another, allows you to respond flexibly to individual requirements so that you can provide your patients with even more accurate and age-appropriate dentures.

Pala Idealis and Pala Mondial can be set up in 3 different occlusal standard concepts:



Pala Mix & Match DS is available as:

Premium 6 (DS) – Highest aesthetics for the high demands



Mondial 6 (DS) – Lifelike harmonious tooth shapes



Mondial 8 (DS) – Precisely defined centric with proven functionality



Idealis 8 (DS) – Freedom in the paths of movement due to naturally reduced cusps



The contact points are regained in the articulator after processing.
The digital sets are available in shades A1, A2, A3, A3.5 and B1.

PALA PREMIUM

Premium 6

Anterior teeth with the best aesthetic appearance in prosthetics

Premium 6 is an adaptable and versatile tooth that is quickly and easily set up. As the cervical region is variable, its depth of shade can be adapted according to the patient's age – simply by reducing the cervical region.

The body of the tooth is designed naturally to facilitate an aesthetic setup. The base of the tooth has been increased in volume to enable anatomically accurate papillae to be created, even with custom anterior setups – a feature which conventional acrylic teeth lack.

Due to new requirements and indications placed on dental prosthetics, we now supply four additional anterior moulds providing for enhanced overall aesthetics and increased usefulness for implant-borne prosthetics.

The body of the tooth has retained its natural contours yet is broader thus facilitating aesthetic implant-borne restorations. The increased basal width and volume allow us to mask telescopes, removable denture frameworks and precision attachments more effectively. The new moulds provide for increased stability and minimizes detrimental shear forces.

Premium is one of Kulzer's most successful tooth lines, meeting the highest demands in aesthetics, functionality and natural appearance. Thanks to Premium's fully anatomical design, any setup can be implemented. As a result, you can take advantage of all customisation options, according to the patient's wishes and your preference.

Advantages

- Optimal aesthetic results with natural tooth shapes
- Allows customised setup without compromises
- Absolutely true to shape, colour and function
- High abrasion and fracture-resistance with the cutting-edge Nanopearl dental material
- Can be combined with Mondial 8, Idealis 8 and Premium 8

Indication

- Implant-borne prosthetics
- Fixed and Removable Partial Dentures
- Full dentures
- Precision Attachments
- Telescopic crowns and other custom-made devices

Premium 6 delivery forms

shades	16 shades, A1 – D4 2 shades, bleach BL2 – BL3
moulds	14 upper anterior moulds 8 lower anterior moulds



PALA PREMIUM

Premium 8

Posterior tooth with multifunctional occlusal surfaces

The patented occlusal morphology of Kulzer's Premium 8 tooth reproduces that of natural teeth. Premium 8 teeth can be set up with eugnathic or dysgnathic jaw relationships without requiring laborious spot grinding. This means that for the first time ever, you, the user, can variably set up denture teeth in a "tooth-to-two-teeth" or a "tooth-to-tooth" relationship. The cusp angle corresponds to the 30° inclination of condylar guidance. The volume or tooth size of Kulzer Premium 8 teeth is primarily designed for the demands of two-part prosthetics.

Their precisely adapted height prevents "steps" between them and the remaining dentition. As they are the same width as natural teeth, both sagittally and transversally, implants and attachments easily fit to the prosthetic teeth. Premium teeth are created in three layers using a 3D Multi Layering process. By reducing the cervical region of the teeth, you can control the cervical colour intensity, thus individually adapting them to the age of the patient.

Premium 6 and Premium 8 consists of Nanopearl material, which renders teeth highly resistant to abrasion and fracture.

Advantages

- Multifunctional in all setups
- Absolutely true to shape, colour and function
- High abrasion and fracture-resistance with the cutting-edge Nanopearl dental material
- Can be combined with Mondial 6 and Premium 6

Indication

- Implant-borne prosthetics
- Fixed and Removable Partial Dentures
- Complete dentures
- Precision Attachments
- Telescopic crowns and other custom-made devices

Premium 8 delivery forms

shades	16 shades, A1 – D4 2 shades, bleach BL2 – BL3
moulds	4 upper posterior moulds, 4 lower posterior moulds



Info:

Article numbers for denture teeth are not shown in the catalogue. Please place your order as usual or contact your local dealer.



PALA IDEALIS

Idealis 8

Even more is possible aesthetically and functionally.

The Pala Idealis posterior tooth impresses with properties that have been formerly considered impossible to combine. It offers absolutely accurate centrics with maximum freedom in the paths of movement. This is made possible by the naturally reduced occlusal relief. It is supported by a highly aesthetic, physical shape. This is emphasised by clear keying in a centric, non-interfering dynamics and minimisation of parafunctions. All this means: **greater benefit for you.**

Pala Idealis combines maximum chewing efficiency with comfortable, non-interfering and clear function for the patient. This opens up new areas of indication that are becoming more important: implant prosthetics, gerontoprosthodontics and the therapy of temporomandibular disorders (TMJ).

The tooth has ideal material properties, particularly for implant overdentures, and minimises initial abrasion with flattened multi-point contact areas and maximum volume. You profit from the basal width and tooth length for the largest possible structural coverage. Pala Idealis is impressive in gerontoprosthodontics with smooth, easily functional and easily cleaned morphologies on the tooth. The clear, centric keying of the tooth with high degrees of freedom is ideal for TMJ therapy.

The Pala Idealis posterior tooth is compatible with all current anterior tooth lines in the Mix & Match principle.

Advantages

- Perfect coverage of tertiary and implant structures through wider cervical area and high tooth volume
- Better interdental closure and optimal cleanability through bigger proximal surfaces
- Safe and fast set-up through definite bite index and maximised freedom in the centric relation
- Aesthetically and functionally harmonised with the tooth lines Pala Premium & Pala Mondial
- High wear, and break resistance due to Nanopearls material technology. The special Pala Idealis morphology reduces excessive initial wear

Indication

- Implant-borne prosthetics
- Geriatric prosthetics
- Functional therapy
- Complete dentures
- Fixed and Removable Partial Dentures

Delivery form

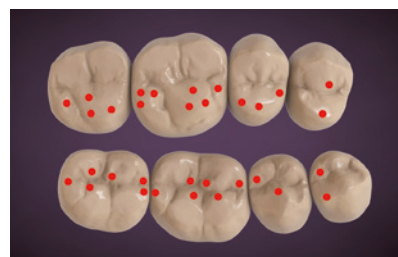
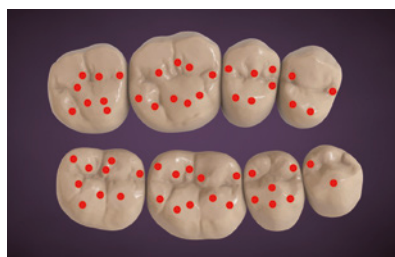
shades	16 shades, A1–D4 2 shades, bleach BL2–BL3
moulds	4 upper posterior moulds 4 lower posterior moulds



Arrangement in balanced occlusion



Arrangement in lingualised occlusion



PALA MONDIAL

Mondial 6

Time tested denture tooth that meets all requirements of modern dental technology

The layering of Mondial 6 teeth has been adapted to that of natural teeth. That's why our Mondial teeth meet all requirements of a high aesthetic anterior tooth line.

The pronounced modelling of the labial surfaces and the laterally raised dental lamina ensure vivacious shades in every light.

Mondial, representing the evolution of prosthetic teeth, is well proven in terms of aesthetics, function and material quality. This line guarantees absolute reliability of colour, shape and function. It can be processed easily and without additional expense and is suitable for all patients.

Advantages

- Natural and variable appearance
- Absolutely true to colour, shape and function
- High abrasion and fracture-resistance with the cutting-edge Nanopearl material
- Can be combined with Mondial 8, Idealis 8 and Premium 8

Indication

- Complete dentures
- Implant-borne prosthetics
- Fixed and Removable Partial Dentures
- Telescopic crowns and other custom-made devices

Delivery form Mondial 6

shades	16 shades, A1 – D4 2 shades, bleach BL2 – BL3
moulds	18 upper anterior moulds, 10 lower anterior moulds, 6 upper anterior moulds (Mondial 6E), 2 lower anterior moulds (Mondial 6E)



Info:

Article numbers for denture teeth are not shown in the catalogue. Please place your order as usual or contact your local dealer.

PALA MONDIAL

Mondial 8

Better setup without adjustment

Functionality and natural appearance are the main features which stand for our tooth line Mondial 8. Distinct fissures make Mondial 8 posterior teeth look beautifully natural and guarantee precise intercuspation. The structure of the buccal surfaces, the layering, the shades and the variable neck have been anatomically matched to the anterior teeth. Bilateral digitalisation ensures that Mondial tooth pairs are 100% identical and absolutely consistent in their functionality in all sizes. The teeth fit together for perfect intercuspation.

Mondial also sets new standards in material quality. It is the first Kulzer dental line to be produced with novel microfillers and patented nanoparticles in a Nanopearl visco-plastic matrix. It far exceeds the material requirements of EN ISO 22112:2006.

This material with nanostructure results in teeth with high abrasion resistance, previously only seen with composites, as well as very good fracture resistance.

The result:

A significantly longer lifespan.

Advantages

- Efficient and clear setup
- Precise functionality without laborious spot grinding
- Absolutely true to shape, colour and function
- High abrasion and fracture-resistance with the cutting-edge Nanopearls dental material
- Can be combined with Mondial 6 and Premium 8

Indication

- Complete dentures
- Implant-borne prosthetics
- Fixed and Removable Partial Dentures
- Telescopic crowns and other custom-made devices

Delivery form Mondial 8

shades	16 shades, A1 – D4 2 shades, bleach BL2 – BL3
moulds	5 upper posterior moulds, 5 lower posterior moulds



Living mould chart

PALA Mix & Match

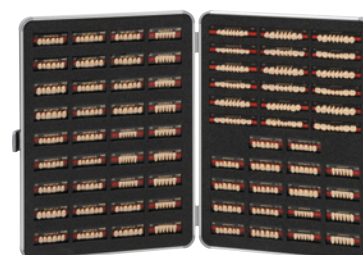
price based on set price of

Premium 6/Premium 8

Mondial 6/Mondial 8 and Idealis 8

Delivery form

	8 posterior sets Idealis 8
	28 anterior sets Mondial 6
	8 posterior sets Mondial 8
	22 anterior sets Premium 6
	8 posterior sets Premium 8



CLASSIC

Optostar/Optodent Multilayered anterior teeth

The wide range of shades and moulds available with these anatomically shaped teeth permits perfect adaptation to existing dentition or in the situation where complete dentures are indicated. The special layer of the Optostar ensures that the teeth look natural under any light. Optostar is a 4-layer-tooth and Optodent a 3-layer-tooth.

Delivery form Optostar

shades	16 shades, A1 – D4
moulds	23 upper anterior moulds, 12 lower anterior moulds



Delivery form Optodent

shades	16 Bio-Ivo shades
moulds	23 upper anterior moulds, 12 lower anterior moulds



Optognath Posterior teeth with anatomical occlusal surfaces

The Optognath posterior tooth provides superior physiological function, accurate intercusp relationship, perfect occlusion and even distribution relationship of masticatory load.

The unique hollow neck improves bonding to the denture base material and eliminates the need for any grinding. Optognath guarantees fast and easy laboratory setup and first-time fit in the patient's mouth.

Delivery form Optognath

shades	16 shades, A1 – D4
moulds	5 upper posterior moulds, 5 lower posterior moulds



Delivery form Optognath Bio-Ivo

shades	16 Bio-Ivo shades
moulds	5 upper posterior moulds, 5 lower posterior moulds



Optocal Posterior teeth with flat-plane occlusal surfaces

Optocal is a two-layered posterior tooth specifically designed using the "concave template" principle for difficult cases where complete dentures are indicated. The unique flat-plane occlusal surface guarantees unrestricted movement and easy occlusion.

Delivery form Optocal

shades	6 shades, A2, A3, A3.5, A4, B3, D3
moulds	2 upper posterior moulds, 2 lower posterior moulds



Optostar/Optodent living mould chart

Delivery form

35 anterior sets

Optognath living mould chart

Delivery form

10 posterior sets

BASIC

Basic 6

Anteriors for all basic needs in three basic physical characteristics.

The Basic 6 anterior tooth morphology is based on the accepted teachings and theory of Professor Kretschmer, who described three basic physical characteristics: leptosome (long, slender), pyknic (short, squat) and athletic (muscular, robust). The incisal edge is well defined and the life-like mamelons create a deeply translucent appearance. The transparent enamel coating covers the entire tooth and tapers out in the cervical area – typical characteristics for the Vita-layering technology with its unique aesthetics.

Basic 6 is suitable for both partial and full dentures irrespective of the patient's age.

Our teeth are produced using the INCOMP manufacturing process. This means they are free of voids and porosity and have a very high density. Kulzer teeth meet, and exceed, all the requirements of EN ISO 22112:2006 and ANSI/ADA Specification No. 15-1999.

Delivery form Basic 6

shades	16 shades, A1–D4
moulds	14 upper posterior moulds, 7 lower posterior moulds



Basic 8

Posteriors for all basic needs in 3 cusp angulations.

Basic 8/0° is a two-layered posterior tooth specifically designed using the “concave template” principle for difficult cases where complete dentures are indicated. The unique flat-plane occlusal surface guarantees unrestricted movements and easy occlusion. Cusp angulation 0° flat-plane occlusal surface is gentle on soft tissue due to elimination of all horizontal components. Lateral shear is reduced to a minimum on the denture-supporting tissue making the fit comfortable for the patient. Special concave template for ease of working and excellent articulation. Tooth base with less cross-linkage of acrylic to ensure an optimised connection to denture base

Basic 8/12° is a multi-layered posterior denture tooth. Its main application is for full dentures. It combines the proven scientific theory of Hildebrandt with current thinking on functional mastication. With a defined centric the tooth is able to transfer shear forces evenly over the whole denture base. The result is a denture that maintains stability even during mastication and is kind to the temporomandibular joint.

- Cusp angulation 12°
- Defined centric through sagittal cusp separation
- Perfect intercuspation
- Multi-point contact
- Can be set up on all articulators
- Easy setup, no compensation curve required
- Tooth base with less cross-linkage of acrylic to ensure optimised connection to denture base



Basic 8/33° is a multi-layered posterior denture tooth. Its main application is for partial dentures. It is based on the scientific theory of Gysi and can be set up quickly and easily. With centralised occlusion and excursion movements, the cusps guarantee an even contact and guidance. The cusp angulation of 33° and the pronounced buccal design fit perfectly into the existing natural dentition.

- Cusp angulation 33°
- Fast and easy setup with optimised occlusion
- Perfect intercuspation
- Multi-point contact
- Can be set up on all articulators
- Tooth base with less cross-linkage of acrylic to ensure optimised connection to denture base

Delivery form Basic 8

shades	16 shades, A1–D4
moulds	7 upper anterior moulds, 7 lower anterior moulds

Basic shade guide

Aid for choosing your shade

Delivery form

16 shades, A1–D4

Art. Code

6600 4884



Basic living mould chart

Delivery form

21 anterior sets

14 posterior sets

ARTIC

Artic 6

Anteriors with exceptional aesthetics for all standard applications

Artic 6 is a multilayered, life-like, aesthetically pleasing anterior tooth. This anatomically shaped tooth permits perfect adaptation to existing dentition and to complete dentures. It is available in 16 shades A1–D4 and 33 anterior moulds. The characteristic multilayered structure of Artic 6 allows exact matching of reflection curves in both natural and artificial teeth. With its high degree of translucency in the incisal and approximal regions, it offers dentists and their patients anterior teeth with an appearance guaranteed to match natural dentition under all ambient or artificial lighting conditions.

Delivery form Artic 6

shades	16 shades, A1–D4 1 shade, bleach BL3
moulds	23 upper anterior moulds 10 lower anterior moulds



Artic 8

Posteriors for superior physiological function

The Artic 8 posterior tooth is available in 16 posterior moulds that provide superior physiological function, accurate intercusp relationship, perfect occlusion and even distribution of the masticatory load. The unique hollow neck improves bonding to the denture base material. Artic 8 guarantees fast and easy laboratory setup and first-time fit in the patient's mouth.

The posteriors are available in three different angulations:

Artic 8-0°

- Multi-layered posterior tooth with a unique plane flat occlusal surface
- Gentle on soft tissue due to elimination of all horizontal components. Lateral shear is reduced to a minimum on the denture supporting tissue making the fit comfortable for the patient

Artic 8-10°

- Multi-layered posterior tooth for all indications
- Unique occlusal surface guarantees unrestricted movement and easy occlusion
- Multiple contact points

Artic 8-20°

- Multi-layered posterior tooth with functional contouring of occlusal surface
- Exact central occlusion
- Multiple contact points
- Optimum intercuspitation

Delivery form Artic 8

shades	16 shades, A1–D4 1 shade, bleach BL3
moulds	8 upper posterior moulds 8 lower posterior moulds



Artic Shade Guide

Delivery form

16 shades, A1–D4
1 bleach shade BL3

Art. Code

6605 5993



ACCESSORIES & SET-UP

Tooth Cabinet Pala Mix & Match

beech, 8 drawers, for 288 teeth each

Art. Code 6600 1336



Tooth Cabinet Pala Mix & Match

beech, 4 drawers, for 288 teeth each

Art. Code 6601 5427



Tooth Cabinet Pala Mix & Match

28 drawers, for 288 teeth each,
lockable

Art. Code 6604 7711



Contact A

Semi-adjustable articulator

The inclination of condylar guidance is 30° relative to the occlusal plane. The distance from the articulator joint to the incisal pointer is 105 mm, in accordance with Bonwill's triangle. The angle at the incisal table is 15°. A 0° incisal table is available if desired. The working height for mounting without base plates is 100 mm.

The condylar joints feature a double conical shape and thus correspond to the Prof. Gerber condylar technique. The inner cone (17°) and the outer cone (12°) perform Bennett's movement.

Delivery form

Art. Code

Semi-adjustable
articulator

6575 9183



Pala Mix & Match Shade Guide

Confident shade selection for Premium,
Mondial and Idealis

The Pala Mix & Match shade guide offers you a reliable aid for shade selection. 16 shades of the Vitapan Classical colour scale and 2 bleach shades ensure that customer wishes are optimally met.

The tooth shade samples were produced using digital mould construction, resulting in absolutely identical shade tabs in terms of colour, layering and material – a reliable means of shade communication between dental office and laboratory.

Advantages

- 16 shades A1–D4
- Bleach shades BL2 and BL3
- Reliable shade communication

Delivery form

Art. Code

16 shades, A1–D4,
2 bleach shades

6604 0261



6.3 DENTURE ACRYLICS
























PALA DENTURE ACRYLICS – OVER 80 YEARS OF EXPERIENCE AND INNOVATION

Kulzer can look back on 80 years of success in the denture acrylics sector and is indispensable to the market as the inventor of denture acrylics.

Pala has always combined high durability, colour stability, mucous membrane tolerance and great aesthetics, whilst including a worldwide range of products for all segments and indications.

In order to be able to enter new and attractive business sectors, our company has significantly increased its investment in Research & Development and follows the philosophy: “Optimal customer use through innovative therapy concepts.” herefore, we also use our experience to assure you of further technological advances. In the future, besides the development of innovative materials, the desire for materials that can be processed quickly and simply is our focus.

As the innovative leader in the dental sector we offer an extensive selection of dental products that meet the requirements both of specialised markets and also of individual patients' cases.

Product	Indication	Preparation procedure
PalaXpress ultra	    	 
PalaXpress	 	 
Palapress		 
Palapress vario		 
Paladur		 
Paladon 65	 	 



= full dentures



= implant overdenture



= injection method



= partial dentures



= repair material



= press and pack technique



= splinted construction



= pouring technique

ULTRA DENTURE MATERIALS WITH INCREASED IMPACT STRENGTH

Fracture resistant base material for all indications

The slogan for demanding indications like implant work is: stability starts at the base of the denture. Whether it's heat-cured with Paladon ultra or cold-cured with PalaXpress ultra: dental technicians fabricate implant-based dentures and combination work just as easily and safely as partial or full dentures.

The fracture resistance and elasticity of the product line significantly reduce the risk of cracks during trimming and polishing and provide additional safety even in delicate situations when de-vesting.

Advantages

- Increased fracture resistance for dentures
- Stable and durable dentures
- Reduce fractures and repairs
- High process security in the laboratory
- Less cracks during trimming and polishing
- Economic durable
- Good quality in the proven Pala system
- Excellent colour stability

PalaXpress ultra

Safe and durable universal denture acrylic for every situation

PalaXpress ultra is an optimized acrylic that can be used for all indications. A specialized additive improves fracture resistance of this high performance denture acrylic. PalaXpress ultra is therefore particularly suitable for implant work.

The acrylic is highly wear resistant and completely stable. It's smooth consistency makes processing much easier.

As a part of the Pala system, it can be combined with all Pala accessories. PalaXpress ultra creates long lasting prosthesis, reduces repairs whilst increasing the satisfaction of the laboratory and the patient.

Indication

- Full dentures
- Partial dentures
- Implant overdenture
- Completing model cast prostheses
- Splinted constructions
- Repairs
- Indirect relines
- Marginal shaping

Processing procedure

- Pouring technique
- Injection with Palajet

Delivery form	Art. Code
80 ml liquid DE/IT	6603 4268
500 ml liquid DE/GB/FR/NL	6603 4251
500 ml liquid IT/ES/PT/GR	6607 0737
500 ml liquid FI/NO/SE/DK	6607 0743
100g powder	
pink	6603 4265
pink opaque	6603 4266
pink veined	6603 4269
R50 veined	6603 4264
pink live	6603 4263
clear	6603 4267
1000g powder	
pink	6603 4252
pink opaque	6603 4258
pink veined	6603 4253
R50 veined	6603 4254
pink live	6603 4259
clear	6603 4255
12000g powder on request	



COLD-CURING DENTURE ACRYLICS

PalaXpress

Universal denture material with
high fitting accuracy

The acrylic for modern quality prosthetics. PalaXpress is the denture acrylic for a lot of indications. Full dentures with high fitting accuracy can be produced with the coordinated PalaXpress/ Palajet system using the injection process. Its unique formulation offers an exceptionally broad range of processing options, both in injection and pouring techniques.

Advantages

- Universal denture material for a lot of indications
- Highest accuracy of fit
- Colour matching of full and partial dentures as well as repairs
- Several denture saddles can be poured in one procedure
- Completion of opposite saddles without intermediate polymerisation
- Excellent mucous membrane tolerance with low content of residual monomers
- Reduced and clear storage in the laboratory
- Colour stability with catalyst system
- Unique dosing system using the injection procedure with Palajet

Indication

- Full and partial dentures
- Completing CoCr RPD metal framework dentures
- Marginal shaping
- Repairs
- Indirect relines
- Extensions

Processing procedure

- Pouring technique
- Injection technique with Palajet

Delivery form	Art. Code
80 ml liquid DE/IT	6471 1631
500 ml liquid DE/GB/FR/NL	6471 0513
500 ml liquid IT/ES/PT/GR	6607 0738
500 ml liquid FI/TR/SE/DK	6607 0745
100g powder	
pink	6471 1630
pink opaque	6471 2763
clear	6471 1693
pink live	6602 0112
1000g powder	
pink	6471 0515
pink opaque	6471 2764
pink veined	6471 0516
clear	6471 1485
R50 veined	6471 1398
pink live	6602 0111
12000g powder on request	



COLD-CURING DENTURE ACRYLICS

Palapress

Time saving, acclaimed denture acrylic

The classic prosthetic acrylic. Palapress permits quick and economical preparation of poured dentures, relines and repairs. It is pourable for approximately 2 minutes and has a processing time of up to 7 minutes to ensure high efficiency. Because of its low residual monomer content, this denture acrylic is particularly recommended due to its excellent mucous membrane tolerance.

Advantages

- Short processing time
- Excellent tissue tolerance
- High fitting accuracy
- Available in five colours
- Colour stability with catalyst system
- Without tertiary amines
- Shade matching for full and partial prosthesis.
- Low residual monomer content

Indication

- Partial dentures
- Completing CoCr RPD metal framework dentures
- Marginal shaping
- Repairs
- Indirect relines
- Extensions

Processing procedure

- Pouring technique

Delivery form	Art. Code
80 ml liquid DE/IT	6470 7784
500 ml liquid DE/GB/FR/NL	6470 7785
500 ml liquid IT/ES/PT/GR	6607 0736
500 ml liquid FI/TR/SE/DK	6607 0742
100g powder	
pink	6470 7794
pink veined	6470 7796
clear	6470 7798
500g powder	
pink	6470 7805
clear	6470 7809
1000g powder	
pink	6470 7814
pink opaque	6470 7815
pink veined	6470 7816
clear	6470 7817
R50 veined	6470 7818
12000g powder on request	



COLD-CURING DENTURE ACRYLICS

Palapress vario

Denture acrylic with longer working time

Palapress vario is the right choice for multiple, opposing saddles. The advantage of this acrylic is its controlled polymerisation process. With a pouring time of up to 3 minutes, multiple saddles can be poured at the same time – even on different models. Transition to the plastic phase takes place after 4 minutes. This phase lasts up to 9 minutes before the work must be polymerised. That time can be used for pouring opposite saddles, so that several saddles can be simultaneously polymerised to save time.

Advantages

- extended processing time, which enables several denture saddles to be poured in one process
- completion of opposing saddles without interim polymerisation
- excellent tissue tolerance with low residual monomer content
- high fitting accuracy
- available in five colours
- high color stability
- no tertiary amine

Indication

- CoCr RPD metal framework denture with opposing saddles
- Partial dentures
- Repair material
- Marginal shaping
- Indirect relines
- Extensions

Processing procedure

- Pouring technique

Delivery form	Art. Code
80 ml liquid DE/IT	6470 7863
500 ml liquid DE/GB/FR/NL	6470 7864
500 ml liquid IT/ES/PT/GR	6607 0735
100g powder	
pink	6470 7870
clear	6470 7873
500g powder	
pink	6470 7879
clear	6470 7882
1000g powder	
pink	6470 7889
pink opaque	6470 7890
pink veined	6470 7891
clear	6470 7892
R50 veined	6470 7893
12000g powder on request	



HEAT-CURING DENTURE ACRYLICS

Paladon 65

The legendary heat-curing denture acrylic

As the inventor of heat-curing denture acrylics, Kulzer has set standards for more than 80 years with time-tested Paladon. Its consistently refined mechanical properties permit very user friendly and flexible processing and simultaneously guarantee high quality and economical denture production. Paladon 65 can be processed easily without complicated equipment. Its excellent plastic consistency allows the putty to be packed very easily.

Advantages

- Long term stability
- User friendly long processing time
- Several dentures can be created simultaneously
- Low polymerisation shrinkage
- Low residual monomer content immediately after preparation
- Excellent consistency
- High colour stability
- Available in four colours

Indication

- Full dentures
- Partial dentures
- Extensions
- Indirect relines

Processing procedure

- Press and pack technique
- Injection technique with Palajet

Delivery form	Art. Code
80 ml liquid DE/IT	6470 7673
500 ml liquid DE/GB/FR/NL	6470 7674
500 ml liquid IT/ES/PT/GR	6607 0740
500 ml liquid FI/RU/SE/DK	6607 0746
100g powder	
pink	6470 7687
500g powder	
pink	6470 7699
1000g powder	
pink	6470 7706
pink veined	6470 7708
clear	6470 7710
R50 veined	6470 7711
12000g powder on request	



Paladent 20

Dental acrylic for fabrication of full and partial dentures

Paladent 20 – its well-balanced properties make it economical to use and guarantee high-quality dentures at a reasonable price.

Paladent 20 has very good mechanical properties. It can be processed easily without additional equipment. Its plastic consistency allows the putty to be packed very easily. In addition, it has a very long working time of up to 30 min, allowing the production of several dentures simultaneously.

Paladent 20 has a good colour stability and a low residual monomer. These points guarantee that the patient can wear the denture for many years without any problems. The colours such as R50 are excellent colour matches to all other Kulzer denture materials while R50 allows individual choice of colour, invisible repairs and extensions.

Advantages

- Long working time up to 30 min (depends on room temperature)
- Superiour mechanical properties
- Excellent colour stability and low residual monomer
- Economical for use in the dental laboratory
- Exceptional smooth surface

Indication

- For fixed and removable prosthetic devices

Delivery form	Art. Code
500ml liquid	6470 7772
1000g powder	
shade 41	6600 5191
R50 veined	6470 7776
pink veined	6471 0147
12000g powder on request	

DENTURE REPAIRS

Paladur

Efficient denture repair, even without a pressure polymerisation device

Easy processing and its drop-forming, liquid consistency permit secure repairs or relines – simply and quickly. Ingenious, extremely well matched formulation permits curing in thinner layers without requiring polymerisation devices – it simply cures in air. Its low shrinkage contributes to the preservation of accurate denture fit after repair. A wide variety of colours and excellent colour match with the entire range of Kulzer dental materials achieve invisible results on repairs and relines.

Advantages

- Extremely easy processing
- Fast polymerisation
- Good chemical bonding
- Can be used without pressure polymerisation unit
- Available in four colours
- Colours match with the entire range of Kulzer denture acrylics
- Low polymerisation shrinkage

Indication

- Extensions
- Marginal shaping
- Repairs
- Reattachment of teeth
- Partial and full indirect relines

Processing procedure

- Pouring procedure

Delivery form	Art. Code
80 ml liquid DE/IT	6470 7937
500 ml liquid DE/GB/FR/NL	6470 7938
500 ml liquid IT/ES/PT/GR	6607 0726
500 ml liquid FI/SE/DK	6607 0741
100g powder	
pink	6470 7945
clear	6470 7948
500g powder	
pink	6470 7954
pink veined	6470 7956
clear	6470 7957
1000g powder	
pink	6470 7963
pink veined	6470 7965
clear	6470 7966
R 50 veined	6470 7967
12000g powder on request	

Paladent RR

Repair material for Paladent 20

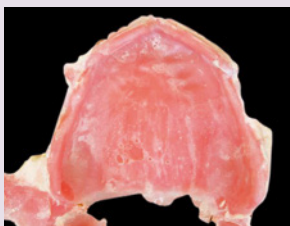
An additional component for Paladent 20 is Paladent RR. It is a self curing acrylic used for repairs. You can order this product only in a bulk container. To order this product please contact your local dealer.



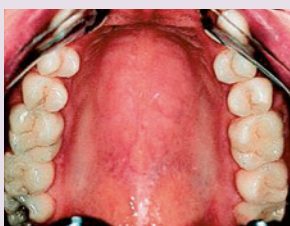
TROUBLESHOOTING DENTURE BASE MATERIALS

Possible Cause**Bubbles and Porosities**

1. Incorrect mixing and filling.
2. Plaster model too dry.
3. Insufficient insulation, insulating layer too thick or puddles.
4. Insulating liquid doesn't work properly.
5. Wrong pressure for polymerisation.
6. Not enough acrylic in filling cylinder.
7. Wrong polymerisation time (too early or too late).
8. Not enough acrylic after press-and-pack technique (e.g. Paladon 65).
9. Heating up too fast (e.g. Paladon 65).

**Basal Discoloration**

1. Insufficient boiling out.
2. Contaminated insulation.
3. Insulating material contains alcohol, oil or other additives.
4. Insulating layer still wet, insufficient drying.
5. Wrong type of plaster used (type 1 or 2, or blue plaster).
6. Impression is contaminated.
7. Boiling out units – different wax dissolving liquids.
8. Boiling out units – boiling time too long.
9. Applying insulating liquid on a cold plaster.

**Allergic Reaction**

1. Rough basal area.
2. Too short polymerisation time or wrong polymerisation temperature.
3. After finishing, denture not stored in water.
4. Denture recently relined.

**Acrylic does not cure properly**

1. Acrylic was placed in the pressure pot too early.
2. Water temperature too low. Polymerisation time too short.
3. Either components mixed up or product is contaminated.
4. Expiring date is over.

Corrective Action

Bubbles and Porosities

1. First: Place specified amount of liquid. Second: pour powder during stirring. 30 sec. mixing thoroughly – 30 sec. saturation time.
2. Place plaster model 10–15 min. in lukewarm water.
3. Apply two thin layers of Aislar on well saturated plaster model (hot or warm) Interdental areas have to be cleaned carefully.
4. Expiry date? Protect from excessively bright light (sunlight). Always use fresh liquid in a separate small bowl, use clean brush, don't pour residual insulation back into the bottle. Protect it from particles of plaster and don't leave brushes with metal sleeves or other metal instruments in the insulating liquid.
5. 2 bar of pressure (cold cure) consider dwelling time for Paladon (heat cure).
6. Use dosing unit to avoid wrong mixing ratio.
7. Read user instructions for correct polymerization time.
8. Check for excess material around the flask.
9. Recommendation: Kulzer Polymerisation (30 min, 70°C, 30 min boiling).

Basal Discoloration

1. Plaster model has to be completely cleaned.
2. Expiry date? Protect from excessively bright light (sunlight). Always use fresh liquid in a separate small bowl, use clean brush, don't pour residual insulation back into the bottle. Protect it from particles of plaster and don't leave brushes with metal sleeves or other metal instruments in the insulating liquid.
3. Don't use insulating materials that contain alcohol or oil.
4. Before applying acrylic on plaster the surface has to be dry and shiny. Avoid puddles (fast drying on hot plaster).
5. Recommendation: Type 3 Octa Dur yellow.
6. Impression has to be carefully cleaned to remove blood, saliva, disinfection solution, rinse with clear water.
7. Daily cleaning units. Dosing in accordance with user instructions. Recommendation: don't use wax dissolving materials, just plain hot water.
8. Flask placed in hot water (5 to 7 min). Wax can be easily removed in whole pieces. Remove residual wax with plain boiling water.
9. Prolonged drying time of insulating liquid on cold plaster.

Allergic Reaction

1. Treatment of impressions has to be considered, such as insulating and casting plaster models, also too long steam-cleaning or boiling time.
2. Cold curing acrylics 15–20 min (depends on denture acrylic), 55°C, 2 bar. Injection procedure 30 min, 55°C, 2 bar. Heat-curing acrylics in accordance with Kulzer water-bath polymerisation: heating up to 70°C in 30 min, maintain temperature 90 min. Heating up to boiling temperature and keep it boiling for another 30 min. Let it cool down slowly (best in water) for at least 30 min on bench.
3. Recommended: store completed denture in water, plain water without any additions (overnight) especially at patient's home.
4. Recommended: store completed denture in water, plain water without any additions (overnight) especially at patient's home.

Acrylic does not cure properly

1. Consider working time.
2. Cold curing acrylics 15–20 min (depends on denture acrylic), 55°C, 2 bar. Injection procedure 30 min, 55°C, 2 bar. Heat curing acrylics in accordance with Kulzer water-bath polymerisation: heat up to 70°C over 30 min., maintain temperature 90 min. Heat up to boiling point and keep it boiling for another 30 min. Let it cool down slowly (best in water) for at least 30 min. on bench.
3. Control of materials.
4. Check production and expiry dates.

TROUBLESHOOTING DENTURE BASE MATERIALS

Possible Cause**Bad Surface**

1. Insufficient insulating material.
2. Insufficient cleaning of impression.
3. Additives in boiling water like soap, washing powder, alcohol etc.
4. Excessive boiling-out and steam-cleaning time.
5. Insulation has changed: watery, spoiled, no longer chemical reaction with plaster.
6. Rough plaster surface.
7. Plaster too hot.
8. White spots or particles caused by condensed water during cooling in the refrigerator or excessive humidity.

**Gap Building/Rocking Denture Base**

1. Pressure too high.
2. Pressure pot has been opened during polymerisation.
3. Insulating material was too thick.
4. Distortion because of thermal damage to cold-curing materials.
5. Cooling too fast and flask opened too soon.
6. Incorrect mixing ratio.
7. Steam cleaning too intensive.
8. Pressure during polishing too high.

**Discoloration Direction Denture-Base Margin**

1. White lines visible in interdental areas.
2. Injection (PalaXpress) was too early.
3. Insufficient mixing.
4. Wrong mixing ratio.
5. Bluish lines out of interdental areas into denture.

**Teeth "Pop Off" Denture Base Material**

1. Acrylic teeth are not roughened.
2. Silicon layer around teeth.
3. No Palabond was used on acrylic teeth.
4. Too long a time between applying Palabond and acrylic.
5. Film of wax on teeth after boil-out.

**Cracks and Breakage**

1. Incorrect powder/liquid ratio.
2. Flask still too hot during deflasking.
3. Shock cooling of flask with cool water.
4. Tensions caused by not relining denture.
5. Teeth are in wrong contacts.

Corrective Action

Bad Surface

1. Apply two thin layers of Aislar, each layer must dry properly.
2. Impression must be cleaned carefully to remove blood, saliva, disinfection solution. Rinse with clear plain water.
3. Just use clear boiling water for removing wax. No additives.
4. Avoid steam-cleaning and excessive boiling time.
5. Expiry date? Protect from excessively bright light (sunlight). Always use fresh liquid in a separate small bowl, use clean brush, don't pour residual insulation back into the bottle. Protect it from particles of plaster and don't leave brushes with metal sleeves or other metal instruments in the insulating liquid.
6. Use mixing ratio in accordance with user instruction sheet.
7. Plaster has to be cold, at least lukewarm.
8. Opened packages of powder must be stored dry between 10°C and max. 25°C.

Gap Building/Rocking Denture Base

1. 2 bar of pressure.
2. Keep pressure pot closed during polymerisation (look after correct polymerisation time).
3. Plaster model double insulated with Aislar (thin layers).
4. Don't heat up cold-curing materials (over 55°C).
5. Slow cooling down (on the bench).
6. Mixing ratio as in user instructions.
7. Cleaning with soft toothbrush and toothpaste.
8. Reduce pressure, watch temperature.

Discoloration Denture-Base Margin

1. After applying insulating liquid careful cleaning is necessary to avoid puddles of insulating liquid in interdental areas.
2. Inject when surface is complete dull. Consider effect of room temperature.
3. 1) mixing time approximately 30 seconds. 2) dwelling time 30 seconds.
3) after that pour into prepared plastic cylinder and wait until surface is completely dull.
4. Follow mixing ratio specified in the user instructions of your acrylic material.
5. Change brush when metal sleeves show corrosion.

Teeth "Pop Off" Denture Base Material

1. Teeth must be roughened with a diamond bur just before applying acrylic material.
2. Use other silicone or plaster.
3. Palabond is applied on roughened teeth twice.
4. Palabond works only 10 minutes after applying. Only during that time will acrylic bond.
5. Don't steam; use clean water in boil-out tank; final rinse should be made with absolutely clean, boiling water; finally clean the teeth with monomer-liquid.

Cracks and Breakage

1. Use proper powder/liquid ratio (e.g. PalaXpress – casting technique 10g:7 ml, injection technique 30g:15 ml).
2. Slow cooling, either in water or dry on bench
3. Slow cooling, either in water or dry on bench
4. Regular visits at dentist
5. Corrections by dentist (grinding or relining)

MODELLING ACRYLIC AND CUSTOMISED IMPRESSION TRAYS

Palavit M

Size stable acrylic for fabrication of permanent models

Palavit M is the first choice for permanent models in the dental laboratory – it is especially suitable for orthodontic work. This cold curing acrylic is intensive yellow in colour and guarantees secure and fast curing without technical aids. The exact reproduction of details and low shrinkage after curing guarantee perfect permanent models with long-term stability.

Advantages

- Fast and complete polymerisation
- Low material usage with layer composition
- Exact reproduction of detail
- Low polymerisation shrinkage
- Can be used without polymerisation unit

Indication

- Permanent models for orthodontics

Processing procedure

- Two-component system (powder/liquid)
- Pour out the impression material in a thin, even layer using a swirling motion
- Cures in air (cold-curing resin)
- Completion of permanent model using gypsum

Delivery form	Art. Code
500ml liquid	6470 8034
500g powder	6470 8036



Palavit L

Acrylic for customised impression trays with high shape stability

Palavit L is the classic cold curing acrylic for the production of impression trays. The material is characterised by safe and fast curing without requiring a polymerisation unit – features that achieve stiff and tension-free impression trays. The intensive yellow colour achieves good reproducibility on the model. The sum of all these properties make Palavit L a positive and very user-friendly material.

Advantages

- Long processing time
- Sure and quick curing
- Cures without polymerisation device
- Good adaptation to the gypsum model
- Free from distortion and tension
- High shape stability
- Low shrinkage
- No dust formation when grinding

Indication

- Custom impression trays

Processing procedure

- Two-component system (powder/liquid)
- Cures in air (cold-curing resin)
- The acrylic is shaped into an individual impression tray on the isolated model

Delivery form	Art. Code
500ml liquid	6470 8001
1000g powder	6470 8011



Palavit G

Modelling material for the casting technique

Palavit G is a self curing two component modelling synthetic material formed from powder and liquid. Palavit G is well adapted for efficient manufacturing of cast models of all kinds.

Advantages

- Individual processing with brush or wash technique
- Stable, precise fit frameworks
- Residue free firing
- Excellent grinding qualities
- Optical control of layer thickness (red stain)

Indication

- Manufacturing of crown and bridge frameworks
- Manufacturing of primary and secondary attachment parts
- Blocking (solder preparation)
- Manufacturing of individual anterior pin guide plates

Delivery form	Art. Code
Liquid, powder	
80ml liquid	6470 7632
500ml liquid	6470 7633
100g powder	6470 7636
500g powder	6470 7637



MODELLING ACRYLIC AND CUSTOMISED IMPRESSION TRAYS

Palatray XL

Stable, light-curing plate material for customised applications

Palatray XL is a light-curing plate material in extra large, anatomically preshaped sheets for any size jaw. It is highly suitable for preparing functional and custom trays.

The material is supplied in a stable, light-proof plastic box. The attractive peach fragrance is on a special aroma carrier and can therefore be discarded if desired.

Advantages

- Optimised, anatomically preshaped sheets
- Extra-large sheets, depending on jaw size
- High tearing resistance and stability
- High fracture resistance
- Longer processing time
- Free from distortion, stable shape
- Attractive peach fragrance
- Stable plastic box (portions remaining after preparation can be returned to box)

Indication

- Functional and custom trays
- Bite records
- Base sets
- Supporting pin records

Processing procedure

- Single-component material
- Cures in light polymerisation unit (UniXS, Heraflash, HiLite power)
- Adapt a sheet of Palatray XL on to the model exactly and reduce the edges to the margin line
- Use excess material to form a handle

Delivery form	Art. Code
50 pieces in box	6471 5806



LABORATORY SILICONE

Pala Lab Putty

High Definition Laboratory A-Silicone putty material

Pala Lab Putty, was especially designed for accurate and fast working in dental laboratories. The easy 1:1 mixing guarantees high fitting accuracy and exact reproduction of details. Pala Lab Putty can be used in a variety of applications, especially when working with PalaVeneers.

Pala Lab Putty is available in two different Shore A hardnesses with Pala Lab Putty 65 and Pala Lab Putty 90.

Advantages

- Easy to Mix in 1:1 ratio
- Fast setting time (6:00 min)
- High reproduction of details (20 µm)
- Good tear resistance
- Dimensionally stable over time (<0,05 % after 24 h)
- Resistant to standard polymerisation temperatures
- Simple dosing with included spoons

Application

- Matrix for fabrication of hybrid over dentures
- Matrix for construction of provisional
- Matrix for setting anterior teeth in an immediate denture
- Matrix for construction of bars
- Matrix for processing teeth on a partial denture
- Duplicating models
- Creating preparation models for the repair
- Insulation of teeth against plaster

Delivery form	Art. Code
Pala Lab Putty 90 3 kg (2 x 1,5 kg)	6605 7432
Pala Lab Putty 90 10 kg (2 x 5 kg)	6605 7433
Pala Lab Putty 65 2,6 kg (2 x 1,3 kg)	6605 7434
Pala Lab Putty 65 9 kg (2 x 4,5 kg)	6605 7435



DEVICES FOR DENTURE PRODUCTION

Palajet

Pneumatic injection unit

The injection unit for the preparation of full dentures has been precisely adapted to the material properties of PalaXpress and is very easy to operate without requiring any application of force. The sophisticated dosing system prevents dosing errors and achieves consistent processing properties. The results speak for themselves in terms of efficient preparation and quality: high-quality full dentures featuring many advantages compared with traditional systems.

Advantages

- Efficient preparation of full dentures
- No bite elevation
- High fitting accuracy and flawless seating
- Minimal post-processing
- Very user friendly
- Maintenance-free operation
- Only requires compressed air connection (4 bar)
- No application of force required to operate

Materials:

- PalaXpress ultra
- PalaXpress
- Paladon 65

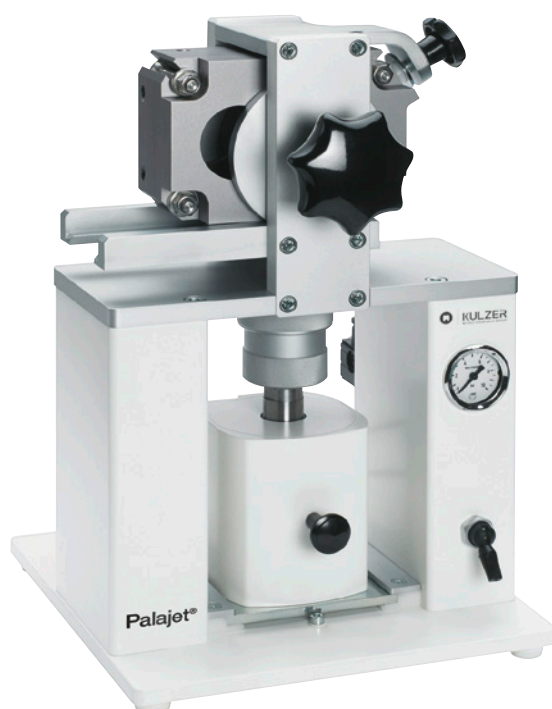
Product contents of base unit:

Base unit incl. injection, cylinder with cover, 1 Palajet Duoflask, 12 inserts for injection cylinder incl. 12 lid inserts, 50 sealing disks, 1 Pala dosing cup, 1 Pala mixing cup, 1 Pala mixing spatula, sprue wax (32 strips – Ø 7 mm, 32 strips – Ø 3 mm), timer, flask filling basket

Technical data

Pressure connection	max. 10 bar
Nominal pressure	4 bar
Plunger rate	0–50 mm/sec.
Pressing force on cylinder	ca. 2 kN
Dimensions L×W×H in mm	400×290×265
Weight in kg	ca. 13,5

Art. Code 6602 0450



Palajet Duoflask

Double flask for Palajet

Preparing and polymerising two dentures in one go – no problem with Palajet duoflask combined with the Palajet injection unit.

Advantages

- Efficient preparation of complete full upper and lower jaw dentures
- Permits the preparation of two dentures in one step
- Saves on gypsum
- Cuts the time required for completion in half
- Use placeholder if preparing only one denture

Product contents:

Palajet duoflask includes box spanner and spacer, placeholder

Art. Code 6471 5798



Palajet single flask

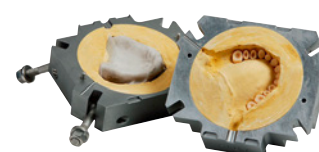
Single flask for Palajet

The completed wax setup can also be invested in a single flask and injected using Palajet.

Advantages

- Familiar processing
- Easy handling
- Shorter pouring sprues

Art. Code 6471 0524



DEVICES FOR DENTURE PRODUCTION

Palamat elite

Pressure polymerisation unit for cold-curing and heat-curing acrylic

The Palamat elite high-pressure polymerisation unit offers 4 different temperature settings for the processing heat-curing and cold-curing acrylic, to be selected based on the material and as desired. The unit fits up to 3 Palajet flasks, and consequently up to 6 dentures can be polymerised at the same time.

Advantages

- Can be used with different denture acrylics
- Timer function for customised polymerisation
- Preset selectable polymerisation times
- Accepts almost all articulator sizes
- Fits up to 3 Palajet flasks
- Easy installation
- User-friendly LED display

Temperature ranges

- Cold-curing acrylic 45 °C, 55 °C
- Heat-curing acrylic 70 °C, 100 °C (Kulzer water bath progressive polymerisation)
- Heat-curing acrylic 100 °C (short-term polymerisation, long-term polymerisation)

Product contents:

Palamat elite with protective hood, compressed air hose, nozzle and hose clip

Technical data

Nominal voltage	100 V 120 V 230/240 V
Nominal frequency	50/60 Hz
Power consumption	650 W
Nominal pressure	2 bar
Pressure port connection	3 to 10 bar
Time programming	up to 10 h
Operating temperature of water	45 °C, 55 °C, 100 °C Kulzer water-bath polymerisation
Dimensions LxWxH in mm	340x225x340
Weight in kg	5.5

Art. Code

100 V	6605 7661
120 V	6605 7662
230 V / 240 V	6605 7663



Palamat elite flask tray with pins

Flask tray with pins with flexible layout

With the new flask tray you can position several models and flasks on the support plate at the same time.

The new pin system, comprising 12 pins, helps you to keep the models in the right place. The long, flexible straps allow you to remove the models from the Palamat elite simply and safely without coming into contact with the hot water.

The flask tray can be used to cure up to two Duoflask flasks at the same time.

Benefits

- Flexible layout
- Safe handling
- No contact with hot water
- Durable materials

Delivery form

Art. code

Flask tray
with pins; Palamat

6605 6911



CONSUMABLES FOR FABRICATING DENTURES

Aislar

Complete isolation for acrylic dentures

Good isolation is fundamental to well fitting prosthetic work. Aislar is a formaldehyde-free aqueous solution based on alginate used to isolate gypsum surfaces from prosthetic acrylics and composites. The isolation must meet various demands, such as quick drying time, smooth surface and complete separation. Aislar features these properties both in heat-curing and cold-curing prosthetic acrylics.

Advantages

- Dentures with maximum fitting accuracy
- Smooth surfaces
- Trimming reduced to a minimum
- Short drying time, no layers formed
- Optimal separation
- Non-reactive secure polymerisation on all surfaces
- Formaldehyde free

Application

- Gypsum to acrylic
- Gypsum to composite
- On all gypsum materials
- For heat-curing and cold-curing acrylic

Processing procedure

- Apply in two thin layers on (warm/cold) gypsum.

Delivery form	Art. Code
1 x 80 ml liquid	6470 8055
1 x 500 ml liquid	6470 8057
2 x 1000 ml liquid	6470 8058



Palabond

Secure bonding agent for use between denture material and acrylic teeth

Consistent use of the transparent bonding agent Palabond makes prosthetic teeth that fall out a thing of the past. It not only increases the bonding between the teeth and the denture base but also improves the bonding between repairs and denture base materials.

Advantages

- Secure bonding, even in difficult situations
- Durable and gap-free bonding
- Transparent, invisible colour
- Usable for all prosthetic materials and acrylic teeth

Application

- Between denture material and acrylic teeth
- Between denture material and repairs

Processing procedure

- Surfaces of the tooth are roughened with a coarse diamond
- Effective within 10 minutes after application
- No light-curing required

Delivery form	Art. Code
45 ml liquid	6470 8082



Palaferm

Good insulation is the basis for a precisely fitted prosthetic restoration.

Palaferm was specially developed for the insulation of acrylics and acrylic models and is also suitable for the insulation of plaster. A single coat painted on the acrylic produces a wafer-thin insulation film which can easily be removed again manually later.

Advantages

- Only a single application necessary on acrylics
- Rapid drying of the insulation film
- Formation of a thin insulation film
- Protection of non-polymerised material from external influences
- Insulation film can easily be removed from the acrylic

Application

- All fields of application in which methacrylate acrylic applied in the laboratory should be insulated against acrylics, acrylic models, CAM models, acrylic crowns etc. and against plaster and a precise separation effect as a result of a thin insulation film is required. E.g. production of splints, drilling templates, framework models with modelling acrylic.

Delivery form	Art. Code
80 ml liquid	6470 7627



ACCESSORIES FOR THE PALAJET SYSTEM

PalaXpress Inserts

for injection cylinder

For use in the Palajet injection unit

Delivery form	Art. Code
12 count, includes 50 sealing discs	6471 0519
20 count, includes lids	6471 4213



PalaXpress dosing cup

For measuring the correct ratio of
liquid and powder for use with the
Palajet system

Delivery form	Art. Code
1 piece	6471 0521



PalaXpress sprue wax

For preparing an optimal injection and
vent sprue

Delivery form	Art. Code
32 strips x 7 mm, 32 strips x 3 mm	6471 0520



6.6 CHARACTERIZING/FINISHING

CHARACTERISING OF DENTURES

Pala cre-active

Light-curing colourfluid system for customised characterisation of dentures

These light-curing colourfluids in combination with the Signum connector for heat-curing and cold-curing resins are particularly suitable for customised characterisation of full and partial dentures and implant-retained dentures. The Pala cre-active colourfluids can be mixed into the Pala cre-active gingiva material as colour intensifying agents.

Thanks to the variety of consistencies and colour shades, highly customised gingival regions can be created that feature smooth or rough surfaces with transparent, light red or dark red effects.

Advantages

- Easy, quick application
- Gingival customisation easy and fast application
- Various consistencies available (paste/liquid)
- Easily trimmed and polished

Indication

- Customisation of full and partial dentures (based on methylmethacrylate)
- Customisation of implant dentures
- Preparation of gum masks

Processing procedure

- Single-component material
- Surface of the prosthesis is roughened with a coarse diamond
- Apply Signum connector
- Pala cre-active can be applied directly to the cured prosthetic resin with a brush or modelling instrument
- Cures in light polymerisation unit (Uni XS, Heraflash, HiLite power, HiLite power 3D)

**Pala cre-active (set)**

Delivery form	Colours
12x3 g	Pala cre-active (white, polar, pink, red, maroon, gingiva pink, black, gum, gingiva shade 200, gingiva R50, gingiva light pink, gingiva clear)
1 x	Pala cre-active Shade Guide
1 x	brush
20x	cannulae (metal), 1.2 mm
5x	cannulae (plastic), 1.87 mm
Art. Code	6603 3445

New Pala cre-active (set)

Delivery form	Colours
7x3 g	Pala cre-active (gingiva purple, gingiva pale pink, gingiva pink veined, gingiva fresh pink, gingiva clear, gum, gum opaque)
5x1 g	Pala cre-active (white, blue, pink, red, brown)
1 x	Pala cre-active Shade Guide
2x	brush
Art. Code	6607 5552

Pala acrylic fibres

For independent preparation of veined denture material and for customising dentures

Delivery form	Art. Code
5g in bag	6470 8090

**Pala cre-active (refills), 1 x 3 g**

Colour	Art. Code
Colourfluids	
white	6603 3447
polar	6603 3448
pink	6603 3449
red	6603 3450
maroon	6603 3461
black	6603 3462
Gingiva	
gingiva pink	6603 3463
gingiva shade 200	6603 3464
gingiva R50	6603 3465
gingiva light pink	6603 3466
gingiva clear	6603 3467
gum (paste-like)	6603 3468

New Pala cre-active (refills)

Colour	Art. Code
Colourfluids 1 g	
white	6607 5551
polar	6607 5548
pink	6607 5549
red	6607 5550
brown	6607 6203
Gingiva 3 g	
purple	6607 5539
pale pink	6607 5541
pink veined	6607 5543
fresh pink	6607 5544
clear	6607 5546
Gum 3 g (paste-like)	
gum	6603 3468
gum opaque	6607 5547

**Signum connector, 5 ml**

Art. Code 6471 4211

Signum insulating gel

Art. Code 6470 6307

FINISHING MATERIAL FOR FABRICATING DENTURES

Palaseal**Light-curing denture and sealing resin**

Palaseal is a light-curing, transparent sealing resin that bonds to any denture materials, temporary crowns and bridges. The patient receives an aesthetically and functionally comfortable denture.

Advantages

- High surface hardness and abrasion resistance
- Solvent resistance to denture cleaners
- Easy adhesion to all denture acrylics
- Smooth surface
- Long term bonding to acrylics

Indication

- Surface sealing of denture or repairs
- Surface sealing of temporary crowns or bridges based on PMMA
- Sealing of permanent models

Processing procedure

- Dry denture before use
- Single-component resin
- Sandpaper the denture and prepolysh with pumice
- Curing in light polymerisation unit (UniXS, Heraflash, HiLite power)

Delivery form	Art. Code
Combination package	
2 x 15 ml Palaseal, 1 x 45 ml Palaclean 5 x brush 1 x mixing panel	6470 8061
Unit package	
2 x 15 ml Palaseal	6470 8063

**PalaPolish****Cream for polishing denture acrylics**

Pala Polish is a new denture polishing cream designed to quickly and easily polish all types of acrylic appliances. This unique polishing formula offers a high shine and special characteristics allowing residual scratches to be removed during the polishing process and eliminates the need for pumicing.

Advantages

- Simultaneously removes scratches and leaves a high shine on dental appliances
- No need for pumice
- Reduces finishing and polishing time
- Allows technician to polish at their normal workbench in a dry environment
- Reduces the amount of different polishing pastes required as it can be used on various materials

Indication

- Dentures
- Partial dentures
- Orthodontic Appliances
- Composite Materials

Delivery form	Art. Code
80 g	6606 7855

**Palaclean****Brush cleaner**

In conjunction with the use of Palaseal, Palaclean is an excellent brush cleaner.

Application

Soak the brush in Palaclean for a few minutes, briefly rinse with clear water, then dry off.

Delivery form	Art. Code
Unit package	
1 x 45 ml Palaclean	6470 8064



6.7 ACCESSORIES

AIDS FOR FABRICATING DENTURES

Foils for mixing plate

For clean mixing of laboratory silicones

Delivery form	Art. Code
20 cm, 100 pieces	6470 8085

**Pala mixing cup**

For clean mixing of our denture acrylics

Delivery form	Art. Code
1 piece	6470 8088

**Powder bottles, 100 g**

For optimised dosage of small portions of denture material (powder)

Delivery form	Art. Code
Powder bottles for 100 g, 5 pieces	6470 8097

**Shade guide**

For optimised colour choice

Delivery form	Art. Code
Pala shade guide	6471 2020

**Pala dosing cup**

For dosing relatively large quantities of denture material

Delivery form	Art. Code
1 piece	6470 8098

**Brown glass bottles, 80 ml**

For optimised dosage of small portions of denture material (liquid)

Delivery form	Art. Code
Brown glass for 80 ml, 5 pieces	6470 8096

**Pala mixing spatula**

For efficient, homogeneous mixing of powder and liquid

Delivery form	Art. Code
1 piece, metal	6470 8089

**Brush for Aislar**

For optimal implementation of universal isolation

Delivery form	Art. Code
5 pieces	6470 8092

**PE cut-outs**

For test pressings of heat-curing acrylics (e.g. Paladon 65) fabricated in press-and-pack technique

Delivery form	Art. Code
ca. 80 pieces, 100x80x0.025 mm	6470 8087



ACCESSORIES

PalaMeter
The versatile measuring instrument for
prosthetics.

The PalaMeter has been developed to produce a tool that simplifies your daily work in many ways. The practical design, the flexible material and the helpful colour-coding make it particularly easy to use. The clear layout and the economical purchase price are additional advantages of the PalaMeter.

- Advantages**
- Easy to use
 - Flexible uses
 - Universal because it combines a range of dental measuring instruments

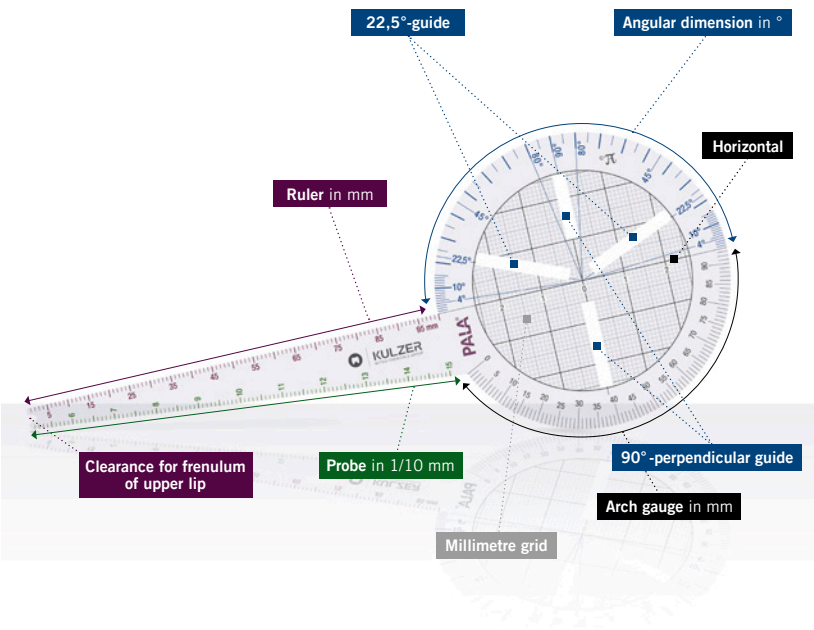
Delivery form	Art. Code
Introductory package Instructions with a PalaMeter	6604 6015
Three PalaMeter Package Instructions with three PalaMeters	6604 6016

PalaBox

The PalaBox is an ideal means of storing your dental work in the laboratory, for transport or at the dentist Dimensions 300x200x140 mm.

- Advantages**
- Optimum protection with foam lining
 - Slot for personal messages
 - Extra slot for business cards
 - Easily found with conspicuous and modern colour
 - Temperature and weather-resistant
 - Easily handled size

Art. Code	6604 4742
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MELIODENT – COST-EFFECTIVE PRODUCTION OF DENTURES

The Meliodent Line from Kulzer offers a complete and cost-effective system for the production of dentures. From the isolating agent to the orthodontic material – the laboratory has a tried and tested system from a competent partner.

Optimised processing methods have improved the positive properties of this well known generation of the Meliodent Line for denture bases. Kulzer – as the initiator – is one of the world's leading manufacturers of dental technologies. The new Meliodent Line offers you more than 80 years of experience in the field of denture materials.

Meliodent shade guide

Delivery form	Art. Code
For optimised colour choice.	6471 5172



Meliodent Heat Cure

The large variety of colours satisfies almost all needs. Whether clear, standard pink or exotic colours – almost all regional colour exceptions can be satisfied. Compared to other products, Meliodent Heat Cure plays a special role as a denture material: it is most probably the only material with such a large variety of colours!

Delivery form	Art. Code
500ml liquid	6471 3308
1000g powder	
clear	6471 3213
H5 vein	6471 3271
live pink	6471 3267
pink	6471 3219
light reddish pink	6471 3256
A26 pink SR	6471 3261
pink vein	6471 3238
reddish vein	6471 3228
standard pink	6471 3233
vein	6471 3222
D30 vein	6471 3251
vein FR	6471 3247
vein plus	6471 3243
vein TL	6471 3264
vein E	6605 3975
D30 vein	6471 3251



MELIODENT – COST-EFFECTIVE PRODUCTION OF DENTURES

Meliudent Rapid Repair

An additional component is Meliudent Rapid Repair, an acrylic used for repairs, with material and colour properties that suit this top quality denture base material perfectly.

Advantages

- An economical advantage for use in the dental laboratory
- Broad spectrum of colour shades to suit all patients
- Short polymerisation time

Delivery form	Art. Code
500ml liquid	6471 3415
1000g powder	
clear	6471 3398
H5 vein	6471 3413
light reddish pink	6471 3409
live pink	6471 3412
pink	6471 3400
A26 pink SR	6471 3410
pink vein	6471 3405
standard pink	6471 3404
vein	6471 3401
D30 vein	6471 3408
vein plus	6471 3406
vein FR	6471 3407
vein TL	6471 3411



Meliudent Orthodontic

The trio of these top quality acrylics from Kulzer is completed with Meliudent Orthodontic. This acrylic meets the specific demands in orthodontics as a particularly stable material in the salt and pepper technique. This allows orthodontic appliances to be made in a fast and efficient way.

Benefits

- Increased polymer bead penetration ensures quicker easier working and a stronger and more rigid cured acrylic base allowing stresses to be better absorbed.
- Minimum deformation change on polymerisation
- Broad spectrum of colour shades to suit all patients

Advantages

- Increased polymer bead penetration ensures quicker easier working and a stronger and more rigid cured acrylic base allowing stresses to be better absorbed.
- Minimum deformation change on polymerisation
- Broad spectrum of colour shades to suit all patients

Delivery form	Art. Code
500ml liquid	6471 3416
1000g powder	
clear	6471 3414



Meliocsep Universal

Alginate-based isolating agent. It can be applied in a very thin layer and separates plaster and acrylic materials efficiently. The model surface is sealed chemically resulting in extremely smooth denture surfaces.

Usage

- Separation Gypsum to acrylic
- Separation Gypsum to composite
- Can be used on all gypsum materials
- For heat curing and cold curing Acrylic

Advantages

- Accuracy of fit
- Smooth surfaces
- Reduced trimming
- Short drying time
- Optimal separation
- Non-reactive to denture base material
- Formaldehyde-free
- Toxicologically and physiologically safe
- Good storage stability

Delivery form	Art. Code
2 x 1000 ml liquid	6471 3313



HERA®. FOR GOOD REASONS.

If you need high-quality and long life dentures – Hera alloys have everything you need. With decades of experience in the development and manufacture of dental alloys, Hera is the leading brand. Hera by Kulzer has the right alloy for all indications and requirements.

If you decide on the framework materials made by Hera, you have good reason. Better yet; seven good reasons. Seven quality components combined to form a strong base for perfect, accurate, and precise fitting products of high quality and process safety. Hera by Kulzer.

SEVEN VALUABLE REASONS AS THE BASIS FOR PERFECT RESULTS

Hera by Kulzer, a brand defined by perfect alloys, and the products made with them. Hera alloys encompass seven special components representing the values of Kulzer. In combination they form the basis of the high-tech Hera products.

From the model to the alloy to the framework: every link of the restoration process chain incorporates the combination of experience, competence, trust, innovation, quality, Reproduceable precision and success – seven good reasons for selecting products made by Hera and fabricating your own high-quality restorations in the laboratory.

7 FRAMEWORK MATERIALS

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Hera®
Framework Materials

Giving a hand to oral health.



KULZER
MITSUI CHEMICALS GROUP

FRAMEWORK MATERIALS

When dental alloys are discussed, the name Kulzer is always mentioned. This is no wonder, as our alloys are based on more than one hundred fifty-five years of experience in processing precious metals. In-house development and application technology underlines the competence in alloys at Kulzer.

Our casting and ceramic veneering alloys certainly include the right precious-metal alloy of the highest quality for every indication. It is not for nothing that the dental world talks about the gold standard. Bio Herador N, one of the Kulzer alloys that is most commonly used, is a good example: the gold-yellow shading and the high strength make this alloy to a successful premium product. Our non-precious alloys are also suitable for all indications. They are easy to handle, extremely resistant against corrosion, easy to work out, weldable and solderable. We always place quality first. Every batch is comprehensively analysed and not approved if it has passed our rigid internal requirements; for the benefit of the users and patients.

OVER 165 YEARS OF EXPERIENCE.

One of seven good reasons to select Hera.

To make high-quality alloys really perfect the base must be right. And with Hera the base consists of seven particularly valuable reasons. Such as experience. Ultimately, Hera stands for Kulzer and thus for over a century of competence. Whoever selects Hera is trusting an established specialist for highly aesthetic solutions for dentistry. An experienced partner who knows what is wanted.

www.kulzer.com

HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Bio Herador CN from Kulzer is a new high-gold-content ceramic bonding alloy. It is highly compatible and reliable in processing even in demanding indications such as implant-based restorations. It is excellent for casting, polishing and veneering to get a highly aesthetic result.

The compatible composition of Bio Herador CN combines Kulzer many years of experience with precious metals with the requirements of modern dental technology. Beneath Gold, Platinum and Zinc increase strength and hardness and make the alloy extremely durable, even for demanding applications such as wide-span bridges or implant suprastructures. The specially-designed ratio of the alloy ensures a good flow consistency. Rhodium and Tantalum elements that increase the strength of the alloy, make Bio Herador CN short-chipping, making it easy to prepare. Iridium gives the alloy a fine-grained structure, ideal for a highly polished finish. The light oxide colour of Bio Herador CN guarantees highly aesthetic ceramic veneers, e.g. with HeraCeram.

Bio Herador CN

High-gold-content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, extra-high strength, highly aesthetically veneerable, excellent polishing properties, yellow colour.

Advantages

- Gold content 86.6 mass% (precious-metal content 98 mass%)
- high corrosion-resistant
- free from Pd, Ag and Cu
- high modulus of elasticity, high strength (type 4)
- easily polished and milled
- aesthetic veneering with HeraCeram

Indication

- Single crowns
- Bridges of any span length
- Implants
- Milling procedures

Product details	
Composition (Content in mass %)	Au 86.6 Pt 10.4 Zn 1.5 Rh 0.9 Ta 0.2 In 0.2 Ir 0.1 Mn 0.1
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador PF Lot 1040/1010; Herador/Maingold PF Lot 800
Laser welding wire	Bio Herador N Ø 0.3mm / Ø 0.5mm
Delivery form	1 g ingots, rand. weights
Art. Code	1256 2000

Bio SupraCeram

High gold ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, excellent for ceramic veneered implant suprastructures.

Advantages

- Gold content 79.0 mass% (precious-metal content 97.7 mass%)
- Very good thermal shock resistance
- Outstanding final strength
- Palladium and copper free
- Wide indication range
- Specifically designed for implant suprastructures
- Perfectly matched to HeraCeram

Indication

- Single crowns
- Bridges of any span length
- Implants
- Milling procedures

Product details	
Composition (Content in mass %)	Au 79.0 Pt 18.3 Zn 2.0 Ta 0.3 Ir 0.4 Ce X
CTE (25–500°C)	13.7 µm/m*K
Recommended solders	Herador PF Lot 1060S/1040, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1620 0000



FRAMEWORK MATERIALS

HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

BioCeram Plus

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, deep yellow

Advantages

- Unique gold shades
- Easily polished
- Palladium and copper free
- Gold content: 90.0%
- Very high precious metal content 98.15%
- Very good thermal shock resistance
- Wide indication range
- Perfectly matched to HeraCeram

Indication

- Single crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 90.0 Pt 7.9 Zn 1.5 Fe 0.1 Mn 0.1 Nb 0.1 Rh 0.2 Ir < 0.1 Ce < 0.1
CTE (25–500°C)	14.7 µm/m*K
Recommended solders	Herador PF Lot 1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1252 0000**

Bio Herador SG

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 88.7 mass% (precious-metal content 98.4 mass%)
- Universal indication range, suitable for large bridges with more than two units upon installation of special framework strengthening.
- Suitable for milling
- Palladium and copper free
- Contains only gold, platinum, and essential trace elements
- Excellent corrosion resistance

Indication

- Single crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 88.7 Pt 9.49 Zn 1.5 Ir < 0.1 Mn 0.1 Rh 0.2
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1256 0000**

Bio Herador N

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 86.2 mass% (precious-metal content 98.1 mass%)
- Universal indication range, from crowns to large bridges with more than two units, including bridges of maximum span length, upon installation of special framework strengthening.
- Suitable for milling
- Palladium and copper free
- High thermal shock resistance
- Excellent corrosion resistance

Indication

- Single crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 86.2 Pt 11.5 Zn 1.5 Ta 0.3 Ru 0.4 Mn 0.1
CTE (25–500°C)	14.3 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1257 0000**



HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Bio Herador GG

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, rich yellow

Advantages

- Gold content 86.7 mass % (precious-metal content 98.0 mass %)
- Suitable for single crowns and hardened small bridges with one unit
- Palladium and copper free
- Clinically tested
- Excellent corrosion resistance

Indication

- Crowns
- Bridges

Product details

Composition (Content in mass %)	Au 86.7 Pt 11.2 In 1.7 Ir 0.1 Fe 0.3
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1355 0000



Bio Herador MP

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 85.9 mass % (precious-metal content 97.8 mass %)
- Universal indication range from crowns to large bridges with more than two units, upon installation of special framework strengthening
- Superior reproducible processing and veneering capability
- Palladium and copper free
- High thermal shock resistance
- Excellent corrosion resistance
- Good polishability

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 85.9 Pt 11.7 Zn 1.5 In <0.1 Ir <0.1 Mn 0.1 Rh 0.15 Nb 0.5 Fe <0.1
CTE (25–500°C)	14.3 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Herador MP
Delivery form	1 g ingots, rand. weights

Art. Code 1253 2000



Herador EC

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 75.0 mass % (precious-metal content 89.3 mass %)
- Special framework strengthening enables suitability for large bridges with more than two units.
- High thermal shock resistance
- Palladium and copper free

Indication

- Crowns
- Bridges

Product details

Composition (Content in mass %)	Au 75.0 Ag 8.0 Pt 14.3 Zn 2.5 Ta 0.2
CTE (25–500°C)	14.8 µm/m*K
Recommended solders	Herador PF Lot 1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1612 0000



FRAMEWORK MATERIALS

HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Herador MP

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 85.9 mass % (precious-metal content 97.8 mass %)
- Universal indication range from crowns to large bridges with more than two units, upon installation of special framework strengthening
- Superior reproducible processing and veneering capability
- Palladium and copper free
- High thermal shock resistance
- Excellent corrosion resistance
- Good polishability

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 85.9 Pt 11.7 Zn 1.5 In <0.1 Ir <0.1 Mn 0.1 Rh 0.15 Nb 0.5 Fe <0.1
CTE (25–500°C)	14.3 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1253 0000

**Herador PF**

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, bright yellow

Advantages

- Gold content 77.7 mass % (precious-metal content 97.7 mass %)
- Suitable for single crowns and bridges with up to 3 units, and for milling
- Palladium and copper free

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 77.7 Pt 19.5 Zn 2.0 Ta 0.3 Ir 0.5
CTE (25–500°C)	13.7 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1615 0000

**Herador C**

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, rich yellow

Advantages

- Gold content 86.6 mass % (precious-metal content 98.0 mass %)
- Universal indication range, suitable for large bridges with more than two units, after special framework strengthening; reliable and reproducible without additional procedures, easily worked and veneered
- Palladium and copper free
- Corrosion resistant
- Millable
- Wide indication range

Indication

- Crowns
- Bridges
- Milling procedures

Product details

Composition (Content in mass %)	Au 86.6 Pt 10.8 In 1.7 Ta 0.3 Rh 0.6
CTE (25–500°C)	14.4 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1512 0000



HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Herador S

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, bright yellow

Advantages

- Gold content 84.2 mass % (precious-metal content 97.3 mass %)
- Adapted for long span bridge structures and milling procedures
- Light oxide

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 84.2 Pt 7.7 Pd 5.3 In 2.4 Ir <0.1 Ru <0.1 Fe 0.3
CTE (25–500°C)	14.3 µm/m*K
Recommended solders	Herador Lot 1070/1060/ 1060S, Herador/Maingold Lot 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1700 0000



Herador G

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, bright yellow

Advantages

- Gold content 82.8 mass % (precious-metal content 99.0 mass %)
- Suitable for single crowns and bridges with one unit
- Palladium free
- Many years of user experience
- Ideal composition with only four alloy components

Indication

- Crowns
- Small bridges

Product details

Composition (Content in mass %)	Au 82.8 Pt 16.0 In 1.0 Ir 0.2
CTE (25–500°C)	13.9 µm/m*K
Recommended solders	Herador Lot 1060S, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1510 0000



Herador GG

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 86.7 mass % (precious-metal content 97.8 mass %)
- Suitable for single crowns and bridges with one unit
- Palladium free
- Rich yellow colour

Indication

- Crowns
- Small bridges

Product details

Composition (Content in mass %)	Au 86.7 Pt 11.0 Cu 0.2 In 1.7 Ir 0.1 Fe 0.3
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1350 0000



FRAMEWORK MATERIALS

HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Bio Heragold B2

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 88.7 mass % (precious-metal content 98.4 mass %)
- Universal indication range, suitable for large bridges with more than two units upon installation of special framework strengthening.
- Suitable for milling
- Palladium and copper free
- Contains only gold, platinum, and essential trace elements
- Excellent corrosion resistance

Indication

- Single crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 88.7 Pt 9.49 Zn 1.5 Ir <0.1 Mn 0.1 Rh 0.2
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1256 6000

**Bio Heragold B**

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, yellow

Advantages

- Gold content 86.2 mass % (precious-metal content 98.1 mass %)
- Universal indication range, from crowns to large bridges with more than two units, including bridges of maximum span length, upon installation of special framework strengthening.
- Suitable for milling
- Palladium and copper free
- High temperature strength
- Excellent corrosion resistance

Indication

- Single crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 86.2 Pt 11.5 Zn 1.5 Ta 0.3 Ru 0.4 Mn 0.1
CTE (25–500°C)	14.3 µm/m*K
Recommended solders	Herador PF Lot 1040/1010, Herador/Maingold PF Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1257 6000

**Herador H**

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Gold content 78.5 mass % (precious-metal content 96.5 mass %)
- Adapted for long span bridge structures and milling; wide indication range
- Years of user experience

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 78.5 Pt 10.0 Pd 7.8 Ir 3.5 Ir 0.2
CTE (25–500°C)	13.9 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/1060S, Herador/Maingold Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1570 0000



HIGH GOLD CONTENT CERAMIC BONDING ALLOYS

Hera Nordic 75

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Gold content 75.0 mass % (precious-metal content 93.0 mass %)
- Adapted for long span bridge structures and milling; wide indication range
- Light oxide
- Years of user experience

Indication

- Crowns
- Bridges
- Milling procedures

Product details

Composition (Content in mass %)	Au 75.0 Ag 1.3 Pd 17.9 Sn 1.0 Zn 0.2 In 4.5 Ir <0.1 Ru <0.1
CTE (25–500°C)	14.0 µm/m*K
Recommended solders	Herador Lot 1070/1060 S, Herador Lot V 800
Laser welding wire	Herador H
Delivery form	1 g ingots, rand. weights

Art. Code **1062 6000**



Herador NH

High gold content ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Gold content 77.8 mass % (precious-metal content 96.4 mass %)
- Adapted for long span bridge structures and milling; wide indication range
- Light oxide
- Years of user experience

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 77.8 Ag 1.3 Pt 9.5 Pd 9.0 Cu 0.3 Sn 0.6 In 1.2 Ir <0.1 Ru <0.1 Fe 0.2
CTE (25–500°C)	13.9 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/1060S, Herador/Maingold Lot 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1610 0000**



FRAMEWORK MATERIALS

REDUCED GOLD CERAMIC BONDING ALLOYS

Heraloy G

Reduced gold ceramic bonding alloy
acc. to EN ISO 9693-1 and 22674,
white

Advantages

- Suitable for single crowns and bridges with maximum span length, and for milling
- Ag and Cu free
- Light oxide
- Reliable with ceramic staining
- Functional composition

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details	
Composition (Content in mass %)	Au 51.5 Pd 37.9 In 8.5 Ir <0.1 Ru <0.1 Ga 2.0
CTE (25–500°C)	13.9 µm/m*K
Recommended solders	Herador Lot 1070/1060/ 1060S/V 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1030 0000

**Hera Nordic 40**

Reduced gold ceramic bonding alloy
acc. to EN ISO 9693-1 and 22674,
white

Advantages

- Suitable for single crowns and bridges with maximum span length, and for milling
- Copper free
- Light oxide
- Reliable with ceramic staining
- Simple composition

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details	
Composition (Content in mass %)	Au 40.0 Ag 10 Pd 39.4 Sn 0.2 In 8.8 Ga 1.4 Ru 0.2
CTE (25–500°C)	14.0 µm/m*K
Recommended solders	Herador Lot 1060S/V 800
Laser welding wire	–
Delivery form	1 g ingots, rand. weights
Art. Code	1062 4000

**Herabond**

Reduced gold ceramic bonding alloy
acc. to EN ISO 9693-1 and 22674,
white

Advantages

- Suitable for single crowns and bridges with maximum span length, and for milling
- Light oxide through Ag content
- Reliable use with silver insensitive ceramic materials
- High temperature strength

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details	
Composition (Content in mass %)	Au 51.5 Ag 18.0 Pd 26.6 Cu 0.2 Sn 2.7 In 0.9 Ir <0.1 Ru <0.1
CTE (25–500°C)	14.5 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/1060S/V 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1560 0000



REDUCED GOLD CERAMIC BONDING ALLOYS

Herabond N

Reduced gold ceramic bonding alloy
acc. to EN ISO 9693-1 and 22674,
white

Advantages

- Suitable for single crowns and bridges with maximum span length, and for milling
- Reliable use with silver insensitive ceramic materials
- High temperature strength

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 39.0 Ag 19.4 Pt 1.0 Pd 35.0 Sn 5.0 In 0.5 Ir <0.1 Ru <0.1
CTE (25–500 °C)	14.2 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/1060S/V 800
Laser welding wire	Herabond
Delivery form	1 g ingots, rand. weights

Art. Code **1630 0000**



FRAMEWORK MATERIALS

PD-BASED CERAMIC BONDING ALLOYS

Albabond E

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Universal veneering capability with ceramics or composites
- Easy to polish
-

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 78.0 Au 1.6 Cu 10.8 Sn 0.2 Zn 0.2 In 1.3 Ga 7.5 Ru 0.4
CTE (25–500°C)	13.7 µm/m*K
Recommended solders	Herador Lot 1070/1060/ V 800
Laser welding wire	–
Delivery form	1 g ingots rand. weights

Art. Code **1090 0000**

**Albabond EH**

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Universal veneering capability with ceramics or composites
- Easy to polish
- Low density

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 78.6 Au 2.0 Cu 9.8 Zn 0.2 Ga 8.8 Ru 0.4 Ge 0.2
CTE (25–500°C)	13.8 µm/m*K
Recommended solders	Herador Lot 1070/1060/ V 800
Laser welding wire	–
Delivery form	1 g ingots, rand. weights

Art. Code **1091 0000**

**Albabond B**

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Ideal for all indications of ceramic veneering
- Copper free
- Can be used for most ceramic materials
- Exceptional polishability
- Universal veneering capability with ceramics or composites

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 74.4 Au 5.3 Ag 6.5 Sn 8.0 In 1.0 Ga 4.5 Ru 0.3
CTE (25–500°C)	13.5 µm/m*K
Recommended solders	Herador Lot 1070/1060/ 1060S/V 800
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1095 0000**



PD-BASED CERAMIC BONDING ALLOYS

Albabond A

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Ideal for all indications of ceramic veneering
- Containing silver

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 56.6 Ag 32.6 Sn 6.8 Zn 0.2 In 3.4 Ir 0.2 Ru 0.2
CTE _(25–500°C)	14.7 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/1060S/V 800
Laser welding wire	Albabond B
Delivery form	1 g ingots, rand. weights

Art. Code 1172 0000



Albabond C

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Universal veneering capability with ceramics or composites
- Can be used for most ceramic materials
- Exceptional polishing properties
- Copper free
- Light coloured oxide
- Chemical resistance and processing qualities are positively affected by the gold content

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 52.2 Au 15.0 Ag 21.5 Sn 4.0 In 6.0 Ga 1.0 Ru 0.3
CTE _(25–500°C)	14.5 µm/m*K
Recommended solders	Herador Lot 1100/1070/ 1060/ 1060S/V 800
Laser welding wire	Ø 0.5 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1096 0000

Heralight

NPM-alternative

Pd-based ceramic bonding alloy acc. to EN ISO 9693-1 and 22674, white

Advantages

- Ideal for all indications of ceramic veneering
- Copper free
- Exceptional polishability

Indication

- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Pd 60.1 Ag 27.8 Sn 3.0 Zn 0.2 In 7.0 Ga 1.5 Ir 0.2 Ru 0.2
CTE _(25–500°C)	14.4 µm/m*K
Recommended solders	Herador Lot 1070/1060/ 1060S/V 800
Laser welding wire	–
Delivery form	1 g ingots, rand. weights

Art. Code 1179 0000



HERASUN ALLOYS – UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

The HeraSun System includes a range of four precious universal metal-ceramic alloys and one non-precious CoCr base alloy developed specifically for HeraCeram Sun ceramic.

HeranormSun, MainbondSun, AureaSun and AlbaSun are all copper free precious metal alloys with different technical properties and staggered prices:

- Suitable for casting large or small restorations including long span bridges
- They are resistant to warping. I.e. alloys can be fired without individual firing trays even in long spans.
- As they are Cu-free, they only form a very light oxide layer which enhances the aesthetic qualities of HeraCeramSun.

The optimum physical properties of HeraeniumSun non-precious CoCr base alloy provide for excellent processing, ensuring that it is predestined for all ranges of indications.

If you combine Sun alloys with low fusing, perfectly matched HeraCeramSun porcelain, you can be sure of one thing: lasting and very good results.

HeranormSun

Universal casting and bonding alloy (gold dental casting alloy acc. to EN ISO 22674 and 9693-1), yellow

Advantages

- High gold content 71.0mass% (precious-metal content 80.0mass%)
- Advanced indication range from inlays to long span bridges, as well as milling procedures
- Palladium and copper free
- High warp resistance
- Wide melting range
- Golden yellow shade
- Very light oxide
- Aesthetic ceramic veneering with HeraCeramSun or composites

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures

Product details

Composition (Content in mass %)	Au 71.0 Ag 17.3 Pt 8.5 Zn 2.4 Ta 0.3 Rh 0.5
CTE _(25–500°C)	16.1 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1495 0000



HERASUN ALLOYS – UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

MainbondSun

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1), yellow

Advantages

- Gold content 74.0 mass %
(precious-metal content 81.1 mass %)
- Copper free
- High gold content
- Very light oxide
- High warp resistance
- Very good milling qualities
- Especially suited for implant procedures
- For all crown and bridge indications
- Aesthetic ceramic veneering with HeraCeramSun or composites

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 74.0 Ag 14.5 Pt 1.5 Pd 5.5 Zn 3.3 In 1.0 Ta 0.1 Ir 0.1
CTE (25–500°C)	16.3 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1491 0000



AureaSun

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1), yellow

Advantages

- Copper free
- Yellow shade
- Very light oxide
- High warp resistance
- Very good milling qualities
- For all crown and bridge indications
- Aesthetic ceramic veneering with HeraCeramSun or composites

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 55.0 Ag 23.0 Pt 12.5 Pd 2.5 Zn 4.5 In 2.0 Ta 0.1 Ru 0.4
CTE (25–500°C)	16.1 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1201 0000



AlbaSun

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1), white

NPM-alternative

Advantages

- Silver based alloy with gold
- Copper free
- Very light oxide
- High warp resistance
- Wide indication range
- The obvious alternative to NPM
- Aesthetic ceramic veneering with HeraCeramSun or composites

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Cast posts

Product details

Composition (Content in mass %)	Au 2.0 Ag 58.0 Pd 32.9 Zn 3.5 Sn 2.0 In 1.5 Ir <0.1 Ru <0.1
CTE (25–500°C)	16.6 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1140 0000



UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

Bio Heranorm

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1, yellow)

Advantages

Oxide shade

- Gold content 72.5 mass %
(precious-metal content 81.0 mass %)
- Very bright oxide

Tolerability

- Palladium and copper free

Alloy shade

- Intensive golden yellow shading

Temperature strength stability

- The temperature strength stability is 70 % higher compared with Cu-containing universal alloys

Simplified processing

- No redox opaquer necessary
- CTE permits rapid cooling
- Veneering possible on low firing temperature and high CTE veneering ceramics

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges

Product details	
Composition (Content in mass %)	Au 72.5 Ag 16.3 Pt 8.5 Sn 0.5 Zn 2.0 Ta 0.2
CTE (25–500°C)	16.0 µm/m*K
Recommended solders	HeraSun solder 1, HeraSun solder 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1502 0000



Mainbond EH

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1, yellow)

Advantages

- Gold content 70.0 mass %
(precious-metal content 78.6 mass %)
- Covers the entire indications range from inlays to long span bridges, as well as milling procedures and cast partial denture
- Veneering with dental composite materials like Signum or Special ceramics with high CTE and low firing temperature
- Palladium free
- Aesthetic ceramic veneering

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast partial denture
- Implants

Product details	
Composition (Content in mass %)	Au 70.0 Ag 13.4 Pt 8.5 Cu 7.5 Zn 0.5 Ir 0.1
CTE (25–500°C)	16.0 µm/m*K
Recommended solders	Mainbond Lot 875, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1505 0000



UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

Mainbond A

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1, yellow)

Advantages

- Gold content 74.1 mass %
(precious-metal content 83.1 mass %)
- Palladium free
- Covers the entire indications range
from inlays to long span bridges,
as well as milling procedures
- Veneering with acrylic or special
ceramics with high CTE and low
firing
- Aesthetic ceramic veneering

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 74.1 Ag 9.0 Pt 8.9 Cu 4.4 Zn 2.0 In 1.5 Ir 0.1
CTE (25–500 °C)	16.0 µm/m*K
Recommended solders	Mainbond Lot 875, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1500 0000**



Keramikgold PKF

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1, yellow)

Advantages

- Gold content 75.0 mass %
(precious-metal content 85.05 mass %)
- Palladium free
- Veneering possible with polyglass
veneering materials like Signum
or Special ceramics designed
for alloys with a high CTE and
firing temperature and low
- Yellow shade
- Aesthetic ceramic veneering
- Entire indications range from inlays
to long span bridges, as well as
milling procedures

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 75.0 Ag 12.5 Pt 9.0 Zn 2.0 Ta 0.45 Ir <0.1 Rh 1.0
CTE (25–500 °C)	15.7 µm/m*K
Recommended solders	Spezial Lot 970, HeraSun Lot 2
Laser welding wire	Bio Heranorm
Delivery form	1 g ingots, rand. weights

Art. Code **1508 0000**



Keramikgold N

Universal casting and bonding alloy
(gold dental casting alloy acc. to
EN ISO 22674 and 9693-1, rich yellow)

Advantages

- Gold content 72.9 mass %
(precious-metal content 82.3 mass %)
- Palladium and copper free
- Entire crown and bridge indication
range
- Yellow shade
- Veneering with dental composite
such as Signum
- Veneering possible with special
ceramics designed with a high CTE
- Suitable for milling

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Implants

Product details

Composition (Content in mass %)	Au 72.9 Ag 14.5 Pt 8.9 Zn 1.5 In 1.5 Ir 0.1 Ta 0.2 Rh 0.4
CTE (25–500 °C)	15.9 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Bio Heranorm
Delivery form	1 g ingots, rand. weights

Art. Code **1508 6000**



UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

Hera KF

Universal casting and bonding alloy
(reduced precious metal dental
casting alloy acc. to EN ISO 22674
and 9693-1, yellow)

Advantages

- Entire crown and bridge indication range
- Copper free
- Yellow shade
- Particularly suited to telescopic and tapered crowns, as well as bar attachments, makes discoloration unlikely
- Suitable with special veneering ceramics with high CTE and low firing temperature e.g. HeraCeram Sun

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 55.0 Ag 30.5 Pd 9.9 Zn 2.0 Ir 2.5 Ir <0.1 Ru <1.0
CTE (25–500°C)	16.7 µm/m*K
Recommended solders	Mainbond Lot 875, HeraSun Lot 2
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1200 0000



Hera Ecobond

Universal casting and bonding alloy
(reduced precious metal dental
casting alloy acc. to EN ISO 22674
and 9693-1, yellow)

Advantages

- Entire crown and bridge indication range
- Copper free
- Yellow shade
- Can be bonded with special veneering ceramics with a high CTE and low firing temperature e.g. HeraCeram Sun

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures

Product details

Composition (Content in mass %)	Au 36.7 Ag 36.7 Pd 16.5 Ir 10.0 Ir 0.1
CTE (25–500°C)	16.9 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Hera KF Ø 0.5 mm/ Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1205 0000 (m)

Art. Code 1206 0000 (o)



Heradent

Universal casting and bonding alloy
(reduced precious metal dental
casting alloy acc. to EN ISO 22674
and 9693-1, white)

NPM-alternative

Advantages

- Entire crown and bridge indication range
- Copper free
- Veneering possible with dental composite such as Signum
- Suitable for bonding with special veneering ceramics with high CTE and low firing temperature e.g. HeraCeram Sun
- White shade
- Low density

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts

Product details

Composition (Content in mass %)	Ag 53.0 Pd 39.9 Zn 3.5 Ir 2.0 Sn 1.5 Ru <0.1 Ir <0.1
CTE (25–500°C)	16.2 µm/m*K
Recommended solders	Mainbond Lot 875, HeraSun Lot 2
Laser welding wire	AlbaSun Ø 0.5 mm/ Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1279 0000



UNIVERSAL ALLOYS FOR CERAMIC VENEERS AND C&B TECHNIQUE

Herabest

Universal casting and bonding alloy
(reduced precious metal dental
casting alloy acc. to EN ISO 22674
and EN ISO 9693-1, yellow)

Advantages

- Entire crown and bridge indication range
- Copper-free
- Yellow colour
- Tarnish resistant thanks to the absence of copper, therefore specially indicated for telescopic, tapered crowns and bar supported restorations.
- Suitable with special veneering ceramics with high CTE and low firing temperature e.g. HeraCeram Sun

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 57.0 Ag 27.0 Pd 10.0 In 4.0 Zn 1.4 Sn 0.55 Ir ≤ 0.1
CTE (25–500°C)	16.7 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Hera KF Ø 0.5 mm/ Ø 0.3 mm
Delivery form	1 ingots, rand. weights

Art. Code **1209 0000**



Herastar

Universal casting and bonding alloy
(reduced precious metal dental
casting alloy acc. to EN ISO 22674
and EN ISO 9693-1, bright yellow)

Advantages

- Entire crown and bridge indication range
- Copper-free
- Light yellow colour
- Suitable with special veneering ceramics with high CTE and low firing temperature e.g. HeraCeram Sun

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures

Product details

Composition (Content in mass %)	Au 40.0 Ag 35.9 Pd 15.0 In 9.0 Ir 0.1
CTE (25–500°C)	16.6 µm/m*K
Recommended solders	HeraSun Lot 1, HeraSun Lot 2
Laser welding wire	Hera KF Ø 0.5 mm/ Ø 0.3 mm
Delivery form	1 ingots, rand. weights

Art. Code **1208 0000**



Herastar AU

NEW

Universal casting and bonding alloy
(reduced precious metal dental casting
alloy acc. to EN ISO 22674 and
EN ISO 9693-1) light yellow

Advantages

- Entire crown and bridge indication range
- Copper-free
- Light yellow colour
- Suitable with special veneering ceramics with high CTE and low firing temperature
- Easy to mill
- Low density
- Excellent temperature strength

Indication

- Inlays, Onlays
- Crowns
- Bridges
- Milling-, Con- and Attachment works
- Partial denture

Product details

Composition (Content in mass %)	Au 33.0 Ag 43.0 Pd 14.8 In 8.0 Pt 1.0 Ir 0.1 Nb 0.1
CTE (25–500°C)	17.0 µm/m*K
Recommended solders	Herastar AU Lot 1, Herastar AU Lot 2
Laser welding wire	–
Delivery form	1 g ingots, rand. weights

Art. Code **1208 1000**



FRAMEWORK MATERIALS

HIGH GOLD CONTENT DENTAL CASTING ALLOYS

Bio Maingold SG

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 71.0 mass %
(precious-metal content 75.0 mass %)
- Palladium free
- Wide indication range, from inlays to long span bridges; suitable for milling procedures
- Clinically tested
- Easily for milling and polishing
- Optimally tolerated

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 71.0 Ag 12.3 Pt 3.9 Cu 12.2 Zn 0.5 Ir 0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1431 0000**

**Maingold SG**

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 71.0 mass %
(precious-metal content 75.0 mass %)
- Covers the entire indications range
from inlays to long span bridges,
as well as milling procedures
- Clinically tested over time

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 71.0 Ag 12.3 Pt 2.0 Pd 1.9 Cu 12.2 Zn 0.5 Ir <0.1 Ru <0.1
Recommended solders	Maingold Lot 850, Herador/Maingold Lot 800, Maingold/Hera Lot 750
Laser welding wire	Bio Maingold SG Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1430 0000**

**Maingold MP**

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 72.0 mass %
(precious-metal content 75.7 mass %)
- Palladium free
- Covers the entire indications range
from inlays to large bridges
- Excellent corrosion resistance

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Implants
- Cast posts

Product details

Composition (Content in mass %)	Au 72.0 Ag 13.7 Pt 3.6 Cu 9.8 Zn 0.8 Ir 0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code **1437 0000**



HIGH GOLD CONTENT DENTAL CASTING ALLOYS

Maingold Premium

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 70.0 mass %
(precious-metal content 76.5 mass %)
- Very high thermal stability
- Easy to polish, good millability
- Excellent hardness
- Optimal biocompatibility

Indication

- Bridges
- Milling procedures
- Cast partial denture

Product details	
Composition (Content in mass %)	Au 70.0 Ag 13.5 Pt 4.4 Pd 2.0 Cu 8.8 Zn 1.2 Ir 0.1
Recommended solders	Maingold Lot 850, Maingold/Hera Lot 750, Herador/Maingold Lot 800
Laser welding wire	Bio Maingold SG Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1433 2000



Maingold OG

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 70.0 mass %
(precious-metal content 78.5 mass %)
- Entire indications range, including
milling procedures and cast partial
denture

Indication

- Bridges
- Milling procedures
- Cast partial denture
- Cast posts
- Implants

Product details	
Composition (Content in mass %)	Au 70.0 Ag 13.4 Pt 7.5 Pd 0.95 Cu 7.6 Zn 0.5 Ir <0.1 Ru <0.1
Recommended solders	Maingold Lot 850, Herador/ Maingold Lot 800, Maingold/Hera Lot 750
Laser welding wire	Mainbond EH Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1420 0000



Bio Maingold TK

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 84.5 mass %
(precious-metal content 95.0 mass %)
- Specially designed for telescopic
and tapered crowns
- Ideal for primary crowns in the
Preciano double crown technique
- Easily for milling and polishing
- Palladium and copper free
- Superior hardness
- Optimal biocompatibility

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Implants
- Galvano double crowns
(primary crowns)

Product details	
Composition (Content in mass %)	Au 84.5 Pt 10.1 Zn 4.5 Ta 0.5 Ru 0.4
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Bio Herador N Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1434 0000



HIGH GOLD CONTENT DENTAL CASTING ALLOYS

Bio Maingold IT

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 77.0 mass%
(precious-metal content 78.1 mass%)
- Palladium free
- Suitable for 2 and 3 surface inlays,
adequate strength also for larger inlays
- Good mould filling capacity for
reproducing extremely thin margins
- Outstanding finishing qualities to
obtain good marginal integrity

Indication

- Inlays
- MOD inlays

Product details	
Composition (Content in mass %)	Au 77.0 Ag 13.0 Pt 1.0 Cu 8.5 Zn 0.2 In 0.2 Ir 0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Bio Maingold SG
Delivery form	1 g ingots, rand. weights
Art. Code	1472 0000



Bio Maingold I

High gold content dental casting alloy
acc. to EN ISO 22674, rich yellow

Advantages

- Gold content 91.7 mass%
(precious-metal content 95.2 mass%)
- Palladium and copper free
- Suitable for 1 to 3 surface,
non cuspbearing inlays
- Very high precious metal content,
hence rich yellow shade
- Outstanding finishing qualities to
obtain good marginal integrity

Indication

- Inlays

Product details	
Composition (Content in mass %)	Au 91.7 Ag 2.8 Pt 3.45 Zn 2.0 Ir <0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Bio Maingold SG
Delivery form	1 g ingots, rand. weights
Art. Code	1471 0000



Bio Heragold C

High gold content dental casting alloy
acc. to EN ISO 22674, yellow

Advantages

- Gold content 71.0 mass%
(precious-metal content 75.0 mass%)
- Wide indication range, from inlays
to long span bridges; suitable for
milling procedures
- Clinically tested
- Easily milled and polished
- Optimally tolerated
- Palladium free

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast posts
- Implants

Product details	
Composition (Content in mass %)	Au 71.0 Ag 12.3 Pt 3.9 Cu 12.2 Zn 0.5 Ir 0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold PF Lot 750
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights
Art. Code	1431 6000



REDUCED PRECIOUS METAL DENTAL CASTING ALLOYS

Hera SG

Reduced precious metal dental casting alloy acc. to EN ISO 22674, yellow

Advantages

- Entire crown and bridge indication range
- Superior processing
- Good casting capability

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast partial denture
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 55.6 Ag 24.4 Pt 1.0 Pd 3.7 Cu 14.0 Zn 1.0 In 0.2 Ir <0.1 Ru <0.1
Recommended solders	Hera Lot 800, Maingold/Hera Lot 750
Laser welding wire	Hera GG Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1550 0000



Hera GG

Reduced precious metal dental casting alloy acc. to EN ISO 22674, yellow

Advantages

- Entire crown and bridge indication range
- Superior processing
- Good casting capability

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast partial denture
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 59.3 Ag 22.9 Pt 0.6 Pd 3.7 Cu 13.0 Zn 0.4 Ir <0.1 Ru <0.1
Recommended solders	Hera Lot 800, Maingold/Hera Lot 750
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1390 0000



Hera PF

Reduced precious metal dental casting alloy acc. to EN ISO 22674, yellow

Advantages

- Entire crown and bridge indication range
- Palladium free

Indication

- Inlays
- MOD inlays
- Crowns
- Bridges
- Milling procedures
- Cast partial denture
- Cast posts
- Implants

Product details

Composition (Content in mass %)	Au 59.3 Ag 22.9 Pt 4.3 Cu 13.0 Zn 0.4 Ir 0.1
Recommended solders	Herador/Maingold PF Lot 800, Maingold/Hera Lot 750
Laser welding wire	Ø 0.5 mm Ø 0.3 mm
Delivery form	1 g ingots, rand. weights

Art. Code 1395 0000



NON PRECIOUS METAL ALLOYS FOR CROWN AND BRIDGEWORK

Heraenium P

CoCr base non precious metal alloy

Non precious bonding alloy for conventional ceramics especially for HeraCeram acc. to EN ISO 9693-1 and 22674

Heraenium P has been developed for conventional ceramics such as HeraCeram and has optimum processing properties and high cobalt and chrome content.

Customers appreciate the good physical properties, which are reflected by the good polishability of the alloy. As a result, technicians achieve top-quality, aesthetic restorations more quickly. This alloy, which has a low coefficient of thermal expansion, has been clinically evaluated, is highly corrosion resistant and compliant with the requirements of EN ISO 9693-1 and EN ISO 22674

Advantages

- Beryllium, Cadmium and Lead free
- Wide indication range
- Very high corrosion resistance
- Easily polished
- CTE $_{(25-500^{\circ}\text{C})} = 13.8 \mu\text{m/m}\cdot\text{K}$
- Ideal for laser/phaser and solder techniques

Indication

- Single crowns
- Small and long span bridgework
- Ceramics (HeraCeram) or composite (Signum) faced crowns and bridges

Delivery forms	Art. Code
1 kg	6600 2217
250g	6600 2431



Technical data

Composition (Content in mass %)	Co 59.0 Cr 25.0 Mo 4.0 W 10.0 Mn 0.8 Si 1.0 N 0.2
Type	5
Colour	white
Density (g/cm ³)	8.8
Melting range (°C)	Solidus, 1305 Liquidus 1400
Casting temperature	1550°C
Hardness (HV 10)	After ceramic firing, 330
0.2 % yield strength (MPa)	After ceramic firing, 650
Tensile strength (MPa)	After ceramic firing, 910
Elongation (%)	After ceramic firing, 8
CTE $_{(25-500^{\circ}\text{C})}$ ($\mu\text{m/m}\cdot\text{K}$)	13.8
Young's modul (GPa)	200

HeraCeram NP-Primer

For processing HeraCeram and HeraCeramSun on NPM alloys, 2 ml



NON PRECIOUS METAL ALLOYS FOR CROWN AND BRIDGEWORK

Heraenium Pw

CoCr base non precious metal alloy

Non precious bonding alloy for conventional ceramics especially for HeraCeram acc. to EN ISO 9693-1 and 22674

Advantages

- Heraenium Pw is a soft cobalt chromium base bonding alloy for all indications.
- Optimum physical properties for exceptional processing
- Low hardness
- Easily milled and polished
- Easily trimmed due to low hardness value
- Beryllium, cadmium and lead free
- Ideal for laser/phaser and solder techniques
- Very high corrosion resistance

Indication

- Single crowns
- Small and long span bridgework
- Ceramics (HeraCeram) or composite (Signum) faced crowns and bridges

Delivery forms	Art. Code
1 kg	6602 1871
250g	6602 1872

Technical data	
Composition (Content in mass %)	Co 55.2 Cr 24.0 W 15.0 Fe 4.0 Si 1.0 Mn 0.8 N < 0.1
Type	after casting Typ 4; after ceramic firing Type 5
Colour	white
Density (g/cm ³)	8.9
Melting range (°C)	Solidus, 1320 Liquidus 1400
Hardness (HV 10)	After ceramic firing, 290
0.2 % yield strength (MPa)	After ceramic firing, 530
Elongation (%)	After ceramic firing, 8
CTE _(25–500°C) (µm/m•K)	14.3
Young's modul (GPa)	208



HeraCeram NP-Primer

For processing HeraCeram and HeraCeramSun on NPM alloys, 2 ml



NON PRECIOUS METAL ALLOYS FOR CROWN AND BRIDGEWORK

HeraeniumSun

CoCr base non precious metal universal alloy for low fusing ceramic acc. to EN ISO 22674 and 9693-1

Heraenium Sun, the cobalt chromium bonding alloy for the HeraSun system, is optimally tailored to HeraCeram Sun. Due to its optimal physical properties it is very easy to prepare and ideal for all areas of application. It also has exceptional milling and polishing properties.

Advantages

- Tailored to HeraCeramSun
- Easily trimmed due to low hardness value
- Beryllium, cadmium and lead free
- Ideal for laser/phaser and solder techniques

Indication

- Single crowns
- Small and long span bridgework
- Ceramics (HeraCeram) or composite (Signum) faced crowns and bridges

Delivery forms	Art. Code
1 kg	6602 0651
250 g	6602 0652



Technical data

Composition (Content in mass %)	Co 43.0 Fe 27.0 Cr 23.45 W 2.5 Mo 2.0 Si 1.0 Mn 0.8 N 0.15 C 0.1
Type	4
Colour	white
Density (g/cm³)	8.2
Melting range (°C)	Solidus, 1290 Liquidus 1380
Hardness (HV 10)	After ceramic firing, 280
0.2% yield strength (MPa)	After ceramic firing, 490
Elongation (%)	After ceramic firing, 18
CTE (25–500°C) (µm/m•K)	16.2
Young's modul (GPa)	250

Please Note!

- CTE (25 – 500°C), 16.2 µm/m•K
- This alloy is only compatible with low fusing and high expansion ceramics.

HeraCeram NP-Primer

For processing HeraCeram and HeraCeramSun on NPM alloys, 2 ml



NON PRECIOUS METAL ALLOYS FOR CROWN AND BRIDGEWORK

Heraenium NA

NiCr base alloy – non precious metal alloy

Nickel chromium base bonding alloy for use with classic porcelains, in particular HeraCeram, and composites (Signum) acc. to EN ISO 9693-1 and 22674

Heraenium NA is a reliable nickel-chromium based non precious metal alloy, primarily indicated for fabricating frameworks for metal-ceramics and specifically for use with classic porcelains such as HeraCeram. The framework can also be veneered with composites.

Heraenium NA is free of beryllium and lead, and is easily trimmed due to its minimal hardness. Especially when veneered with HeraCeram porcelain, aesthetic, high grade and dependable prosthetic restorations can be fabricated.

Kulzer Heravest Onyx and Moldavest exact investments are recommended for casting this alloy as they produce precisely fitting, smooth, fissure free castings.

Advantages

- High strength
- Beryllium free
- Cadmium free
- Free of lead
- Optimum hardness
- CTE matched optimally to classic porcelains

Indication

- Single crowns
- Small and long span bridgework
- Ceramics (HeraCeram) or composite (Signum) faced crowns and bridges

Delivery form	Art. Code
1 kg	6460 0957



Technical data

Composition (Content in mass %)	Ni 59.3 Cr 24.0 Mo 10.0 Fe 1.5 Mn 1.5 Ta 1.5 Si 1.2 Nb 1.0
Type	4
Colour	white
Density (g/cm³)	8.3
Melting range (°C)	Solidus, 1190 Liquidus 1300
Casting temperature (°C)	1450
Hardness (HV 10)	After casting, 190 After firing, 200
0.2 % Yield strength (MPa)	After ceramic firing, 370
Tensile strength (MPa)	After ceramic firing, 710
Elongation (%)	After ceramic firing, 30
CTE (25–500 °C) (µm/m•K)	14.1
Young's modul (GPa)	222

HeraCeram NP-Primer

For processing HeraCeram and HeraCeramSun on NPM alloys, 2 ml



Caution!

These alloy contains nickel and must not be used for individuals with known nickel sensitivity.

NON PRECIOUS METAL ALLOYS FOR CROWN AND BRIDGEWORK

Heraenium S

NiCr – non precious metal alloy

Nickel chromium base bonding alloy for use with classic porcelains, in particular HeraCeram, and composites (Signum) acc. to EN ISO 9693 1 and 22674

Heraenium S is a reliable nickel chromium based non precious metal alloy, primarily indicated for fabricating frameworks for metal-ceramics and specifically for use with classic porcelains such as HeraCeram. The framework can also be veneered with composites.

Heraenium S is free of beryllium, cadmium and lead, exhibits good corrosion-resistance and is easily trimmed due to its minimal hardness. Especially when veneered with HeraCeram porcelain, aesthetic, high grade and dependable prosthetic restorations can be fabricated.

Kulzer Heravest Onyx and Moldavest exact investments are recommended for casting this alloy as they produce precisely fitting, smooth, non fissured castings.

Advantages

- High strength
- Beryllium free
- Cadmium free
- Free of lead
- Optimum hardness
- CTE matched optimally to classic porcelains

Indication

- Single crowns
- Small bridges
- Ceramics (HeraCeram) or composite (Signum) faced crowns and bridges

Delivery form	Art. Code
1 kg	6600 1900



Technical data

Composition (Content in mass %)	Ni 62.9 Cr 23.0 Mo 10.0 Fe 1.5 Si 2.0 Ce < 1
Type	3
Colour	white
Density (g/cm³)	8.2
Melting range (°C)	Solidus, 1200 Liquidus 1350
Casting temperature (°C)	1500
Hardness (HV 10)	After casting, 180 After firing, 200
0.2 % Yield strength (MPa)	After ceramic firing, 335
Tensile strength (MPa)	After ceramic firing, 660
Elongation (%)	After ceramic firing, 23
CTE (25–500 °C) (µm/m•K)	13.7
Young's modul (GPa)	224

HeraCeram NP-Primer

For processing HeraCeram and HeraCeramSun on NPM alloys, 2 ml



Caution!

These alloy contains nickel and must not be used for individuals with known nickel sensitivity.

COMPOSITION

	Type ^a	Colour	Applications	Content in mass %												Others		
				Au	Ag	Pt	Pd	Cu	Sn	Zn	In	Ta	Ir	Ru				
Ceramic Bonding Alloys acc. to EN ISO 22674 and 9693-1																		
high gold content	Implant	Bio SupraCeram	4 ^{Wk}	3,4,5,15	79,0	—	18,3	—	—	—	2,0	—	0,3	0,4	—	x Ce		
		BioCeram Plus	4 ^{Wk}	3,4,5,15 ^{A)}	90,0	—	7,9	—	—	—	1,5	—	—	x	—	0,1 Fe, 0,1 Mn, 0,2 Rh, 0,1 Nb, x Ce		
		Bio Herador SG	4 ^{Wk}	3,4,5,15 ^{A)}	88,7	—	9,49	—	—	—	1,5	—	—	x	—	0,1 Mn, 0,2 Rh		
		Bio Herador CN	4 ^{Wk}	3,4,5,15 ^{A)}	86,6	—	10,4	—	—	—	1,5	0,2	0,2	0,1	—	0,1 Mn, 0,9 Rh		
		Bio Herador N	4 ^{Wk}	3,4,5,15 ^{A)}	86,2	—	11,5	—	—	—	1,5	—	0,3	—	0,4	0,1 Mn		
		Bio Herador GG	4 ^{Wk} , 3 ^{A)}	3,4	86,7	—	11,2	—	—	—	—	1,7	—	0,1	—	0,3 Fe		
		Bio Herador MP	4 ^{Wk}	3,4,5,15 ^{A)}	85,9	—	11,7	—	—	—	1,5	x	—	x	—	0,1 Mn, 0,15 Rh, 0,5 Nb, x Fe		
		Herador EC	4 ^{Wk} , 3 ^{S)}	3,4,5 ^{A)}	75,0	8,0	14,3	—	—	—	2,5	—	0,2	—	—	—		
		Herador MP	4 ^{Wk}	3,4,5,15 ^{A)}	85,9	—	11,7	—	—	—	1,5	x	—	x	—	0,1 Mn, 0,15 Rh, 0,5 Nb, x Fe		
		Herador PF	4 ^{Wk}	3,4,5,15 ^{A)}	77,7	—	19,5	—	—	—	2,0	—	0,3	0,5	—	—		
		Herador C	4 ^{Wk}	3,4,5	86,6	—	10,8	—	—	—	—	1,7	0,3	—	—	0,6 Rh		
		Herador S	4 ^{Wk}	3,4,5,15	84,2	—	7,7	5,3	—	—	—	2,4	—	x	x	0,3 Fe		
		Herador G	4 ^{Wk}	3,4	82,8	—	16,0	—	—	—	—	1,0	—	0,2	—	—		
		Herador GG	4 ^{Wk} , 3 ^{A)}	3,4	86,7	—	11,0	—	0,2	—	—	1,7	—	0,1	—	0,3 Fe		
		Herador H	4 ^{Wk}	3,4,5,15	78,5	—	10,0	7,8	—	—	—	3,5	—	0,2	—	—		
		Herador NH	4 ^{Wk}	3,4,5,15	77,8	1,3	9,5	9,0	0,3	0,6	—	1,2	—	x	x	0,2 Fe		
reduced gold		Heraloy G	4 ^{Wk}	3,4,5,15	51,5	—	—	37,9	—	—	—	8,5	—	x	x	2,0 Ga		
		Herabond	4 ^{Wk}	3,4,5,15	51,5	18,0	—	26,6	0,2	2,7	—	0,9	—	x	x	—		
		Herabond N	4 ^{Wk}	3,4,5,15	39,0	19,4	1,0	35,0	—	5,0	—	0,5	—	x	x	—		
Pd-based		Albabond B	4 ^{Wk}	3,4,5,15	5,3	6,5	—	74,4	—	8,0	—	1,0	—	—	0,3	4,5 Ga		
		Albabond A	4 ^{Wk}	3,4,5,15	—	32,6	—	56,6	—	6,8	0,2	3,4	—	0,2	0,2	—		
		Heralight	4 ^{Wk}	3,4,5,15	—	27,8	—	60,1	—	3,0	0,2	7,0	—	0,2	0,2	1,5 Ga		
Universal Alloys, Ceramic Bonding Alloys acc. to EN ISO 22674 and 9693-1																		
Hera Sun		HeranormSun	4 ^{Wk} , 3 ^{S)}	1,2,3,4,5,14	71,0	17,3	8,5	—	—	—	2,4	—	0,3	—	—	0,5 Rh		
		MainbondSun	4 ^{Wk}	1,2,3,4,5,10,14,15	74,0	14,5	1,5	5,5	—	—	3,3	1,0	0,1	0,1	—	—		
		AureaSun	4 ^{Wk}	1,2,3,4,5,10,14,15 ^{A)}	55,0	23,0	12,5	2,5	—	—	4,5	2,0	0,1	—	0,4	—		
		AlbaSun	4 ^{Wk} , 3 ^{A)}	1,2,3,4,5,10,14	2,0	58,0	—	32,9	—	2,0	3,5	1,5	—	x	x	—		
universal		Bio Heranorm	4 ^{Wk} , 3 ^{S)}	1,2,3,4,14	72,5	16,3	8,5	—	—	0,5	2,0	—	0,2	—	—	—		
		Mainbond EH	4 ^{Wk}	1,2,3,4,5 ^{B)} , 6,14,15 ^{A)}	70,0	13,4	8,5	—	7,5	—	0,5	—	—	0,1	—	—		
		Mainbond A	4 ^{Wk}	1,2,3,4,5 ^{B)} , 14,15 ^{A)}	74,1	9,0	8,9	—	4,4	—	2,0	1,5	—	0,1	—	—		
		Keramigold PKF	4 ^{Wk} , 3 ^{S)}	1,2,3,4,5 ^{C)} , 14,15 ^{A)}	75,0	12,5	9,0	—	—	—	2,0	—	0,45	x	—	1,0 Rh		
		Keramigold N	4 ^{Wk} , 3 ^{S)}	1,2,3,4,14,15 ^{A)}	72,9	14,5	8,9	—	—	—	1,5	1,5	0,2	0,1	—	0,4 Rh		
		Hera KF	4 ^{Wk} , 3 ^{A)}	1,2,3,4,5,10,14,15 ^{A)}	55,0	30,5	—	9,9	—	—	2,0	2,5	—	x	x	—		
		Hera Ecobond	4 ^{Wk}	1,2,3,4,5,14	36,7	—	16,5	—	—	—	10,0	—	—	0,1	—	—		
		Heradent	4 ^{Wk} , 3 ^{S)}	1,2,3,4,5 ^{B)} , 10,14	—	53,0	—	39,9	—	1,5	3,5	2,0	—	x	x	—		
		Herabest	4 ^{Wk}	1,2,3,4,5,10,14,15 ^{A)}	57,0	27,0	—	10,0	—	0,55	1,4	4,0	—	x	—	—		
		Herastar	4 ^{Wk}	1,2,3,4,5,14	40,0	35,9	—	15,0	—	—	—	9,0	—	—	0,1	—		
		Herastar AU	4	1,2,3,4,5,6,14	33,0	43,0	1,0	14,8	—	—	—	8,0	—	0,1	—	0,1 Nb		
High Gold Content Casting Alloys acc. to EN ISO 22674																		
high gold content		Bio Maingold SG	4 ^{Wk}	1,2,3,4,5 ^{B)} , 10,15	71,0	12,3	3,9	—	12,2	—	0,5	—	—	0,1	—	—		
		Maingold SG	4 ^{Wk}	1,2,3,4,5 ^{B)} , 10,15	71,0	12,3	2,0	1,9	12,2	—	0,5	—	—	x	x	—		
		Maingold MP	4 ^{Wk} , 3 ^{A)}	1,2,3,4,5 ^{B)} , 10,15 ^{A)}	72,0	13,7	3,6	—	9,8	—	0,8	—	—	0,1	—	—		
		Maingold Premium	4 ^{Wk}	4,5,6	70,0	13,5	4,4	2,0	8,8	—	1,2	—	—	0,1	—	—		
		Maingold OG	4 ^{Wk}	4,5 ^{B)} , 6,10,15	70,0	13,4	7,5	0,95	7,6	—	0,5	—	—	x	x	—		
		Bio Maingold TK	4 ^{Wk} , 2 ^{A)}	1,2,3,4,5 ^{C)} , 15 ^{A)} , 16 ^{C)}	84,5	—	10,1	—	—	—	4,5	—	0,5	—	0,4	—		
		Bio Maingold IT	3 ^{Wk} , 2 ^{A)}	1,2	77,0	13,0	1,0	—	8,5	—	0,2	0,2	—	0,1	—	—		
		Bio Maingold I	3 ^{Wk} , 1 ^{A)}	1	91,7	2,8	3,45	—	—	—	—	2,0	—	—	x	—		
Reduced Precious Metal Casting Alloys acc. to EN ISO 22674																		
reduced gold		Hera SG	4 ^{Wk}	1,2,3,4,5 ^{B)} , 6,10,15	55,6	24,4	1,0	3,7	14,0	—	1,0	0,2	—	x	x	—		
		Hera GG	4 ^{Wk} , 3 ^{A)}	1,2,3,4,5 ^{B)} , 6,10,15	59,3	22,9	0,6	3,7	13,0	—	0,4	—	—	x	x	—		
		Hera PF	4 ^{Wk}	1,2,3,4,5 ^{B)} , 6,10,15	59,3	22,9	4,3	—	13,0	—	0,4	—	—	0,1	—	—		
Non Precious Alloys																		
non precious ceramic bonding alloys		Ceramic Bonding Alloys (CoCr) acc. to EN ISO 22674 and 9693-1			Co	Ni	Cr	Mo	Mn	Si	C	N	Ta	Fe	Nb	W	Others	
		Heraenium P	5 ^{Wk}	3,4,5,6	59,0	—	25,0	4,0	0,8	1,0	—	0,2	—	—	—	—	10,0	—
		Heraenium Pw	5 ^{Wk} , 4 ^{A)}	3,4,5,6	55,2	—	24,0	—	0,8	1,0	—	x	—	—	4,0	—	15,0	—
		Ceramic Bonding Alloys (NiCr) acc. to EN ISO 22674 and 9693-1			Co	Ni	Cr	Mo	Mn	Si	C	N	Ta	Fe	Nb	W	Others	
		Heraenium NA	4 ^{Wk}	3,4,5	—	59,3	24,0	10,0	1,5	1,2	—	—	1,5	1,5	1,0	—	—	—
partial denture alloys		Heraenium S	3 ^{Wk}	3,4,5	—	62,9	23,0	10,0	—	2,0	—	—	—	1,5	—	—	—	0,6 Ce
		Universal Bonding Alloy (CoCr) acc. to EN ISO 22674 and 9693-1			Co	Ni	Cr	Mo	Mn	Si	C	N	Ta	Fe	Nb	W	Others	
		HeraeniumSun	4 ^{Wk}	3,4,5,6,14,15	43,0	—	23,45	2,0	0,8	1,0	0,1	0,15	—	27,0	—	2,5	—	—
		Partial Denture Alloys (CoCr) acc. to EN ISO 22674			Co	Ni	Cr	Mo	Mn	Si	C	N	Ta	Fe	Nb	W	Others	
		Heraenium CE	5 ^{Wk}	6	63,5	—	27,8	6,6	0,6	1,0	0,3	0,2	—	—	—	—	—	—
		Heraenium EH	5 ^{Wk}	6	63,5	—	28,0	6,5	0,6	1,0	0,15	0,25	—	—	—	—	—	—
		Heraenium Laser	5 ^{Wk}	6	63,5	—	28,0	6,5	0,6	1,05	x	0,3	—	—	—	—	—	—

^aNotes: See legend chemical composition




































































FRAMEWORK MATERIALS

TECHNICAL DATA, MELTING AND CASTING

		Melting range ^{b)}		Preheating Temperature	Casting Temperature	Crucible	Density ¹⁾	Hardness			0.2% Yield strength ¹⁾		Elongation ¹⁾		Young's modul ¹⁾
		Solidus	Liquidus					HV5			MPa ²⁾		%		
		°C	°C	°C	°C		g/cm³	w/k	v	s	w/k	v	w/k	v	
Implant	Bio Supra Ceram	1080	1175	900	1325	G	19,1	235	260	225	600	630	4	3	93
high gold content	Bio Ceram Plus	1040	1100	850	1250	G	19,0	220	220 ³⁾	180	520	520 ³⁾	3	3 ³⁾	90
	Bio Herador SG	1055	1130	850	1280	G	19,0	215	220	180	520	540	6	5	90
	Bio Herador CN	1055	1140	850	1290	G	18,6	215	230	190	560	645	4	3	94
	Bio Herador N	1050	1130	850	1280	G	19,0	205	220	185	500	555	6	5	90
	Bio Herador GG	1010	1110	900	1260	G	19,2	160	170	125	330	460	13	7	90
	Bio Herador MP	1060	1140	800	1290	G	18,9	220	210 ³⁾	190	580	560 ³⁾	6	6 ³⁾	94
	Herador EC	1015	1110	800	1260	G	17,8	195	220	155	440	490	9	7	100
	Herador MP	1060	1140	800	1290	G	18,9	220	210 ³⁾	190	580	560 ³⁾	6	6 ³⁾	94
	Herador PF	1050	1160	900	1310	G	19,1	225	255	195	600	640	4	3	100
	Herador C	1060	1135	850	1285	G	19,1	160	200	125	395	480	15	11	89
	Herador S	1080	1150	900	1300	G	18,3	235	260	200	610	650	10	5	101
	Herador GG	1130	1200	900	1350	G	19,4	150	190	120	370	480	11	9	95
	Herador GG	1020	1125	900	1275	G	19,2	150	170	125	330	460	13	7	90
	Herador H	1150	1200	900 – 950 ⁴⁾	1350	G	17,6	220	270	200	600	710	8	5	118
Herador NH	1160	1260	900 – 950 ⁴⁾	1410	G	17,7	205	255	185	540	650	9	7	109	
reduced gold	Heraloy G	1130	1280	900	1430	K	14,5	250	260	210	550	600	23	14	132
	Herabond	1190	1230	900	1380	G	14,3	220	260	200	520	600	12	8	134
	Herabond N	1200	1250	900	1400	K	13,2	235	270	215	620	690	7	4	145
Pd-based	Albabond B	1120	1300	900	1450	K	11,7	225	240	225	460	470	41	40	128
	Albabond A	1165	1285	900	1440	K	11,4	205	235	220	460	540	26	18	122
	Heralight	1225	1280	900	1430	K	11,2	255	290	290	555	620	25	20	148
Hera Sun	HeranormSun	1005	1040	800	1170	G	16,3	150/170	185	140	385	450	11	6	95
	MainbondSun	950	1030	750	1160	G	15,7	160/250	240 ³⁾	235	700	660 ³⁾	4	4 ³⁾	100
	AureaSun	960	1045	750	1175	G	14,7	150/205	230	190	470	490	5	4	110
	AlbaSun	1045	1105	800	1235	G	10,8	150/175	210	170	310	450	11	5	108
universal	Bio Heranorm	970	1035	750	1170	G	16,5	125/160	190	130	400	420	12	7	90
	Mainbond EH	895	1010	700	1140	G	16,0	170/260	295	280	530	600	18	21	100
	Mainbond A	890	990	700	1120	G	16,7	150/190	230	180	440	500	9	6	96
	Keramigold PKF	990	1050	800	1180	G	16,7	180/205	220	135	455	450	6	7	95
	Keramigold N	980	1045	750	1180	G	16,6	150/190	200	145	470	480	8	7	97
	Hera KF	985	1070	850	1200	G	14,1	155/170	255	205	300	640	20	6	93
	Hera Ecobond	970	1040	750	1190	G	12,7	165/220	240	205	540	575	4	3	98
	Heradent	1070	1165	850	1295	G	11,0	170/180	250	200	320	535	15	5	100
	Herabest	960	1060	800	1210	G	13,9	155/210	235	200	480	575	6	3	97
	Herastar	965	1050	800	1200	G	13,0	170/220	–	210	550	–	5	–	107
	Herastar AU	980	1070	850	1220	G	12,6	–/220	230	200	470	610	8	5	100
high gold content	Bio Maingold SG	875	920	700	1050	G	15,4	160	250	250	380	630	42	16	99
	Maingold SG	900	930	700	1060	G	15,4	160	250	230	380	670	45	20	99
	Maingold MP	905	960	700	1090	G	15,6	150	225	220	320	550	40	14	95
	Maingold Premium	900	970	700	1100	G	15,7	170	235	235	400	620	30	17	99
	Maingold OG	930	990	700	1120	G	15,7	180	295	245	380	730	37	13	102
	Bio Maingold TK	940	990	700	1120	G	18,1	140	210	170	260	540	13	6	83
	Bio Maingold IT	890	930	700	1060	G	15,8	120	165	130	225	290	50	40	91
	Bio Maingold I	935	1035	700	1160	G	18,5	70	140	140	115	295	34	16	85
reduced gold	Hera SG	840	895	700	1000	G	13,7	195	280	280	530	860	25	5	100
	Hera GG	870	920	700	1050	G	14,1	160	265	265	340	780	38	6	103
	Hera PF	820	890	700	1030	G	14,2	170	280	260	440	760	35	7	93
non precious ceramic bonding alloys	Ceramic Bonding Alloys (CoCr) acc. to EN ISO 22674 and 9693-1														
	Heraenium P	1305	1400	950 – 1000	1550	Ceramic NPM	8,8	330 HV10	–	320 HV10	650	–	8	–	200
	Heraenium Pw	1320	1400	950	1550	Ceramic NPM	8,9	290 HV10	–	275 HV10	530	–	8	–	208
	Ceramic Bonding Alloys (NiCr) acc. to EN ISO 22674 and 9693-1														
	Heraenium NA	1190	1300	850	1450	Ceramic NPM	8,3	200 HV 10	–	190 HV 10	360	–	30	–	222
	Heraenium S	1200	1350	850 – 900	1500	Ceramic NPM	8,2	200 HV 10	–	180 HV 10	335	–	23	–	224
Universal Bonding Alloy (CoCr) acc. to EN ISO 22674 and 9693-1															
	HeraeniumSun	1290	1380	950	1500	Ceramic NPM	8,2	280 HV 10	–	265 HV 10	490	–	18	–	250
partial denture alloys	Partial Denture Alloys (CoCr) acc. to EN ISO 22674														
	Heraenium CE	1330	1380	950 – 1050	1530	Ceramic NPM	8,0	–	–	380 HV 10	–	580	–	4	228
	Heraenium EH	1330	1380	950 – 1050	1530	Ceramic NPM	8,0	–	–	310 HV 10	–	620	–	7	228
	Heraenium Laser	1330	1380	1000	1530	Ceramic NPM	8,0	–	–	340 HV 10	–	610	–	12	220

^{a)}Notes: See legend Technical Data, melting and casting

CERAMIC FIRING

		Coeff. of thermal expansion (CTE)				Processing after oxide firing	Cooling after ceramic firing*		Hardening			
		25 – 500 °C ^{a)}		Oxide Firing							Soft Annealing	
		µm/m*K		°C / min	vacuum				°C / min	°C	min	
								Others				
 high gold content	Implant	Bio Supra Ceram	13,7	880 ³⁾ /10	✓	—		S	S ³⁾	450	10	
	 Bio Ceram Plus	14,7	880 ³⁾ /10	✓	—		S	L ³⁾	— ⁵⁾	— ⁵⁾		
		Bio Herador SG	14,5	880 ³⁾ /10	✓	—		S	L ³⁾	450	15	
		Bio Herador CN	14,5	880 ³⁾ /10	✓	—		S	L ³⁾	450	15	
		Bio Herador N	14,3	880 ³⁾ /10	✓	—		S	L ³⁾	450	15	
		Bio Herador GG	14,5	880 ³⁾ /10	✓	—		S	L ³⁾	500	15	
		Bio Herador MP	14,3	880 ³⁾ /5	—	—		S	L ³⁾	450 ³⁾	20 ³⁾	
		Herador EC	14,8	880 ³⁾ /10	✓	—		S	L ³⁾	500	15	
		Herador MP	14,3	880 ³⁾ /5	—	—		S	L ³⁾	450 ³⁾	20 ³⁾	
		Herador PF	13,7	880 ³⁾ /10	✓	—		S	S ³⁾	500	15	
		Herador C	14,4	880 ³⁾ /10	—	—		S	L ³⁾	500	15	
		Herador S	14,3	880 ³⁾ /5	✓	—		S	L ³⁾	500	15	
		Herador G	13,9	880 ³⁾ /5	✓	—		S	S ³⁾	500	15	
		Herador GG	14,5	880 ³⁾ /10	✓	—		S	L ³⁾	500	15	
		Herador H	13,9	880 ³⁾ /5	—	—		S	S ³⁾	600	15	
		Herador NH	13,9	880 ³⁾ /5	—	—		S	S ³⁾	600	15	
 reduced gold	Heraloy G	13,9	880 ³⁾ /5	—	—		S	S ³⁾	650	15		
	Herabond	14,5	880 ³⁾ /5	—	—		S	L ³⁾	650	15		
	Herabond N	14,2	880 ³⁾ /5	—	—		S	L ³⁾	600	15		
 Pd-based  	Albabond B	13,5	880 ³⁾ /10	—	—		S	S ³⁾	600	15		
	Albabond A	14,7	880 ³⁾ /5	—	—		S	L ³⁾	600	15		
	Heralight	14,4	880 ³⁾ /5	—	—		S	L ³⁾	600	15		
    	HeranormSun	16,1	800/10	—	575/20		S	—	550 ³⁾	15 ³⁾		
	MainbondSun	16,3	800/10	—	650/15		S	—	500 ³⁾	10 ³⁾		
	AureaSun	16,1	800/10	—	600/15		S	—	500	15		
	AlbaSun	16,6	800/10	—	800/15		S	—	550	15		
	 universal         	Bio Heranorm	16,0	800 ³⁾ /10	✓	700/10		S	S ³⁾	550	15	
Mainbond EH		16,0	800 ³⁾ /10	—	750/5		S	N ³⁾	450	15		
Mainbond A		16,3	800 ³⁾ /10	—	750/10		S	N ³⁾	500	15		
Keramigold PKF		15,7	800 ³⁾ /3	—	800/5		S	N ³⁾	500	15		
Keramigold N		15,9	800 ³⁾ /15	—	800/15		S	N ³⁾	500	15		
Hera KF		16,7	800 ³⁾ /5	✓	750/15		S	L ³⁾	450	15		
Hera Ecobond		16,9	800 ³⁾ /10	—	—		S	L ³⁾	500	15		
Heradent		16,2	800 ³⁾ /10	—	900/15		S	N ³⁾	550	15		
Herabest		16,7	800 ³⁾ /5	✓	700/15		S	L ³⁾	550	15		
Herastar		16,6	800 ³⁾ /10	—	750/15		S	L ³⁾	— ⁵⁾	— ⁵⁾		
Herastar AU		17,0	800 ³⁾ /10	—	—		—	L ³⁾	450	15		
 high gold content	Bio Maingold SG	—	—	—	750/5	—	—	—	350	15		
	Maingold SG	—	—	—	750/5	—	—	—	350	15		
	Maingold MP	—	—	—	750/30	—	—	—	450	15		
	Maingold Premium	—	—	—	750/5	—	—	—	450	15		
	Maingold OG	—	—	—	750/5	—	—	—	450	15		
	Bio Maingold TK	—	—	—	800/15	—	—	—	350	15		
	Bio Maingold IT	—	—	—	750/15	—	—	—	300	15		
	Bio Maingold I	—	—	—	750/15	—	—	—	400	15		
 reduced gold	Hera SG	—	—	—	750/15	—	—	—	400	15		
	Hera GG	—	—	—	750/15	—	—	—	400	15		
	Hera PF	—	—	—	750/15	—	—	—	400	15		
 non precious ceramic bonding alloys	Ceramic Bonding Alloys (CoCr) acc. to EN ISO 22674 and 9693-1											
	Heraenium P	13,8	950 ³⁾ /10	✓ ³⁾	—		HeraCeram/f*	n ³⁾	—	—		
	Heraenium Pw	14,3	— ³⁾	— ³⁾	—	— ³⁾	HeraCeram/f*	n ³⁾	—	—		
	Ceramic Bonding Alloys (NiCr) acc. to EN ISO 22674 and 9693-1											
	Heraenium NA	14,1	950/10 ³⁾	—	—		HeraCeram/f*	f ³⁾	—	—		
	Heraenium S	13,7	950/10 ³⁾	—	—		HeraCeram/f*	f ³⁾	—	—		
	Universal Bonding Alloy (CoCr) acc. to EN ISO 22674 and 9693-1											
	HeraeniumSun	16,2	— ³⁾	— ³⁾	—	— ³⁾	HeraCeramSun/f*	n ³⁾	—	—		
	 partial denture alloys	Partial Denture Alloys (CoCr) acc. to EN ISO 22674										
		Heraenium CE	—	—	—	—	—	—	—	—	—	
Heraenium EH		—	—	—	—	—	—	—	—	—		
Heraenium Laser		—	—	—	—	—	—	—	—	—		

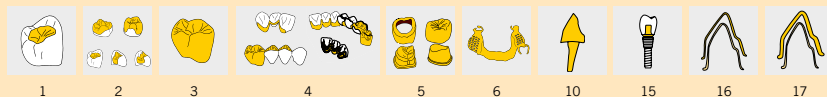
* Notes: See legend ceramic firing

FRAMEWORK MATERIALS

CERAMIC FIRING

COMPOSITION

Application



- | | |
|-----------------------------------|---|
| 1 Inlays, cervical restorations | 9 Cast on alloy |
| 2 MOD Inlays | 10 Cast posts |
| 3 Crowns | 11 Crown rings |
| 4 Bridges | 14 Can be veneered with high expansion, low fusing ceramics |
| 5 Milling technique | 15 Implant restorations |
| 6 Partial dentures | 16 Galvano double crowns (Primary crowns) |
| 7 Optimizing bonding & aesthetics | 17 Galvano double crowns (Secondary crowns and bars) |
| 8 Gold plating | |

Colour of alloy

- | | |
|--|---------------|
| | = white |
| | = pale yellow |
| | = yellow |
| | = rich yellow |

Remarks

- x = Mass content < 0,1 Mass %
- A) = A stable framework design with reinforced connections with a cross-section of 8–10 mm² is required for long span bridges and suprastructures. Additionally, the frameworks need to be hardened.
- B) = Depending on the copper and/or silver content, in some cases discoloration of double crowns may result after short period of wearing. Discoloration, however, is technically and physiologically harmless.
- C) = In exceptional cases these alloys can also be used for traditional telescopic crowns with parallel walls and for the bar casting technique provided that cross-sections for crown walls, approximal areas, bars and laser welded joints are particularly thick and the alloy is hardened subsequently. No indication for conical crowns and shear distributors.
- D) = Type classification acc. EN ISO 22674

Type	0,2 % Yield strength R _p (MPa) minimum	Elongation (%) minimum	Young's modul (GPa) minimum
0	—	—	—
1	80	18	—
2	180	10	—
3	270	5	—
4	360	2	—
5	500	2	150

- w = After soft annealing and quenching
- k = Bonding alloy: condition after ceramic firing
- v = Condition after hardening
- s = Self-hardening alloy, after slow cooling in the mould

TECHNICAL DATA, MELTING AND CASTING

Contraindications

In case of hypersensitivity (allergies) to one of the constituents of the alloy.

Side effects

In individual cases hypersensitivity reactions (allergies) or electrochemically conditioned, local malsensations were reported.

Interactions with other dental alloys

With approximal or antagonist contact with dentures of different alloys galvanic effects may occur. Other materials must be used instead if contact with other alloys causes persistent local paraesthesia on an electrochemical base.

Remarks

- w = After soft annealing and quenching
- k = Bonding alloy: condition after ceramic firing
- v = Condition after hardening
- s = Self-hardening alloy, after slow cooling in the mould
- 1) Acc. to EN ISO 22674
- 2) 1 MPa = 1 N/mm², 1 GPa = 1000 N/mm²
- 3) When veneered with ceramics, these alloys do not require any additional hardening process to provide their max. physical values.
- 4) Normally, the pre-heating temperature shall be 900°C. In case of form filling problems with thin copings we recommend to raise the pre-heating temperature to 950°C.
- 5) For cast-on technique.

Melting Crucible

- G = Graphite
- C = Ceramic
- Ceramic-NPM = Ceramic crucibles for non precious metal alloys

CERAMIC FIRING

Remarks

- When veneering with ceramics with higher firing temperature, oxide firing must be carried out at the highest ceramic firing temperature; max. temperature of 950°C must not be exceeded.
- Oxide firing: Please follow the instructions of the ceramic manufacturer.
- Follow the instructions of the ceramic manufacturer.
- Hardening prior to firing (conditioning for milling techniques): 930°C, 15 min, rapid cooling.
- When veneered with ceramics, these alloys do not require any additional hardening process to provide their maximum physical values.
- 25–500°C acc. EN ISO 9693

Cooling after Ceramic Firing

(from first dentine firing until and including glaze firing)

- f = Rapid cooling
At the end of the program the firing platform is completely and firing tray with objects is removed immediately. The firing tray can cool next to the furnace on a fire-resistant tray.
- n = Normal cooling (Stress relief cooling)
The firing platform is driven down at the end of the program and the firing tray is left in the radiated heat for 2–3 minutes before it is removed.
- s = Slow cooling
Depending on programming of the furnace either slow cooling to the initial temperature can be performed for approx. 4–6 minutes or a tempering phase of 3–5 minutes can be set at approx. 800°C (high-melting alloys) resp. at approx. 700°C (low-melting alloys).
Rapid cooling can always be performed for oxide and opaque firings.
- * = Relaxation cooling is recommended for long span, bulky frameworks

Treatment of the framework surface after oxide firing

- = Pickling in Hera AM 99 ca. 70°C/10 min.
- = Sandblasting with 125 µm Aluminium Oxide

Alba®, Alabond®, AlbaSun®, AureaSun®, BioCeramPlus®, BioSupraCeram®, Hera®, Heraenium®, Herabond®, HeraCeram®, Herador®, Heralay®, HeranormSun®, HeraSun®, Mainbond®, MainbondSun®, Maingold®, Preciano® = trademarks of Kulzer

The alloys of our current delivery program are listed in this table of technical data.
Further alloys can be supplied on request.

BIOLOGICAL EFFECTS OF DENTAL ALLOY COMPONENTS – AN OVERVIEW.

As a result of greater health awareness in the population, dentists and dental technicians are increasingly being confronted with questions on the composition of dental materials. This brochure aims to provide you with generally comprehensible information, so that you can quickly answer specific patient questions concerning dental alloys.

Even though the following text presents the specific properties of the individual alloy components, please note that the properties of an alloy cannot be explained by the properties of the individual components alone. An alloy features characteristics that are not shared by any of the individual elements contained in the alloy. This is most easily explained using an example from daily life. Let us briefly examine common table salt.

It is not poisonous; it is even essential to human health. Chemically, table salt is NaCl, a compound consisting of sodium and chlorine. Sodium is a soft, silvery

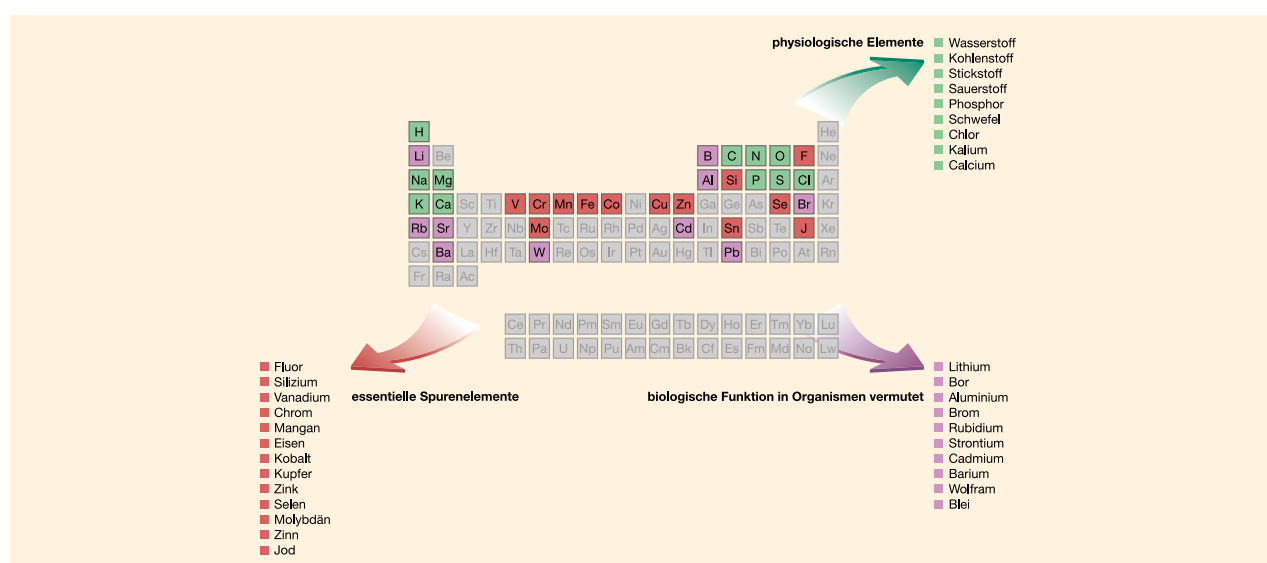
metal that easily ignites on contact with water. Chlorine is a very poisonous, green gas. Clearly, the properties of sodium and chlorine have nothing to do with the properties of table salt, since salt is neither ignitable using water nor poisonous.

Precious metal alloys are similar in this respect. In particular, the non-precious components are protected by the unreactive characteristics of the precious metals. Metals, when alone, are easily soluble and subject to corrosion in the mouth and only soluble in tiny amounts at the surface of the materials, if at all. Naturally, this optimised behaviour requires alloys that were developed and tested for the special demands in the biological environment. In addition, the processing and especially the casting process must be performed in consideration of the alloys' characteristics.

The effects of a medically used material on the patient largely depend on the

release of its components to the patient. If no components are released, no biochemical reactions can take place. Therefore, knowledge of the corrosion values is the basis of all biocompatibility assessments. If these values are known, the risk associated with the corresponding material can be estimated using general knowledge of immunology and toxicology. Poor processing, especially regarding casting and surface processing, can significantly reduce the corrosion resistance of alloys. Individual assessments of the alloy components that are most commonly used in dental technology are found below. The biological assessment is preceded by a short summary of each element's area of use in dental technology. Naturally, a comprehensive discussion is beyond the scope of this brochure.

Elements in the periodic table and their biological classification



BIOLOGICAL EFFECTS OF DENTAL ALLOY COMPONENTS – AN OVERVIEW.

Chromium – Cr

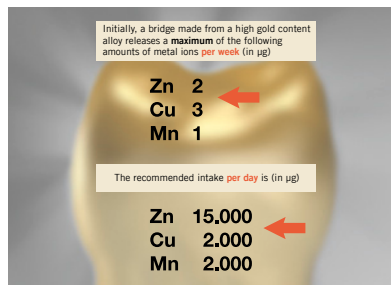
Chromium is an indispensable additive to Cobalt and Nickel alloys, which only become corrosion-resistant with the addition of Chromium. The alloys are protected through a thin layer of Chromium oxides, which are characterised by high chemical stability. Metallic Chromium and compounds of trivalent Chromium are relatively nontoxic to humans. In contrast, hexavalent Chromium is highly toxic, allergenic and carcinogenic. However, hexavalent Chromium compounds cannot form from alloys in the oral environment. It is difficult to estimate the prevalence of Chromium metal allergies, since most tests are performed using hexavalent Chromium, with mostly positive results.

Iron – Fe

Precious metal alloys only contain very small amounts of Iron. Non-precious metal alloys contain Iron as an alloy component. In both types of alloys, it serves to fine tune some properties, such as hardness, strength, oxidation behaviour and structural constitution. We do not need to devote much space to the discussion of its biologically relevant properties, since the importance of Iron to human health is generally known. Humans need about 18mg of Iron every day. Poisoning would require the consumption of large amounts of Iron compounds. Likewise, allergies against an element of which we must consume such large amounts every day are only conceivable under extreme conditions.

Germanium – Ge

This element more frequently encountered in microelectronics is rarely used as an additive in palladium-based alloys. It affects hardness and flowability. The



Metal ions released to the body

percentage of Germanium present in alloys is generally too small to cause toxic reactions. The allergological behaviour of Germanium alone is not well known at this time. However, no negative effects have been described to date in the context of dental alloys.

Iridium, Rhodium, Ruthenium – Ir, Rh, Ru

These three metals are Platinum group metals. Their properties, particularly their stability, are very similar to those of Platinum. In dental alloys, Iridium and Ruthenium are primarily used as grain refiners. They ensure a uniformly fine grain structure of the cast objects. Rhodium also controls the structural constitution, especially of alloys with high gold content, and it contributes to optimal strength. No negative toxic or allergological effects of Iridium, Ruthenium or Rhodium are known to date, since these metals are insoluble and only found in small amounts in dental alloys.

Gold – Au

Gold is the base of the majority of dental alloys. Its extremely high stability predestines Gold for use in patients' mouths. The warm colour of Gold allows the dental technician to more easily

achieve a natural colour in metal-ceramic restorations. Varying the alloy components permits the development of adequate gold-based materials for almost all indications and technical demands. Metallic Gold features very good biocompatibility because of its great stability. Synthetic Gold compounds (such as Gold cyanide) irritate the skin, and some sensitise skin, since aggressive chemicals have to be used to dissolve Gold. Toxic reactions to metallic Gold are impossible, and alleged immunological phenomena are very rare.

Indium – In

Pure Indium is a silvery-white metal that is very similar to Tin. Indium is a hardening component of classic high gold content alloys for use with ceramic veneers. Reduced gold and palladium-based alloys are also primarily "hardened" using Indium. Indium also lowers the casting temperature, which is particularly important in materials with high palladium content. Indium's oxidation behaviour in oxidation firing significantly contributes to metal-ceramic adhesion. For most organisms, including humans, Indium is not necessary for survival. The toxicological and allergological characteristics of Indium are not very well known. However, systemic toxic effects are only to be expected with the ingestion of greater amounts than those that can be present in dental alloys. Local toxic effects, such as at the gums, are conceivable in case of inadequate cleaning of oxidised alloy surfaces. Therefore, all oxides and impurities arising during manufacturing must be removed by polishing or pickling of the surface after a dental restoration is completed (see current Instructions for use for dental alloys).

Gallium – Ga

In palladium-based alloys with low or no silver content, elements that lower the melting point of Palladium must be added for common laboratory casting machines to be used. Gallium is the most effective element for this purpose. At 29.8 °C, the melting point of pure Gallium is insignificantly higher than room temperature. Even a few percent of Gallium therefore very effectively lower the melting range of palladium based alloys. At the same time, adding Gallium “hardens” the material. Not very much is known to date about the toxicological and immunological properties of Gallium. However, the doses identified as toxic in animal experiments are much higher than those potentially released from dental alloys. There are very few reports on allergic reactions to Gallium. Allergic reactions against Gallium contained in dental alloys are very rare.

Manganese – Mn

Manganese is only used to a very small extent in precious metal and non-precious metal alloys. Small amounts, about one-tenth of a percent or even less, contribute to optimised strength and adhesive oxide formation. Like many other metals, Manganese is also essential to the human body. The daily requirement is about 3 mg. Reactions against Manganese have only been found in the processing of pure Manganese dust. The amounts contained in dental alloys are irrelevant to humans, since they are a thousand times smaller than the doses consumed in food, which are necessary for survival.

Copper – Cu

Almost all gold casting alloys contain Copper. Together with Silver, Copper ensures the necessary mechanical qualities in these materials. The only coloured metal other than Gold, it also has a positive effect on the colour of the alloy, giving it a more intensive, sometimes slightly reddish gold shade.

Copper is an essential trace element for humans and most other higher organisms. The recommended daily intake is about 3 mg. Copper is very important, particularly for the body's energy metabolism. Because of the relatively large amounts needed by the human body, Copper allergies are extremely rare. Systemic intoxication is also only conceivable when consuming extremely high amounts of soluble copper compounds. Copper displays cytotoxic effects when in contact with microorganisms, such as the bacteria found in the oral cavity. This represents a desirable and important cariesinhibiting effect. Copper, and a little more frequently the similarly effective Silver, are therefore added to fastening cement as easily soluble compounds to reduce the incidence of secondary caries.

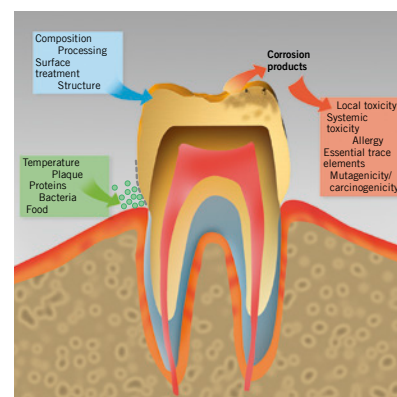
Cobalt – Co

In dental technology, cobalt is primarily used as the base metal for partial denture and CoCr ceramic-bonding alloys. Today, it is only rarely used as a component of precious metal alloys. Cobalt alone is not stable enough for medical use, and it must be passivated by the addition of Chromium and Molybdenum. Very small amounts of Cobalt are essential to the human body. In particular, vitamin B12 contains Cobalt. But even excessive doses of vitamin B12 can cause allergies or even poisoning. About 3 % of the German population exhibit allergic reactions upon skin contact

with metallic Cobalt. When assessing the risks associated with Cobalt, it is important to consider that it is always contaminated with traces of Nickel. So-called nickel-free dental Cobalt materials contain less than 0.1 mass % Nickel. However, even less than 0.1 mass % may cause immunological problems in patients diagnosed with nickel allergy.

Platinum – Pt

Palladium is a platinum group metal. Hence, it is a precious metal and features good corrosion resistance. As a secondary component of high gold content alloys, Palladium significantly contributes to good strength and firing stability, but it has a discolouring effect on gold alloys. Reduced-gold and gold-free precious metal ceramic alloys are also based on Palladium. Palladium provides these materials with the required corrosion resistance. Palladium-based alloys with Copper content should no longer be used because of possible processing problems; they should be replaced by copperfree palladium alloys (BGA [German Federal Health Office] 1993). In contrast to elements such as Zinc and Copper, Palladium is not an essential element. However, Palladium is also present in the environment in



FRAMEWORK MATERIALS

BIOLOGICAL EFFECTS OF DENTAL ALLOY COMPONENTS – AN OVERVIEW.

small amounts (approx. 2 ppb). High doses of Palladium in the form of soluble compounds have cytotoxic or systemic toxic effects. Doses identified as toxic in animal experimentation cannot be reached based on dental alloys. Statements published in the early 1990s indicating that Palladium is highly toxic or even carcinogenic were shown to be indefensible. Immunological and allergic reactions to Palladium alloys are possible. There is evidence that especially patients who exhibit allergic reactions against Nickel may also be sensitised to Palladium. Alloys containing Palladium should not be used in patients with known allergies to Palladium or its salts, such as palladium-chloride.

Molybdenum – Mo

Together with Chromium, Molybdenum ensures adequate corrosion resistance and optimised mechanical properties in Cobalt- and Nickel-based materials. Molybdenum is an essential element in the human body. There have been no reports to date on poisoning or allergies.

Nickel – Ni

Nickel serves as the base metal for very inexpensive dental alloys and as an additive for many solders. Many orthodontic alloys contain Nickel, including those on Titanium base. In humans, Nickel is considered the metal with the highest allergy risk upon skin contact. Nickel consumed with food is relatively nontoxic and has a lower allergenic potential. However, about 17 % of the female population are already sensitised to Nickel; they are at risk if supplied with Nickel alloy restorations. Nickel-containing dust is carcinogenic; the processing of Nickel alloys therefore requires particular caution.

Platinum – Pt

In gold-based materials, Platinum is an essential component to increase strength and hardness. Its stability is equivalent to that of Gold. The only disadvantage is Platinum's discolouring effect on Gold, which makes alloys with higher Platinum content quickly appear "pale yellow". Platinum is insoluble in patients' mouths, which guarantees good tolerability. In contrast, Platinum salts produced with complex chemical agents are quite toxic and exhibit allergenic potential. However, the characteristics of these salts must not be confused with those of the pure metal. Therefore, Platinum and Gold are the base for highly biocompatible alloys, especially for sensitised patients.

Silver – Ag

Although Silver is considered a precious metal in the literature, it must always be combined with the much more stable metals Gold and Palladium when used in dental alloys. The passivation effect of Silver alone is not adequate in the oral environment, since various components of saliva can attack this passivation layer. Together with Copper, Silver renders Gold casting alloys hard and strong. The addition of Silver causes palladiumbased alloys to flow better and melt at lower temperatures. Like Copper, Silver has a toxic effect on microorganisms. Therefore, Silver compounds are often used as a bacteriostatic additive in fastening cements. For higher organisms such as humans, Silver is much less toxic. Silver cutlery has been used for centuries. Silver has also been used in dental alloys since artificial dental restorations were first developed. Reports of Silver allergies are very rare. So-called "Silver allergies" to Silver jewellery are often caused by nickel-containing coatings.

Tantalum – Ta

Tantalum is only added to dental alloys in very small amounts. Its content in precious metal materials is always below one percent. Nevertheless, these small amounts are often crucial to the internal structure and strength of the cast units. Special implants, such as cardiac pacemaker leads, are also made from Tantalum. Clearly, Tantalum is considered a very biocompatible metal. Toxic reactions to the amounts present in dental alloys are not expected, and no Tantalum allergies have been reported so far.

Titanium – Ti

Small amounts of Titanium are occasionally added to precious metal alloys. Titanium has a very negative effect on structure. However, the easily oxidised Titanium is fairly unreliable in this respect, and it especially reduces recastability. The adhesion of Titanium oxide layers to ceramic veneers is also a problem. Titanium is released from precious metal alloys in quantities too small to measure. The corrosion rates of so-called commercially pure Titanium are similar to those of gold-casting alloys. In contrast to the latter, Titanium does not exhibit a reduction in corrosion rates with time. The Titanium accumulation in various organs observed in animal experimentation is likely immunologically and toxicologically irrelevant for humans. Only isolated cases of Titanium allergies have been described to date.

Zinc – Zn

Zinc improves flowability, especially in gold-casting alloys. When combined with Platinum and other elements, Zinc is the most important “hardening” component in modern metal-ceramic alloys such as “Bio Herador N”. After Iron, Zinc is the most important essential trace element for the human body. More than one hundred enzymes in the human body contain Zinc as an essential component. Zinc deficiency, which is relatively common, causes immune system disturbances. As a medication, Zinc is therefore used to strengthen the body's defences and to treat heavy metal poisoning.

As another example of its importance, Zinc is required for the breakdown of alcohol in the liver. Since Zinc is a familiar element to the body, any amounts consumed are quickly transported to parts of the body where it is needed. According to WHO recommendations, an adult requires about 15 mg of Zinc per day, which can be easily consumed with a balanced diet.

Because of the high recommended daily intake, Zinc poisoning is only possible when consuming large amounts. Allergic reactions to Zinc are not known at this time, and they are not expected given the high essential dose. Higher concentrations of Zinc have a bacteriostatic effect on microorganisms. This is one reason for the great success of Zinc-phosphate cements.

experience on this matter comes from foods conserved in Tin cans. The typical Tin concentration in canned foods is 20–50 mg/kg. The highest tolerable level is considered 250 mg/kg. The amounts of Tin released from dental alloys are negligible in comparison. Organically bound Tin, such as was used in the past in some medications and in fungicides, etc., is quite poisonous to humans, but it is not released from precious metal dental alloys. No allergies against Tin are known to date.

Cerium – Ce

Cerium increases the strength of high-gold-content alloys. In addition, it improves metal-ceramic adhesion. There is not much known about the toxicology of Cerium. However, the toxic doses identified in animal experimentation are far above the Cerium content of dental alloys. Allergies against Cerium are not known to date.



Tin – Sn

Tin is used to improve the hardness of gold-cast alloys. In reduced-gold metal-ceramic alloys, Tin improves flowability and increases hardness. In solder and palladium-based alloys, Tin is used to lower the melting range. Metallic or inorganically bound tin is only poisonous to humans in high concentrations. Most

FRAMEWORK MATERIALS

The most important information on the biological effects of individual alloy components is summarised in the following overview.

Element	Essential amount/day	Intake/day	Systemic toxicity	Cytotoxicity	Allergies
Beryllium	–	0.02 mg	High, dust is cancerogenic	High	Common
Chromium	0.05 mg (uncertain)	0.1 mg	Metal and Cr (III) salts: Low Cr (VI): High	Cr (III) salts: Low Cr (VI): High	Cr (VI): Common
Iron	18 mg	10–20 mg	Very low	Low	Very rare
Gallium	–	0.0005 mg	Low	Low	None reported
Germanium	–	0.4–3.5 mg	Very low	Low	None reported
Gold	–	0.0001 mg	Very low	Low	Metal: rare Compounds: possible
Indium	–	0.003 mg	Low	High	Rare
Iridium	–	0.000002 mg	Very low	Low	None reported
Cobalt	0.03 mg	0.2 mg	Low	High	3 % of the population
Copper	3 mg	2–5 mg	Low	Very high	Very rare
Manganese	3 mg	3 mg	Metal: Very low; Dust: High	Low	Very rare
Molybdenum	0.2 mg	0.3 mg	Low	Low	None reported
Nickel	uncertain	0.5 mg	Dust cancerogenic, otherwise low	Low	Very common
Palladium	–	0.001 mg	Very low	Very low	Prevalence unknown, those allergic to nickel are more commonly affected
Platinum	–	0.001 mg	Very low	Low	Metal: Very rare Compounds: common
Rhodium	–	Not known	Very low	Low	None reported
Ruthenium	–	0.0002 mg	Very low	Low	None reported
Silver	–	0.05 mg	Low	Very high	Rare
Tantalum	–	Not known	Very low	Very low	None described
Titanium	–	1 mg	Very low	Very low	Very rare
Zinc	15 mg	20 mg	Very low	High	Very rare
Tin	–	0.2 mg	Low	Low	Very rare
Cerium	–	Not known	Low	Low	None reported

The information on essential quantities is based on WHO recommendations. Some daily intake values are taken from the literature; others were estimated based on the composition of typical foods. Information on systemic toxicity comes from different sources in toxicological literature.

Cytotoxicity information particularly takes into account examinations on murine fibroblasts. High cytotoxicity also results in a high antibacterial effect, which can certainly be considered a positive characteristic if the element has other positive biological properties (e.g. Copper). Information on the prevalence of allergies was taken from different sources.

FRAMEWORK MATERIALS

Veneering gold, training metal, solder or laser-welding wires – our range also includes the minor components for processing metals in dental technology.

VISIBLE SUCCESS.

One of seven good reasons to select Hera.

To create high quality alloys you need a perfect base. With Hera, the our base consists of seven valuable components, such as success. It is proven and only possible with steadily increasing market share, to be one of the leading alloy manufactures.

www.kulzer.com

PRECIOUS METAL WIRE ACC. TO EN ISO 22674

Dimensions and delivery form

Alloy	Form	Profile	Dimensions in mm
Maingold NO	round	•	0.3 / 0.45
Maingold O	round	•	0.7 / 0.8 / 0.9 / 1.0 / 1.1 / 1.2 / 1.5 / 1.8 / 2.0
Maingold O	half round	◐	0.75 x 1.5 / 0.9 x 1.8
Maingold O	half round	◑	1.1 x 1.65

Delivery form 200 mm

Alloy	Dimensions	Art. Code
Maingold NO	Ø 0.3 mm	1455 0030
	Ø 0.45 mm	1455 0450
Maingold O	Ø 0.7 mm	1440 0070
	Ø 0.8 mm	1440 0080
	Ø 0.9 mm	1440 0090
	Ø 1.0 mm	1440 0100
	Ø 1.1 mm	1440 0110
	Ø 1.2 mm	1440 0120
	Ø 1.5 mm	1440 0150
	Ø 1.8 mm	1440 0180
	Ø 2.0 mm	1440 0200

Alloy	Dimensions	Art. Code
Maingold O	0.75 x 1.5 mm half round	1447 5150
	0.9 x 1.8 mm half round	1440 9180
	1.1 x 1.65 mm semi-oval	1440 1650



FRAMEWORK MATERIALS

7.2 PRECIOUS AND NON PRECIOUS METAL PRODUCTS

PRECIOUS METAL WIRE ACC. TO EN ISO 22674

Composition

Alloy	Content in mass %												Type	Colour	Indications
	Au	Ag	Pt	Pd	Cu	Sn	Zn	In	Ta	Ir	Ru	others			
Maingold NO	73.0	19.4	5.0	2.6	–	–	–	–	–	–	–	–	1	yellow	9, 11
Maingold O	70.0	12.5	7.0	0.4	10.0	–	–	–	–	0.1	–	–	4	yellow	13
Heraplat	61.0	–	23.8	15.0	–	–	–	–	–	–	–	0.2 Rh	4	white	9

Technical data

Alloy	Density	Hardness ¹⁾			0.2 % yield strength ¹⁾		Elongation ¹⁾		Melting range	
	g/cm ³	HV5			MPa ²⁾		%		Solidus	Liquidus
		w/k	v	s	w/k	v	w/k	v	°C	°C
Maingold NO	16.5	60	–	–	110	–	34	–	1100	1170
Maingold O	15.7	180	285	–	430	740	26	10	890	970
Heraplat	18.0	135	250	–	350	780	24	15	1360	1460

Legend:

¹⁾ Acc. to EN ISO 22674

²⁾ 1 MPa = 1 N/mm², 1 GPa = 1000 N/mm²

LASER WELDING WIRES

Ø 0.3 mm x 200 mm Ø 0.5 mm x 200 mm

Alloy	Art. Code	Art. Code
BioCeram Plus	1252 0330	1252 0300
Bio Herador N	1257 0330	1257 0300
Bio Herador SG	1256 0330	1256 0300
Bio Herador GG	–	1355 0300
Bio Maingold SG	1431 0330	1431 0300
Bio Heranorm	1502 0330	1502 0300
Herador H	1570 0330	1570 0300
Herador NH	1610 0330	1610 0300
Herador S	–	1700 0300
Herador G	1510 0330	1510 0300
Herador GG	1350 0330	1350 0300
Herador PF	1615 0330	1615 0300
Herador C	1512 0330	1512 0300
Herador MP	1253 0330	1253 0300
Bio Supra Ceram	–	1620 0300

Ø 0.3 mm x 200 mm Ø 0.5 mm x 200 mm

Alloy	Art. Code	Art. Code
Herador EC	–	1612 0300
Heraloy G	1030 0330	1030 0300
Herabond	–	1560 0300
Albabond B	1095 0330	1095 0300
Heranorm Sun	1495 0330	1495 0300
Mainbond Sun	1491 0330	1491 0300
Aurea Sun	1201 0330	1201 0300
Alba Sun	1140 0330	1140 0300
Mainbond A	1500 0330	1500 0300
Mainbond EH	1505 0330	1505 0300
Hera KF	1200 0330	1200 0300
Maingold MP	1437 0330	1437 0300
Hera GG	1390 0330	1390 0300
Hera PF	1395 0330	1395 0300

PRECIOUS METAL SOLDERS ACC. TO EN ISO 22674

Solder strips 0.25 mm x 1.0 mm, 4 g, roll

Solders for ceramic bonding alloys	Art. Code
Herador solder 1100	1580 0000
Herador solder 1070	1585 0000
Herador solder 1060	1581 0000
Herador solder 1060 S	1581 5000
Herador PF solder 1040	1586 0000
Herador solder 1030	1251 0000
Herador PF solder 1010	1580 5000
Herador/Maingold solder 800	1482 0000
Herador/Maingold PF solder 800	1484 0000
Herador solder V 800	1583 0000

Solders for universal alloys	Art. Code
Herastar AU solder 1	1606 0000
Herastar AU solder 2	1607 0000
HeraSun solder 1	1604 0000
HeraSun solder 2	1603 0000
Maingold solder 875	1501 0000
Spezial solder 970	1509 0000

Solders for precious and non-precious alloys	Art. Code
Stahlgold solder 750	1380 0000
Stahlgold solder 910	1360 0000

Solders for gold casting alloys	Art. Code
Maingold solder 850	1481 0000
Maingold/Hera solder 800	1482 0000
Maingold/Hera solder 750	1483 0000
Herador/Maingold PF solder 800	1484 0000
Maingold PF solder 750	1485 0000
U-solder 820	1241 0000
Hera solder 800	1662 0000



Caution!

Stahlgold solder 910 contains nickel and must not be used for individuals with known nickel sensitivity.

FRAMEWORK MATERIALS

7.2 PRECIOUS AND NON PRECIOUS METAL PRODUCTS

SOLDERS FOR NON PRECIOUS ALLOYS

Heraenium P Lot 1

CoCr base solder acc. to EN ISO 9333

Advantages

- Soldering rods for all CoCr base bonding alloys for use with high-fusing veneering-ceramics with conventional CTE range prior to firing
- Especially proper for Heraenium P and Heraenium Pw
- Beryllium, Cadmium and Lead free

Product details

Composition (content in mass %)	Co 38.7 Fe 29.0 Cr 21.8 Si 5.4 Mo 2.7 B 1.0 V 1.0 Mn 0.4
---------------------------------	---

Delivery form4 g
Ø 1.2 mm, 1 package**Art. Code****6600 4232****HeraeniumSun Lot 1**

CoCr base solder acc. to EN ISO 9333

Advantages

- Soldering rods intended exclusively for CoCr base bonding alloys for use with low-fusing veneering-ceramics with high expansive CTE range prior to firing.
- Especially proper for HeraeniumSun
- Beryllium, Cadmium and Lead free

Product details

Composition (content in mass %)	Co 27.1 Cr 21.8 Mo 2.7 Mn 0.4 Fe 41.6 Si 5.4 B 1.0
---------------------------------	---

Delivery form4 g
Ø 1.2 mm, 1 package**Art. Code****6602 1898****Heraenium NA Lot 1**

Precious metal solder ISO 22674

Advantages

- Solder for all NiCr base bonding alloys for use with high-fusing veneering-ceramics with conventional CTE range prior to firing
- Beryllium, Cadmium and Lead free

Product details

Composition (content in mass %)	Au 58.9 Pd 22.0 Cu 15.0 In 1.0 Mn 3.0 Ir <0.1 Ru <0.1
---------------------------------	--

Delivery form4 g
Ø 1.2 mm, 1 roll**Art. Code****6460 2009**

CE 0197	Prior to Ceramic Firing		After Ceramic Firing		Laser welding wire
	Solder	Working temperature °C* / Solder colour	Solder	Working temperature °C*	ø 0.35 and ø 0.5 mm
Non precious metal and non precious metal universal alloys acc. to EN ISO 22674 und EN ISO 9693-1					
Heraenium P	Heraenium P Lot 1	1180 / white	Stahlgold 750	750	CoCr Laser welding wire
Heraenium Pw	Heraenium P Lot 1	1180 / white	Stahlgold 750	750	CoCr Laser welding wire
Heraenium Sun	HeraeniumSun Lot 1	1185 / white	Stahlgold 750	750	CoCr Laser welding wire
Heraenium NA	Heraenium NA Lot 1	1150 / white	Stahlgold 750	750	–
Heraenium S	Heraenium NA Lot 1	1150 / white	Stahlgold 750	750	–

	Colour	Content in mass %										Working temperature °C*	Use
		Co	Fe	Cr	Si	Mo	B	V	Mn	W	others		
Solder for non precious metals													
Heraenium P Lot 1		38.7	29.0	21.8	5.4	2.7	1.0	1.0	0.4	–	–	1180	1/A
HeraeniumSun Lot 1		27.1	41.6	21.8	5.4	2.7	1.0	–	0.4	–	–	1185	1/A

	Colour	Content in mass %							Working temperature °C*	Use
		Au	Pd	Cu	In	Mn	Ir	Ru		
Solder for non precious metals										
Heraenium NA Lot 1		58.9	22.0	15.0	1.0	3.0	x	x	1150	1/A

* more detailed informations in our table technical data for dental alloys.

PRACTICE MATERIAL

Training metal set

Non precious metal alloy for practice jobs

Training metal is a yellow alloy that is not used in the mouth, making it possible to conduct practice jobs and produce show pieces with little expenditure of material. The casting features and mechanical properties of training metals are so similar to those of Type 3 (acc. to EN ISO 22674) gold cast alloys that no differences in processing are needed.

Training metal can be cast using any conventional casting device. Training metal is free of beryllium, nickel, cadmium and lead.

Two training solders with working temperatures of 800 °C and 700 °C are available for soldering.



Delivery form	Art. Code
Training Metal Set, consisting of 30g training metal 1g training lot 1 1g training lot 2 Hera UL 99 flux Hera SP 99 casting powder	6460 2012
1g training metal casting plate, rand. weights	6460 2013
Training sheet metal, 200x75 mm	6460 2014
Training solder 800, working temperature 800 °C, 3g pack	6460 2015
Training solder 700, working temperature 700 °C, 3g pack	6460 2016

Technical data:

Composition (Content in mass %)								
Cu	Sn	Co						
85.0	10.0	5.0						
Hardness	0.2 % Yield strength	Expansion	Density	Melting range Solidus	Melting range Liquidus	Casting temperature	Preheating temperature	Soft anneal
HV5	MPa	%	g/cm ³	°C	°C	°C	°C	°C, Min.
125	280	53	8.8	860	1030	1160	700	750, 15

PRECIOUS METAL PRODUCTS

Blendgold Neu

Blendgold Neu significantly improves the bond strength of the metal-ceramic interface and veneer staining. Blendgold is a precious metal paste consisting of pure gold, organic material, and ceramic particles. The gold is present in the form of spherical particles which are bonded into a paste through the added organic material. At a firing temperature of 820°C (900°C if applied to Preciano Galvano Gold crowns) under the melting point of gold (1063°C) – the spherical gold particles diffuse into one another and form a gold layer that also diffuses into the surface of the metal framework. The ceramic particles embedded in the paste partly project from the gold layer after firing. These particles fuse with the applied ceramic during subsequent ceramic firings and form a strong mechanical bond in addition to the chemical bond.

Advantages

- Enhances the metal-ceramic bond; particularly indicated for the galvano-forming process
- Surface sealing of metal framework
- Reinforcement for all thin layered veneer surfaces
- Superior shade matching of ceramic veneers because of gold background
- Enhanced shade precision at crown margins
- Concealed weld joints before firing
- Closure of small coping perforations

Indication

- Optimised adhesive bonding and aesthetics, and for the electroforming process

Type

Precious metal paste with ceramic

Contents depending on application

Pure gold and ceramic particles

Packing unit

approx. 4.8g syringes*

Art. Code	6460 2001
-----------	-----------

* calculated in grams according to filling weight



All prices are subject to change without prior notice in line with change of precious metals world prices at time of order received in Germany. Prices upon request.

Duolock®*, precision attachments

Duolock, LogaSun and other precision attachments can be used for combined dentures. The wide range of attachments, retainers and retention elements, root pins and anchorage systems offers precision solutions for all challenges in combination technique.

FULLY DEVELOPED TRUST.

One of seven good reasons to select Hera.

To create high quality alloys you need a perfect base. With Hera, the our base consists of seven valuable reasons, such as trust. We value our customers and our sales representatives understand the requirements and challenges involved and can always offer the best solution which provides the foundation of partnerships for many years.

www.kulzer.com

PRECISION ATTACHMENT-MATERIALS AND TECHNICAL DATA ACC. TO EN ISO 22674

Alloy CE0197	Material no.	Content in mass %										Appli- cation symbol	Melting range		Hardness HV5 tempered	0.2 % yield strength, tempered MPa	Tempering °C	Min.	
		Au	Ag	Pt	Pd	Cu	Sn	Zn	In	Ga	Ir		Ru	others					Solidus °C
HfA (Heraplat)	1	61.00	–	23.80	15.00	–	–	–	–	–	–	–	0.2 Rh	1360	1460	250 HV5	780	700	30
Pt-Ir	2	–	–	80.00	–	–	–	–	–	–	20.00	–	–	1830	1855	300 HV5	920	–	–
Pd-Ag base (Alba O)	11	2.00	37.00	8.00	40.00	13.00	–	–	–	–	–	–	–	1170	1240	235 HV5	620	220	10
Au-Ag base (Maingold O)	15	70.0	12.5	7.0	0.4	10.0	–	–	–	–	–	0.1	–	890	970	285	740	400	15
Au-Ag base (Maingold SG)	16	71.00	12.30	2.00	1.90	12.20	–	0.50	–	–	<0.1	<0.1	–	900	930	250 HV5	670	350	15
Au-Ag base (Bio Maingold SG)	17	71.00	12.30	3.90	–	12.20	–	0.50	–	–	0.10	–	–	900	930	250 HV5	670	350	15
Au-Ag base Mainbond EH	21	70.00	13.40	8.50	–	7.50	–	0.50	–	–	0.10	–	–	895	1010	295 HV5	600	450	15
Au-Ag base	21	70.00	13.40	8.50	–	7.50	–	0.50	–	–	0.10	–	–	895	1010	295 HV5	600	450	15
Titanium Grade 2	30	Ti 99.7 % = Ti 7065																	
Stainless steel	32	1.4305 X10CrNiS189 !!																	
Plastic	33	PEEK Polyetheretherketon																	
Titanium alloy	35	Ti 99.00%, C 0.10%, Fe 0.30%, O 0.5%, H 0.015% (3.7065)																	
Plastic	36	PMMA Polymethylmethacrylat																	
Plastic	37	POM Polyoxymethylen																	
Aluminium oxide	38	Al ₂ O ₃																	
Plexiglas	40	Methylmethacrylate based acrylic resin																	
Polypropylen	41																		
Polystryol	42																		
Stainless steel	45	1.4301 X5CrNi1810 !!																	
Au-Ag base	46	67.00	13.50	8.50	–	10.80	–	0.20	–	–	–	–	–	910	995	265 HV1	680	–	–
Au-Pd base	47	60.00	–	19.00	20.00	–	–	–	–	–	1.00	–	–	1400	1470	220 HV1	610	–	–
Au-Ag base	48	67.00	13.50	8.50	–	10.80	–	0.20	–	–	–	–	–	910	995	–	–	400	60
Au-Ag Vorderseite	49	79.30	12.30	0.30	1.60	5.50	–	1.00	–	–	–	–	–	890	1010	210/310 HV5	480*/800	–	–
Au-Ag Rückenplatte	49	70.00	13.50	4.40	2.00	8.80	–	1.20	–	–	0.1	–	–	890	1010	210/310 HV5	480*/800	–	–
Au-Ag	50	79.30	12.30	0.30	1.60	5.50	–	1.00	–	–	–	–	–	890	1010	210/310 HV5	480*/800	–	–
Ti 6Al 4V	51	Al 5.5–6.75%, V 3.5–4.5%, Others <0.5%, Rest Ti																	

* soft-annealed

Please note!

Individual components (matrices and patrices) of certain attachments are available in different alloys.
High-fusing alloys components are cast-on (only with certain bonding alloys with a high melting range).
!! = Attention! Contains Nickel



T-ATTACHMENTS

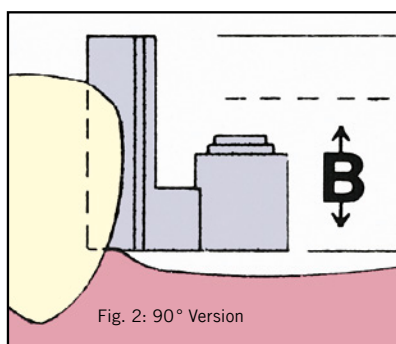
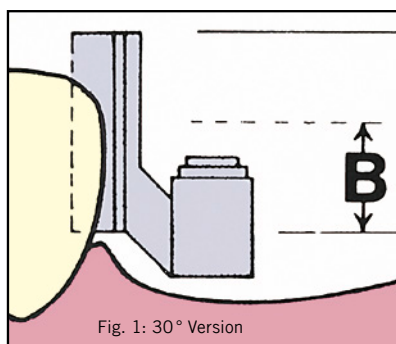
DuoLock®*

Rigid, intracoronal precision attachment with defined adjustable friction for prosthetic treatment with free end and bounded saddle partial dentures as well as removable bridges.

Positioning pins have to be ordered separately.

Features:

- Appendix angle available in 30° (Fig. 1) or 90° (Fig. 2)
- Exchangeable Titanium matrix body
- Different types of threaded cap for the cast on, adhesive, solder or laser techniques
- The DuoLock can be shortened to 2.9 mm



Scale 1:1	Appendix Angula- tion	Dimensions Threaded cap		Material Matrix		Material Threaded cap Secondary	Art. Code
		height mm	width mm	Primary			
	30°	5.4	3.1				6480 4900
	30°	5.4	3.1				6480 4901
	30°	5.4	3.1				6480 5000
	30°	5.4	3.1				6480 5010
	30°	5.4	3.1				6480 5100
	30°	5.4	3.1				6480 5110
	30°	5.4	3.1				6480 5110
	90°	5.4	3.1				6480 5200
	90°	5.4	3.1				6480 5210
	90°	5.4	3.1				6480 5300
	90°	5.4	3.1				6480 5310
	30°	5.4	3.1				6480 5001
	30°	5.4	3.1				6480 5005
	30°	5.4	3.1				6480 5101
	30°	5.4	3.1				6480 5105
	90°	5.4	3.1				6480 5201
	90°	5.4	3.1				6480 5205
	90°	5.4	3.1				6480 5301
	90°	5.4	3.1				6480 5305

T-ATTACHMENTS

DuoLock®* components

All Patrix bodys
are Titanium



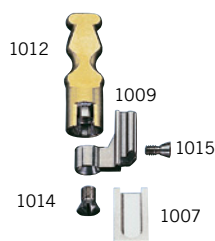
Attachment Art. Code 6480 4900 – 30°	Material	Art. Code
Matrix Titanium	30	6480 1001
* Patrix body Titanium, exchangeable	30	6480 1009
Threaded cap Titanium	30	6480 1003
Activation screw Titanium	30	6480 1015
Retention screw Titanium	30	6480 1014



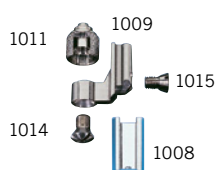
Attachment Art. Code 6480 4901 – 30°	Material	Art. Code
* Patrix body Titanium, exchangeable	30	6480 1009
Threaded cap Titanium	30	6480 1003
Activation screw Titanium	30	6480 1015
Retention screw Titanium	30	6480 1014
Spacer	38	6480 1006



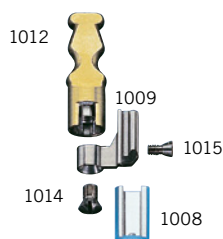
Attachment Art. Code 6480 5000 – 30° and 6480 5200 – 90°	Material	Art. Code
Matrix HFA (Heraplat)	1	6480 1007
* Patrix body Titan, exchangeable, 30°	30	6480 1009
* Patrix body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pd-Ag base (Alba O)	11	6480 1011
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015



Attachment Art. Code 6480 5010 – 30° and 6480 5210 – 90°	Material	Art. Code
Matrix HFA (Heraplat)	1	6480 1007
* Patrix body Titan, exchangeable, 30°	30	6480 1009
* Patrix body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pt-Ir with dublicationg aid (Brass)	2	6480 1012
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015



Attachment Art. Code 6480 5100 – 30° and 6480 5300 – 90°	Material	Art. Code
Matrix plastic mit Pt/Ir-guide plate	2	6480 1008
* Patrix body Titan, exchangeable, 30°	30	6480 1009
* Patrix body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pd-Ag base (Alba O)	11	6480 1011
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015



Attachment Art. Code 6480 5110 – 30° and 6480 5310 – 90°	Material	Art. Code
Matrix plastic mit Pt/Ir-guide plate	2	6480 1008
* Patrix body Titan, exchangeable, 30°	30	6480 1009
* Patrix body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pt-Ir mit Dublierhilfe (Brass)	2	6480 1012
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015

*including screws

T-ATTACHMENTS

DuoLock®* components



Attachment Art. Code 6480 5001 – 30° and 6480 5201 – 90°	Material	Art. Code
Matrix HFA (Heraplat)	1	6480 1007
*Patrx body Titan, exchangeable, 30°	30	6480 1009
*Patrx body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pd-Ag base (Alba O) smooth	11	6480 1013
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015



Attachment Art. Code 6480 5005 – 30° and 6480 5205 – 90°	Material	Art. Code
Threaded cap Titanium	30	6480 1003
Matrix HFA (Heraplat)	1	6480 1007
*Patrx body Titan, exchangeable, 30°	30	6480 1009
*Patrx body Titan, exchangeable, 90°	30	6480 1010
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015

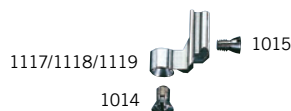


Attachment Art. Code 6480 5101 – 30° and 6480 5301 – 90°	Material	Art. Code
Matrix plastic Pt-Ir-guide plate	2	6480 1008
*Patrx body Titan, exchangeable, 30°	30	6480 1009
*Patrx body Titan, exchangeable, 90°	30	6480 1010
Threaded cap Pd-Ag base (Alba O) smooth	11	6480 1013
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015



Attachment Art. Code 6480 5105 – 30° and 6480 5305 – 90°	Material	Art. Code
Threaded cap Titan	30	6480 1003
Matrix plastic Pt-Ir-guide plate	2	6480 1008
*Patrx body Titan, exchangeable, 30°	30	6480 1009
*Patrx body Titan, exchangeable, 90°	30	6480 1010
Retention screw Titanium	30	6480 1014
Activation screw Titanium	30	6480 1015

*including screws



Patrx with allowance from Titanium	Material	Art. Code
* 30° Patrx body Titanium, blue, oversize 0.08 mm	30	6480 1117
* 30° Patrx body Titanium, yellow, oversize 0.15 mm	30	6480 1118
* 30° Patrx body Titanium, red, oversize 0.22 mm	30	6480 1119
* 90° Patrx body Titanium, blue, oversize 0.08 mm	30	6480 1120
* 90° Patrx body Titanium, yellow, oversize 0.15 mm	30	6480 1121
* 90° Patrx body Titanium, red, oversize 0.22 mm	30	6480 1122

*including screws

Legend



cast on



solderable



bondable



alloy number

T-ATTACHMENTS

Ceramic matrix



Ceramic matrix, a spacer technique, which uses a ceramic spacer to produce the matrix contours directly in the casting, is an alternative to casting on or soldering on prefabricated components. The high precision spacers guarantee extremely accurate reproduction of the contouring so that no preparation of the casting is required on the functional surfaces of the matrix. The plastic sleeve, which is used as a casting aid, burns out without residue. The ceramic matrix for the spacer technique can be used in conjunction with all versions.

	Material	Art. Code
Ceramic matrix	38	6480 1006

Instruments



Instruments and accessories	Art. Code
Preparation set contains: 5151, 5152, 5153, 1014,1015	6480 5150
Universal paralleling mandrel	6480 5151
Patrx paralleling mandrel (supplied without patrx body)	6480 5156
Porcelain matrix paralleling mandrel	6480 5641
Exchange and activation instrument	6480 5152
Cutter for removing investment for the threaded cap	6480 5153
Thread tap for the threaded cap	6480 5154
Adhesive aid for Art. Code 1011	6480 5155
Thread adhesive	6480 5951

5157



DuoLock – matrix aid, Ms	Art. Code
The matrix aid for the DuoLock and MainLock attachments was specially developed for secure fixation of the patrx in the stone model when renewing or repairing a denture.	6480 5157

5158



DuoLock – impression coping, Ms	
The impression coping for the DuoLock attachment is an accessory used for fixation of the attachment patrx when taking an impression in the patient's mouth and for transferring the oral situation to the model when fabricating or repairing a denture	6480 5158

5333



DuoLock – adhesive aid, Ms (only for smooth threaded cap Art. Code 1003 + 1013)	
This adhesive aid was specially developed for the adhesive technique with threaded caps in CrCo frameworks. It produces a uniform adhesive gap and guarantees a reliable bond.	6480 5333

5335



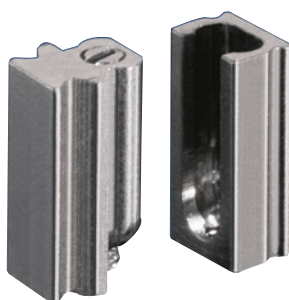
Retention screw, Ms	
The brass retention screw is for use with adhesive aid and impression coping.	6480 5335

7 HERA® FRAMEWORK MATERIALS

7.3 PRECISION ATTACHMENTS




T-ATTACHMENTS

DuoLock®* prospektive

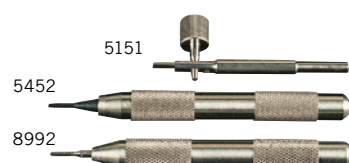





The DuoLock prospektiv T attachment is a rigid, intracoronal retentive unit. This attachment is based on the proven DuoLock attachment. It enables a restoration to be designed so that the existing intraoral primary units can be used as base and anchorage components for a fixed/removable restoration in case of possible loss of the abutment tooth.

The matrix is made of high-fusing Heraplat alloy (HFA) with a melting range of 1360 °C to 1460 °C. The patrix is made from platinum-iridium. The DuoLock prospektiv can be shortened to 2.9 mm.

Scale 1 : 1	Dimensions Threaded cap		Material Matrix	Material Matrix	Art. Code
	height mm	width mm	Primary	Secondary	
	5.4	2.8			6480 5323

DuoLock®* prospektiv Components



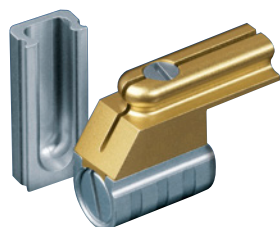
Components	Material	Art. Code
Screw, Titanium		6480 1018
Patrx, Pt-Ir (incl. screw)		6480 1017
Matrix, HFA (Heraplat)		6480 1016

Instruments	Art. Code
Paralleling mandrel	6480 5151
Activation instrument	6480 5452
Thread tap	6480 8992

T-ATTACHMENTS

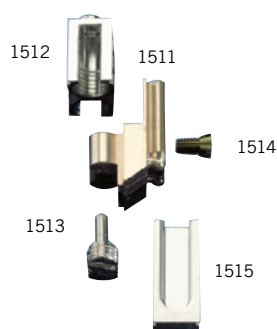
LogaSun®

Intracoronaral slimline T attachment for all prosthetic indications



A feature of the LogaSun attachment is the minimum depth and height required for integrating the matrix (1.4 mm). The width of the die and matrix should be 2.6 mm. The matrix is made from a high gold content, palladium free alloy. The LogaSun attachment guarantees optimum retention, even when it has been shortened by the maximum amount. All types of alloy can be cast on to the flat, smoothly milled Pt-Ir matrix without any problem. The accurate, flush basal fit prevents accretion.

Scale 1 : 1	Appendix Angula- tion	Dimensions		Material Matrix	Material Threaded cap	Art. Code
		Threaded cap height mm	width mm		Secondary	
	35°	6.6	2.5			6480 0282
	90°	6.6	2.5			6480 0296



LogaSun® Components

Attachment Art. Code 6480 0282 – 35°	Material	Art. Code
Matrix		6480 1515
° Patric body		6480 1511
* Patric complete		6480 1510
Threaded cap		6480 1512
Activation screw		6480 1514
Retention screw		6480 1513

° including screws, Patric body, Threaded cap

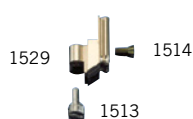
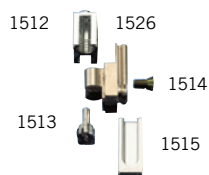
* including screws

7 HERA® FRAMEWORK MATERIALS

7.3 PRECISION ATTACHMENTS

T-ATTACHMENTS

LogaSun® Components



Attachment Art. Code 6480 0296 – 90°	Material	Art. Code
Matrix	2	6480 1515
* Patrix body	21	6480 1526
Threaded cap	2	6480 1512
Retention screw	30	6480 1513
Activation screw	30	6480 1514

* including screws

Matrix with allowance from Titanium	Material	Art. Code
35° Patrix body, oversize 0.04 mm	30	6480 1529

LogaSun® Instruments and accessories

Instruments and accessories	Art. Code
Duplicating anchor	6480 0292
Screwdriver	6480 0294
Paralleling mandrel	6480 0297
Spacer	6480 1507

ANTERIOR ATTACHMENTS

VentraLock®*

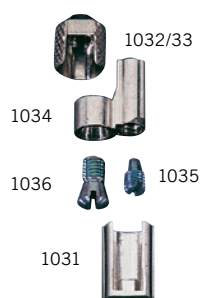
The VentraLock is a rigid intracoronal retentive unit for the anterior region with defined adjustable friction using a basal activation screw in the head of the patrix.



Features:

- Activation screw in the head of the patrix and retention screw easily accessible basally
- Cast on matrix for non precious metal alloys
- Threaded cap for use with the soldering, adhesive or laser techniques
- Requires a bracing unit
- Recommended for bounded saddle partial dentures
- Can be shortened to max. 2.9 mm

Scale 1:1	Dimensions Threaded cap		Material Matrix	Material Threaded cap		Art. Code
	height mm	width mm		Primary	Secondary	
	4.0	2.8				6480 5390
	4.0	2.8				6480 5391



Components to	Material	Art. Code	
		6480 5390	6480 5391
Threaded cap, Titanium		6480 1032	
Threaded cap, Pd-Ag base (Alba O)			6480 1033
Patrx body, Titanium, exchangeable, including screws		6480 1034	6480 1034
Activation screw, Titanium		6480 1035	6480 1035
Retention screw		6480 1036	6480 1036
Matrix, Pt-Ir		6480 1031	6480 1031



Instruments and accessories	Art. Code
Paralleling mandrel	6480 5396
Activation instrument	6480 5397
Adhesive aid	6480 5398

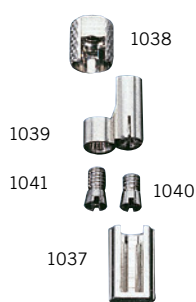
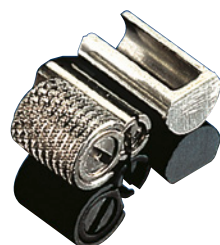
ANTERIOR ATTACHMENTS

AnterioLock®*

The activation screw has a locking mechanism and cannot therefore be removed. The AnterioLock is a very small intracoronal precision attachment for the anterior region with adjustable friction.

Features:

- Cast on matrix for precious and non precious metal alloys
- Exchangeable patrix body
- Requires a bracing unit
- Recommended for bounded saddle partial dentures



Scale 1:1	Dimensions Threaded cap		Material Matrix	Material Threaded cap	Art. Code
	height mm	width mm	Primary	Secondary	
	3.9	2.5			6480 5400

Components	Material	Art. Code
Matrix, Pt/Ir		6480 1037
Threaded cap, Pd-Ag base (Alba O)		6480 1038
Patrx body, Pd-Ag base (Alba O), exchangeable, including screws		6480 1039
Activation screw, Titanium		6480 1040
Retention screw, Titanium		6480 1041

Instruments and accessories	Art. Code
Paralleling mandrel	6480 5451
Activation instrument	6480 5452
Adhesive aid	6480 5453
Thread tap	6480 8992

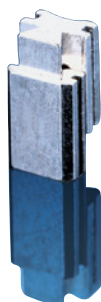
ANTERIOR ATTACHMENTS

Unilateral T attachment

The unilateral T attachment is a nonactivating connector for fixed bridges that have to be fabricated in two or more sections due to convergent or divergent abutment teeth.

Features:

- Cast on matrix and patrix



1311









1310



8215



Scale 1:1	Dimensions		Material		Art. Code
	height mm	width mm	Matrix Primary	Matrix Secondary	
 	3.8	2.7	 	 	6480 8210

Components	Material	Art. Code
Matrix, HFA	 	6480 1310
Patrx, HFA	 	6480 1311

Instruments and accessories	Art. Code
Paralleling mandrel	6480 8215

EXTRACORONAL ATTACHMENTS

Roach

Extracoronar connector for removable dentures

The Roach attachment is an extracoronar connector for removable bounded saddle and bilateral free end partial dentures.



8021

8026

1301
















8027



8022



Scale 1:1	Form	Dimensions			Material		Art. Code
		head Ø mm	height mm	width mm	Matrix Secondary	Matrix Primary	
	without pedicle	2.5	5.0	4.4	 	 	6480 8021
	with pedicle	2.5	5.0	8.4	 	 	6480 8026

Components	Material	Art. Code
Patrx, HFA (Heraplat)	 	6480 1301
Matrix without pedicle (Maingold SG)	 	6480 8022
Matrix with pedicle (Maingold SG)	 	6480 8027

EXTRACORONAL ATTACHMENTS

CentraLock®* II omega attachment

Rigid extracoronaral retentive unit for free end and bounded saddle partial dentures

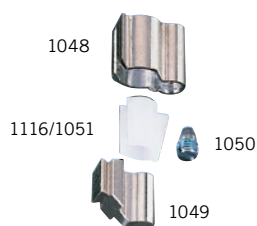


Features:

- Designed for the adhesive and laser technique
- Matrix easily bonded into the CrCo framework using the adhesive aid
- Exchangeable, activating plastic insert
- Cast on Pt-Ir patrix for precious and non precious metal alloys
- Requires a bracing unit

Scale 1 : 1	Dimensions			Material Matrix	Material Patrx Ø 1.8 mm	Art. Code
	height mm	length mm	width mm	Primary	Secondary	
	4.0	2.9	4.3			6480 5660
	4.0	2.9	4.3			6480 5661

CentraLock®* II Components



Attachment Art. Code 6480 5660	Material	Art. Code
Matrix, Titanium (incl. Art. Code 1050 + 1051)		6480 1048
Patrx, Pt-Ir		6480 1049
Screw, Titanium		6480 1050
Plastic insert		6480 1051
Plastic insert, strong friction		6480 1116



Attachment Art. Code 6480 5661	Material	Art. Code
Matrix, Titanium (incl. Art. Code 1050 + 1051)		6480 1048
Screw, Titanium		6480 1050
Plastic insert		6480 1051
Patrx, plastic		6480 1115
Plastic insert, strong friction		6480 1116



Instruments and accessories	Art. Code
Patrx aid	6480 1109
Paralleling mandrel	6480 5641
Adhesive Aid	6480 5667
Screwdriver	6480 8996

Legend



cast on



solderable



bondable



alloy number

EXTRACORONAL ATTACHMENTS

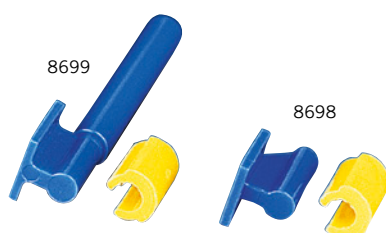
Preci-Vertex, Preci-Vertex P

Plastic omega attachments

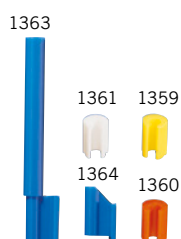
The Preci-Vertex (Art. Code 8699) and Preci-Vertex P (Art. Code 8698) are plastic omega attachments for retaining removable CrCo dentures.

Features:

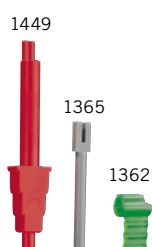
- Three different plastic matrices for different degrees of friction and for minimising wear and tear.



Scale 1 : 1	Appendix Angula- tion	Dimensions		Material Matrix Secondary	Delivery form	Art. Code
	45°	height mm	width mm	41	6 pcs.	6480 8698
	90°	5.0	3.3	41	6 pcs.	6480 8699



Components	Material	Art. Code
Matrix – slight friction	41	6480 1361
Matrix – central friction	41	6480 1359
Matrix – strong friction	41	6480 1360
Patrx 90°	42	6480 1363
Patrx 45°	42	6480 1364



Instruments and accessories	Art. Code
Matrix housing (for casting purposes, to solder or to bond the matrix or attach it in plastic)	6480 1362
Paralleling mandrel (is contained in set Art. Code 8698)	6480 1365
Inserting anchor (enclosed in both sets)	6480 1449








EXTRACORONAL ATTACHMENTS

AcryLock®*

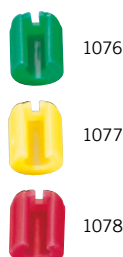


The AcryLock is a plastic omega attachment that can be connected to a dual groove bracing unit. The non residual burnout patrix is 0.04 mm to ensure the correct dimensions for the plastic matrix after preparing and polishing. The matrices are available in three different sizes for setting different withdrawal forces.

The new matrix design with a retention point ensures that the friction inserts are easily replaced without time consuming shortening and fitting. Only alloys with a 0.2 % yield strength over 500 MPa should be used to ensure stability.

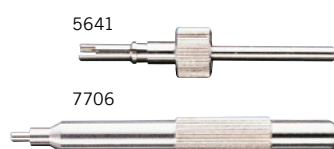
Scale 1:1	Dimensions		Material Matrix Secondary	Material Patrix Primary	Delivery form		Art. Code
	length mm	width mm			10 pcs.	6 pcs.	
	4.25	3.30			Bracing unit, patrix, matrix green	Matrix yellow and red	6480 7702
	4.25	3.30			Patrix, matrix green		6480 7703
	4.25	3.30			Bracing unit, patrix, matrix green		6480 7704

AcryLock®* – Components



Description	Delivery form/pcs	Material	Art. Code
Attachment Art. Code 6480 7702 6480 7703 6480 7704			
Matrix green, normal friction	6		6480 1076
Matrix yellow, central friction	6		6480 1077
Matrix red, strong friction	6		6480 1078

Instruments







Description	Art. Code
Starter kit (contains polymerisation anchor):	6480 7707
Paralleling mandrel	6480 5641
Inserting pin	6480 7706

EXTRACORONAL ATTACHMENTS

Sleeves for special attachments – precious metal Sleeves for removable partial dentures

The slotted sleeve (matrix) made from a Au-Ag base alloy can be activated as required.



Scale 1 : 1	Dimensions mm	Material	Art. Code zu 8079
	2.0 Sleeve		6480 8082
	3.0 Sleeve		6480 8078

Instruments	Art. Code
Paralleling mandrel for Patrix 2.0 mm	6480 5641

COMPOSITE ADHESIVES

Attachment bond

Bonding composite adhesive



Attachment bond is a strong, dual hardening composite for bonding pre-formed and custom fabricated attachments. Attachment bond has numerous advantages for the dental technician, e.g. much less time required than soldering, less material required, a simple technique and a passive connection, even in areas inaccessible to light.

- Dual curing (self curing and light curing)
- Colour change from bright yellow to transparent during curing

Areas of application:

- For Bonding of:
 - Secondary units
 - Tapered crowns
 - Telescope crowns
 - Individual attachment components
- Prefabricated attachments
 - Primary and secondary units
- Implants
 - Implant super structures

Delivery form	Art. Code
2 x 3g syringe	6470 7648

Durobond®* – adhesive bonder



is a practical addition to the existing techniques for connecting prefabricated secondary units with a removable restoration. The new composite formula guarantees an extensive range of applications and easy handling. Durobond is self curing. The integrated photoinitiators also allow the option of light curing.

- Dual curing
- Lower viscosity

Area of application:

Composite for bonding prefabricated attachment components in the removable section of a fixed/removable restoration.

Delivery form	Art. Code
Durobond 2.5g each of base and catalyst paste in syringes.	6480 1600
Colour coding: catalyst: red; base paste: white; 1 mixing pad; 1 spatula	

BARS

Bar attachments



The bar attachment is suitable for use as an activating connector for partial dentures. The bars are made of a Au-Ag base alloy. The bar is a rigid connector soldered to root caps, crowns or bridges. The bar rider is available with or without retention (for acrylic).

Scale 1:1	Bar Dimensions			Material Patrx Primary	Mould	Art. Code
	width mm	height mm	length mm			
	1.6	2.3	50		Micro	6480 8702
	2.2	3.0	50		Norm	6480 8704

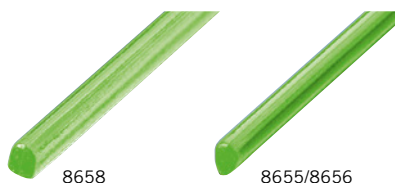
Resilient bars



The resilient bar is a connector that allows transversal and rotary movement of partial dentures. The bar rider can be activated. The bar (oval shaped cross-section) is a rigid connector soldered to root caps, crowns or bridges. The bar rider can be supplied with or without retention for acrylic.

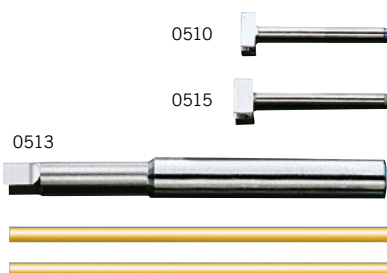
Scale 1:1	Bar Dimensions			Material Patrx Primary	Mould	Art. Code
	width mm	height mm	length mm			
	1.6	2.3	50		Micro	6480 8732
	2.2	3.1	50		Norm	6480 8734

Plastic resilient bar/attachment



The patrx of the plastic resilient bar can be cast in any type of dental alloy by waxing it onto the wax crowns. This eliminates time consuming furnace soldering after firing the porcelain onto bonding alloys.

Scale 1:1	Form	Dimensions		Material Patrx Primary	Delivery form pcs	Art. Code
		height mm	length mm			
	Joint	2.2	80.0		10	6480 8655
	Joint	3.2	80.0		10	6480 8656
	Attachment	3.0	80.0		10	6480 8658

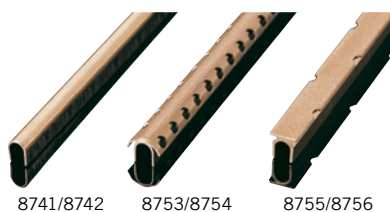


Instruments	Art. Code
Paralleling mandrel for the micro bar	6480 0510
Paralleling mandrel for the norm bar	6480 0515
Activator for bar ride	6480 0513
Bar spacer, brass for micro bar	6480 8738
Bar spacer, brass for norm bar	6480 8739

FRAMEWORK MATERIALS

SLEEVES FOR BARS

Bar riders for bar attachments and resilient bar



Scale 1:1	Retention	Dimensions length mm	Material Matrix Secondary	Mould	Art. Code
	without	50		Micro	6480 8741
	without	50		Norm	6480 8742
	with	50		Micro	6480 8753
	with	50		Norm	6480 8754
	milled	50		Micro	6480 8755
	milled	50		Norm	6480 8756

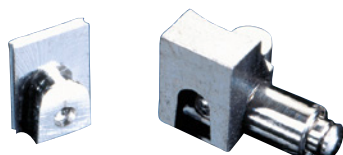


Instruments	Art. Code
Paralleling mandrel for micro bar	6480 0510
Paralleling mandrel for norm bar	6480 0515
Activator	6480 0513

LOCK ATTACHMENTS

RoboLock®*

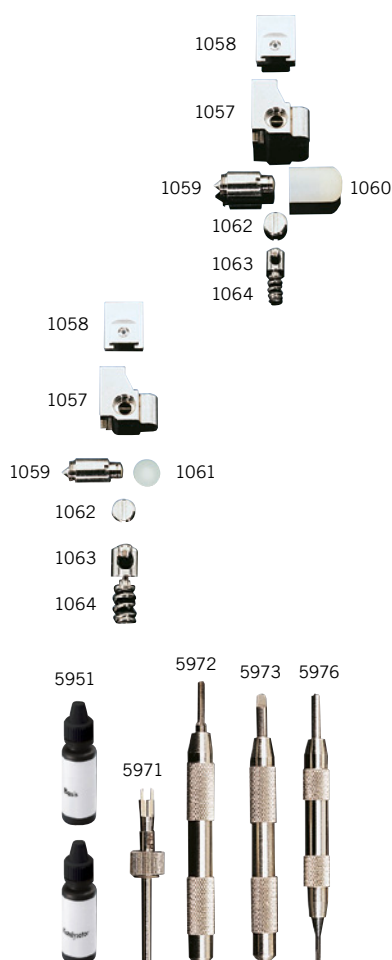
Automatic lock attachment



The RoboLock lock attachment is a rigid retainer that is used for unilateral free end partial dentures. It is also indicated for bilateral free end and bounded saddle partial dentures as well as removable bridges. It is designed for use in all 4 quadrants. This is possible due to the multifunctional use of the lock guide sleeve, which can be screwed into the matrix either lingually or buccally. The non functional thread is sealed with a closure screw.

Scale 1:1	Dimensions Total height mm	width mm	width of the matrix with press fit latch mm	Material Matrix Secondary	Material Patrx Primary	Art. Code
	5.5, can be reduced to 3.0mm	3.5	6.9			6480 5960 (large plastic cap)
	5.5, can be reduced to 3.0mm	3.5	6.9			6480 5959 (small plastic cap)

RoboLock®* Components



Attachment Art. Code 6480 5960	Material	Art. Code
Matrix, Pd-Ag base (Alba O) complete		6480 1057
Patrx, Pt-Ir		6480 1058
Press-fit-latch, Pd-Ag base (Alba O) plastic 1.4510		6480 1059
Threaded cap		6480 1060
Closing screw, Pd-Ag base (Alba O)		6480 1062
Plunger, Pd-Ag base (Alba O)		6480 1063
Spring, stainless steel		6480 1064

Attachment Art. Code 6480 5959	Material	Art. Code
Matrix, Pd-Ag base (Alba O) complete		6480 1057
Patrx, Pt-Ir		6480 1058
Press-fit-latch, Pd-Ag base (Alba O) Kst. 1.4510		6480 1059
Plastic cap, small		6480 1061
Closing screw, Pd-Ag base (Alba O)		6480 1062
Plunger, Pd-Ag base (Alba O)		6480 1063
Spring, stainless steel		6480 1064

Instruments	Art. Code
Preparation set contains: 5951/5971/5973/5976	6480 5970
Attachment adhesive	6480 5951
Paralleling mandrel	6480 5971
Thread tap	6480 5972
Bolt retention instrument	6480 5973
Lock changing instrument	6480 5976

SWIVEL TYPE LOCKS

Kulzer swivel type lock set designed by Claas Hinrichs

Prefabricated swivel type lock components

The Kulzer swivel type lock set designed by Claas Hinrichs is a prefabricated set of swivel type lock components for quick, easy fabrication of lock restorations using prefabricated components.

Kulzer swivel type lock set, single

contains: 1 Lock anchor, 1 plastic bar, 1 prefabricated lock plate



8841/8842/8843



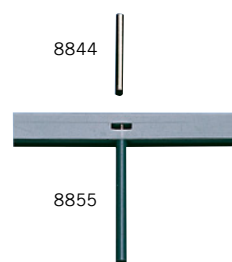
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



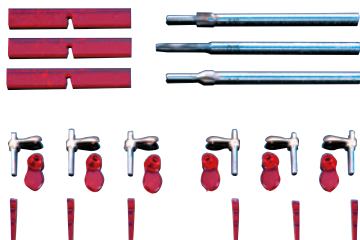
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Scale 1:1	Dimen- sions height mm	Mould	Length lock plate mm	Length Axle dimen- sions length/Ø	Material	Art. Code
	1.2	small	10.5	15 mm/ 1.5 mm		6480 8841
	1.2	medium	13.0	15 mm/ 1.5 mm		6480 8842
	1.2	large	15.6	15 mm/ 1.5 mm		6480 8843

Kulzer swivel type lock components

Components	Material	Art. Code
Swivel type lock plate, small, Bio Maingold SG		6480 8846
Swivel type lock plate, medium, Bio Maingold SG		6480 8847
Swivel type lock plate, large, Bio Maingold SG		6480 8848
Lock anchor, Bio Maingold SG	 	6480 8844
Plastic bar		6480 8855
Bar, plastic	 	
Activation anchor, HFA (Heraplat)		
Ø 0.6 mm, length 3 mm		



TURN TYPE LOCK

Kulzer turn type lock set

For easy manufacturing of latch restorations

The Kulzer turn type lock set facilitates fabrication of turn type lock restorations using prefabricated components. The turn type lock is a passive retention and lock attachment that provides a frictionless connection between the fixed restoration unit and removable unit.

Set	Material	Art. Code
Kulzer turn type lock set, contains		6480 8860
1 Latch anchor drill, cylindrical		6480 8965
1 Latch anchor drill, conical		6480 8966
1 Reamer		6480 8967
3 Prefabricated latches, right function		
Latch plate	16	6480 8861
Pin	1	
3 Prefabricated latches, left function		
Latch plate	16	6480 8862
Pin	1	
3 Plastic bars*		6480 1382
3 Plastic arm rests, right*		6480 1282
6 Plastic latch pins*		6480 1383
3 Plastic supports, left*		6480 1384

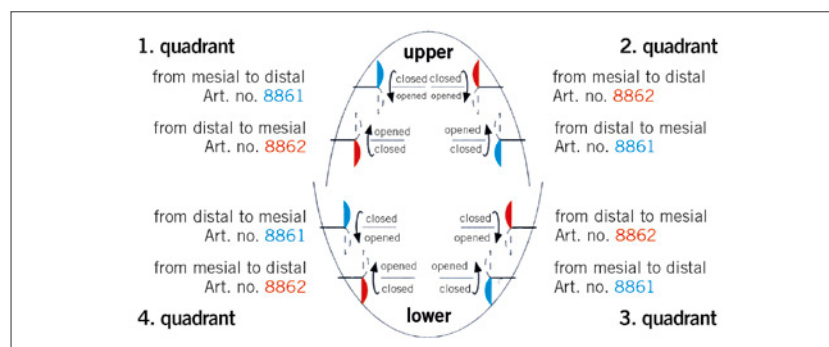
*All plastic components burn out without residue



8861/8862

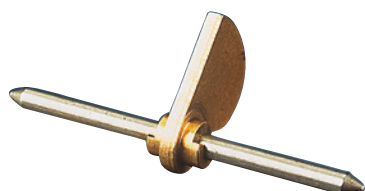
Scale 1:1	Mould	Axis dimensions length/Ø	Material Axis	Material Page	Art. Code
	right top left down	10 mm/ 1.5 mm	1	16	6480 8861
	left top right down	10 mm/ 1.5 mm	1	16	6480 8862

Numerical schematic diagram of latch classification



LATCHES

Suraschek latch accessory



This accessory is a space maintainer for the latch arm, latch pin, latch point and stop recess. It ensures the latch pin and latch arm are at right angles to produce a perfectly functioning latch.

Space maintainer during fabrication of the latch	Axis-Ø mm	Material Blade	Art. Code
Latch accessory	1.5	32/43	6480 8960



- 1 Accessory
- 2 Waxed up primary crown with pin recess
- 3 Aid placed on the primary crown
- 4 Finished, waxed up secondary crown

8965 

8966 

8967 

Instrument	Axis-Ø mm	Art. Code
Latch pin drill, cylindrical	1.5	6480 8965
Latch pin drill, conical	1.5	6480 8966
Reamer	1.5	6480 8967

Legend



cast on



solderable



bondable

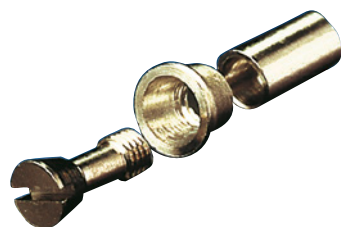


alloy number

RETAINERS

PontiLock®*

Screw system









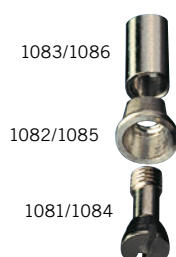
The PontiLock is a screw unit indicated for sectioned bridges, divergent abutments, retention of operator removable restorations as well as retention of implant superstructures. The sleeve and countersunk ring are made from a Pt-Ir alloy. It can be cast on with precious and non precious metal alloys due to its high melting range.




Positioning anchors are supplied.

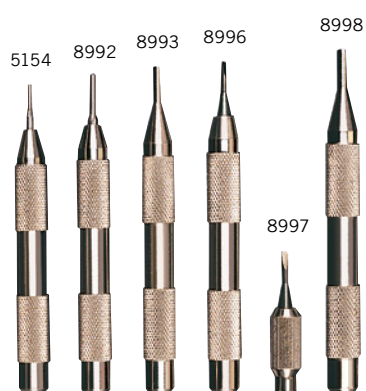
Areas of application:

- Retention of operator removable restorations
- Fabrication of bridges on non parallel abutments
- Retention of implant superstructures
- Cast on sleeve and countersunk ring

Scale 1 : 1	Total length	Thread diameter	Exterior diameter	Material Sleeve	Material Countersunk collar	Art. Code
	mm	mm	mm	Primary	Secondary	
	5.0	1.4	2.0			6480 8990
	3.5	1.0	1.6			6480 8991



Components for	Material	Art. Code 6480 8990	Art. Code 6480 8991
Housing, (Pt-Ir)		6480 1083	6480 1086
Countersunk collar, (Pt-Ir)		6480 1082	6480 1085
Screw, Pd-Ag base (Alba O)		6480 1081	6480 1084

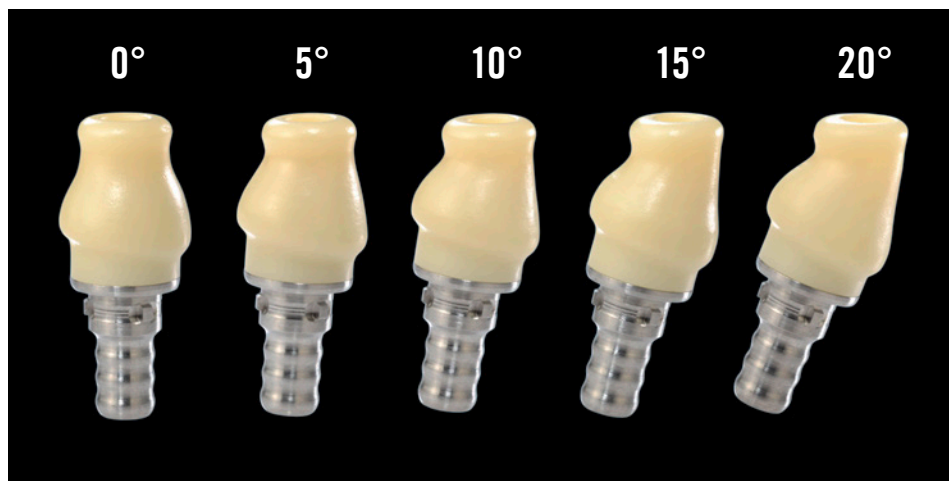


Instruments	Art. Code
Thread tap for sleeve of Art. Code 8990	6480 5154
Thread tap for sleeve of Art. Code 8991	6480 8992
Extractor instrument for Art. Code 8991	6480 8993
Laboratory screwdriver	6480 8996
Practice screwdriver	6480 8997
Extractor instrument for Art. Code 8990	6480 8998

7 CARA® FRAMEWORK MATERIALS

7.3 PRECISION ATTACHMENTS

CARA YANTALOC® CONNECTING ELEMENT



Users can order cara YantaLoc in five different angulations up to 20°.

Providing a secure bond and minimizing the risk of periimplantitis: cara YanataLoc can do both! A combination of a screw-retained titanium base with an angled zirconium oxide attachment element, acting as a connector, allows patients to fix removable dentures safely and flexibly onto implants. Thanks to the capability to angulate up to 20° and the slim construction, even difficult implant positions and complex cases can be handled. Zirconium oxide also offers the benefit of good soft tissue integration and low plaque deposits.



Comparison of the size of cara YantaLoc and cara YantaLoc LV:
The Low Version allows the height to be significantly reduced to a minimum of only 4.00 mm and a gingival margin of 1–2 mm instead of the previous 7.19 mm and 1–3 mm.



Bonding of the zirconia retainer on a titanium base and subsequent screw connection in the practice.

CARA YANTALOC® RETENTION ELEMENTS

cara YantaLoc®: both sides in top form.

Provide a stable grip and minimise the risk of periimplantitis: cara YantaLoc can do both! The patent-pending connection comprising a screw-retained titanium base and an angled zirconia structure with an attachment function allows users to fix removable dental prostheses to implants safely and flexibly. Thanks to the different possible angulations from straight to 20° and the slim construction, even difficult implant positions can be easily adjusted. Zirconia is a substance that offers good integration with the soft tissues and low plaque deposition. cara YantaLoc is available in two heights: a standard version with a height of 6.5 – 7.2 depending on the angle and a low version with a height of 4.0–5.4 mm.

cara YantaLoc Low Version retention elements



Product Name	Article No.
cara YantaLoc ZrO ₂ LV Reg. H4.0	6606 5913
cara YantaLoc ZrO ₂ LV A5° H4.2	6606 5915
cara YantaLoc ZrO ₂ LV A10° H4.7	6606 5916
cara YantaLoc ZrO ₂ LV A15° H5.0	6606 5918
cara YantaLoc ZrO ₂ LV A20° H5.4	6606 5920

cara YantaLoc regular retention elements



Product Name	Article No.
cara YantaLoc ZrO ₂ Reg H6.5	6606 0661
cara YantaLoc ZrO ₂ A5° H7.0	6606 0662
cara YantaLoc ZrO ₂ A10° H6.5	6606 0663
cara YantaLoc ZrO ₂ A15° H7.0	6606 0664
cara YantaLoc ZrO ₂ A20° H7.2	6606 0665

i cara YantaLoc retention elements are compatible only with the cara YantaLoc Ti base.

CARA YANTALOC® TITANIUM BASES

cara YantaLoc LV titanium base			
Implant manufacturer	Product Name	Height	Article No.
Biomet 3i	cara YantaLoc Ti-Base LV 3i Osseo Cert 3.4	LV	6606 5379
	cara YantaLoc Ti-Base LV 3i Osseo Cert 4.1	LV	6606 5380
	cara YantaLoc Ti-Base LV 3i Osseo Cert 5.0	LV	6606 5391
	cara YantaLoc Ti-Base LV 3i Osseo Exh 4.1	LV	6606 5392
	cara YantaLoc Ti-Base LV 3i Osseo Exh 5.0	LV	6606 5393
Camlog	cara YantaLoc Ti-Base LV Camlog 3.3	LV	6606 5349
	cara YantaLoc Ti-Base LV Camlog 3.8	LV	6606 5350
	cara YantaLoc Ti-Base LV Camlog 4.3	LV	6606 5351
	cara YantaLoc Ti-Base LV Camlog 5.0	LV	6606 5352
	cara YantaLoc Ti-Base LV Camlog 6.0	LV	6606 5371
	cara YantaLoc Ti-Base LV Conelog 3.3	LV	6606 5372
	cara YantaLoc Ti-Base LV Conelog 3.8	LV	6606 5373
	cara YantaLoc Ti-Base LV Conelog 5.0	LV	6606 5374
Dentsply Implants	cara YantaLoc Ti-Base LV Astra 3.5/4.0	LV	6606 5405
	cara YantaLoc Ti-Base LV Astra 4.5	LV	6606 5406
	cara YantaLoc Ti-Base LV Astra EV 3.0	LV	6606 5407
	cara YantaLoc Ti-Base LV Astra EV 3.6	LV	6606 5367
	cara YantaLoc Ti-Base LV Astra EV 4.2	LV	6606 5368
	cara YantaLoc Ti-Base LV Astra EV 4.8	LV	6606 5369
	cara YantaLoc Ti-Base LV Astra EV 5.4	LV	6606 5370
	cara YantaLoc Ti-Base LV Dents. Xive 3.4	LV	6606 5411
	cara YantaLoc Ti-Base LV Dents. Xive 3.8	LV	6606 5412
	cara YantaLoc Ti-Base LV Dents. Xive 4.5	LV	6606 5413
Medentis	cara YantaLoc Ti-Base LV Medentis ICX 3.45–4.8	LV	6606 5394
NEOSS	cara YantaLoc Ti-Base LV Neoss 4.0	LV	6606 5402
Nobel Biocare	cara YantaLoc Ti-Base LV Nobel Repl. NP	LV	6606 5375
	cara YantaLoc Ti-Base LV Nobel Repl. RP	LV	6606 5376
	cara YantaLoc Ti-Base LV Nobel Repl. WP	LV	6606 5382
	cara YantaLoc Ti-Base LV Nobel Act. NP4.3	LV	6606 5377
	cara YantaLoc Ti-Base LV Nobel Act. NP3.5	LV	6606 5378
	cara YantaLoc Ti-Base LV Branem. Sys. NP	LV	6606 5395
	cara YantaLoc Ti-Base LV Branem. Sys. RP	LV	6606 5396
Straumann	cara YantaLoc Ti-Base LV Str BL NC 3.3	LV	6606 5397
	cara YantaLoc Ti-Base LV Str BL RC 4.1/4.8	LV	6606 5398
	cara YantaLoc Ti-Base LV Str SynOct NNC 3.5	LV	6606 5399
	cara YantaLoc Ti-Base LV Str SynOct RN4.8	LV	6606 5400
Thommen	cara YantaLoc Ti-Base LV Thommen 3.5	LV	6606 5414
	cara YantaLoc Ti-Base LV Thommen 4.0	LV	6606 5415
	cara YantaLoc Ti-Base LV Thommen 4.5	LV	6606 5416
	cara YantaLoc Ti-Base LV Thommen 5.0	LV	6606 5417
Zimmer	cara YantaLoc Ti-Base LV Zimmer Tap. 3.5	LV	6606 5403
	cara YantaLoc Ti-Base LV Zimmer Tap. 4.5	LV	6606 5404

i cara YantaLoc Low Version is supplied with a uniform screw. The screw is designed for a T6 thread. Only one screwdriver is required for all implant systems. For article numbers 3990 1861 or 3990 1862.

cara YantaLoc titanium base

Implant manufacturer	Product Name	Height	Article No.
Bio Horizon	cara YantaLoc Ti-base BioH Int 4.5	–	6606 3416
Biomet 3i	cara YantaLoc Ti-base 3i Osseo Cert 3.4	–	6606 0214
	cara YantaLoc Ti-base 3i Osseo ExH 3.4	–	6606 0215
Camlog	cara YantaLoc Ti-base Camlog 3.8	–	6606 0216
	cara YantaLoc Ti-base Camlog 4.3	–	6606 0217
	cara YantaLoc Ti-base Conelog 3.3	–	6606 0227
	cara YantaLoc Ti-base Conelog 3.8	–	6606 0228
Dentsply Implants	cara YantaLoc Ti-base Astra 3.5/4.0	–	6606 0212
	cara YantaLoc Ti-base Astra 4.5	–	6606 0266
	cara YantaLoc Ti-base Dentsply Xive 3.8	–	6606 0218
NEOSS	cara YantaLoc Ti-base Neoss 3.5	–	6606 0273
	cara YantaLoc Ti-base Neoss 4.0	–	6606 0274
Nobel Biocare	cara YantaLoc Ti-base Nobel Active NP3.5	–	6606 0219
	cara YantaLoc Ti-base Nobel Active NP4.3	–	6606 0220
	cara YantaLoc Ti-base Nobel Replace NP	–	6606 0261
	cara YantaLoc Ti-base Nobel Replace RP	–	6606 0262
	cara YantaLoc Ti-base BMKSys NP	–	6606 0271
	cara YantaLoc Ti-base BMKSys RP	–	6606 0272
Straumann	cara YantaLoc Ti-base Str BL NC 3.3	–	6606 0263
	cara YantaLoc Ti-base Str BL RC 4.1/4.8	–	6606 0264
	cara YantaLoc Ti-base Str SynOct RN 4.8	–	6606 0265
Thommen	cara YantaLoc Ti-base Thommen 4.5	–	6606 3417

Important: Please use a tightening instrument with an instrument shaft of 1.8 mm or less and a minimum shaft length of 8.3 mm.

Accessories

Product Name	Article No.
cara Angulation Guide 0–20°	3991 0021

i cara YantaLoc is compatible with the Zest® and Novaloc® matrices.

RETAINERS

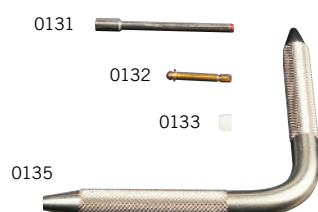
Sfera ball and socket anchor**Resilient attachment for all types of denture**

The Sfera ball and socket anchor is a resilient attachment for all types of dentures: it is rigid horizontally but allows free vertical and rotary movements. The tin washer supplied is used as a spacer between the patrix and matrix during fabrication. After the denture is finished and the tin washer removed, there is adequate space for the required resilient movement.

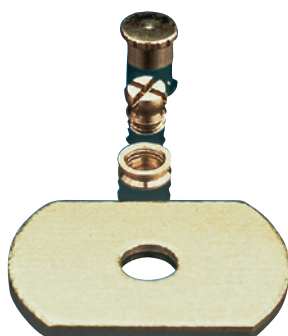


Scale 1:1	Dimensions height incl. spacer disc mm	Ball Ø mm	Matrix Ø mm	Material Matrix	Material Patrix	Art. Code
				Secondary	Primary	
	3.6	2.25	3.0			6480 0121
	3.6	2.25	3.0			6480 0122
	3.6	2.25	3.0			6480 0125

Components	Material	Art. Code
Matrix, Au-Ag base (for Art. Code 0121/0122/0125)		6480 1454
Patrix, Plastic (for Art. Code 0121)		6480 1456
Patrix, Au-Ag base (for Art. Code 0125)		6480 1455
Patrix, HSL (for Art. Code 0122)		6480 1483



Instruments	Art. Code
Paralleling mandrel	6480 0131
Model anchor	6480 0132
Space maintainer	6480 0133
PVC assembly aid	6480 0134
Activator	6480 0135
Soldering aid	6480 0136
Extractor	6480 0137








RETAINERS

Root cap anchor

Resilient anchor for overdentures

The root cap anchor is an activating, resilient anchor. Its design makes it ideal for overdentures. The withdrawal force of the denture can be adjusted by activating the anchor. The root cap anchor consists of a cast-on threaded cap (HFA), a removable anchor (Alba O) and an Alba O matrix.

Scale 1:1	Dimensions		Matrix Ø mm	Material		Patric	Matrix	Delivery form	Art. Code
	height mm	Thickness of assembly washer mm		Threaded cap Primary/ Secondary					
	3.6	0.5	3.2					2	6480 7600

5972



7451



7605



7607






7608



Instruments	Art. Code
Thread tap for the threaded cap	6480 5972
Activation instrument for the patric	6480 7451
Paralleling mandrel for the threaded cap	6480 7605
Exchange instrument for the patric	6480 7607
Deactivation instrument for the patric	6480 7608



Components	Material	Art. Code
Matrix, Pd-Ag base (Alba O)		6480 1068
Patric Pd-Ag base (Alba O)		6480 1069
Threaded cap, HFA (Heraplat)		6480 1070

SECURALOCK®*

The SecuraLock is an accessory for restoring retention in telescope or conical crowns that have lost friction. It consists of a titanium housing and a sapphire sphere, which is supported on a spring. It is important that it is only used on crowns with adequate wall thickness.



Scale 1:1	Dimensions		Material	Delivery form	Art. Code
	height mm	Ø mm			
	3.2	2.2		2	6480 5700

ANCHOR SYSTEM

Anchor attachment

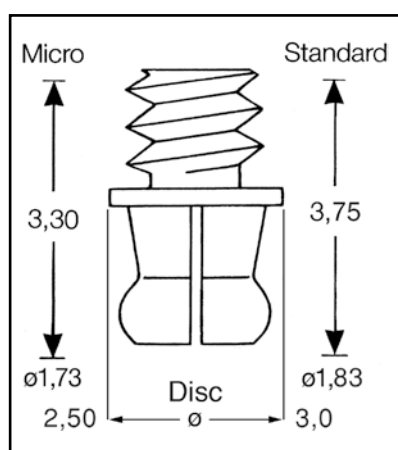
The anchor attachment is an activating, rigid precision attachment and support unit with excellent stress breaking function.



Description	Art. Code
Anchor attachment	6480 6000

Components Scale 1 : 1	Description	Height in mm	Material	Art. Code
	Patric	5.0	[11]	6480 1066
	Anchor	3.30	[11]	6480 0601
	Plastic matrix with Pt-Ir eyelet	6.5	[2]	6480 1065

Instruments	Art. Code
Paralleling mandrel	6480 6461



The anchor system is based on the press button principle and is a proven attachment for all applications in removable partial denture prosthetics. It consists of precision manufactured components. The high grade precious metal alloys used guarantee a long service life.

Indication

Free end and bounded saddle partial dentures, fixed/removable dentures and removable bridges. Our Norm anchor attachment is available for normal occlusal relationships and the Micro Vario system is used for extreme occlusal relationships. The Norm and Micro anchor attachments are supplied in different versions. In particular the following differences should be noted when processing:

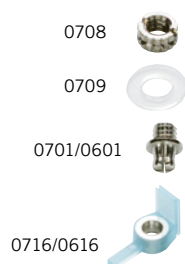
- Plastic bars that can be invested with the wax pattern of the adjacent crowns
- The Vario system
- Cast on Pt-Ir threaded caps for precious and non precious metal alloys
- Screw rings for easy processing without soldering
- Threaded rings for retention in acrylic

ANCHOR SYSTEM

Vario matrix combinations

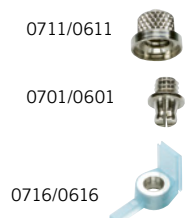
The matrices (platinum-iridium) can be cast on using precious metal, palladium based and non precious metal alloys.

Combination with retention nuts (Pd-Ag base alloy) for solder free screw retention



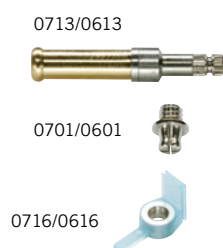
	Art. Code Norm	Art. Code Micro
The complete combination contains: 2 matrices (Pt-Ir), 2 matrices (Pd-Ag), 2 anchors (Pd-Ag base) 2 retention nuts (Pd-Ag base), 2 plastic washers	6480 7501	6480 6501
Matrix (Pt-Ir)	6480 0716	6480 0616
Anchor (Pd-Ag base)	6480 0701	6480 0601
Retention nuts (Pd-Ag base)	6480 0708	6480 0708
Plastic washers	6480 0709	6480 0709

Combination with retention nuts (Pd-Ag base alloy) for solder-free screw retention



	Art. Code Norm	Art. Code Micro
The complete combination contains: 2 matrices (Pt-Ir), 2 matrices (Pd-Ag), 2 threaded caps Pd-Ag	6480 7503	6480 6503
Matrix (Pt-Ir)	6480 0716	6480 0616
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded cap (Pd-Ag base)	6480 0711	6480 0611

Combination cast on threaded caps with duplicating aids



	Art. Code Norm	Art. Code Micro
The complete combination contains: 2 matrices (Pt-Ir), 2 matrices (Pd-Ag), 2 threaded caps (Pt-Ir), complete with duplicating aids	6480 7504	6480 6504
Matrix (Pt-Ir)	6480 0716	6480 0616
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded cap (Pt-Ir), complete with duplicating aids	6480 0713	6480 0613

ANCHOR SYSTEM

Double bar combination (Pt-Ir matrix)

Combination with retention nuts (Pd-Ag base alloy)
for solder free screw retention

	Art. Code Norm	Art. Code Micro
The complete combination contains: 1 combi-bar with 2 integrated matrices (Pt-Ir), 2 patrices (Pd-Ag base), 2 retention nuts (Pd-Ag), 2 plastic washers	6480 7521	6480 6521
Combi bar with 2 integrated matrices (Pt-Ir)	6480 0717	6480 0617
Anchor (Pd-Ag base)	6480 0701	6480 0601
Retention nuts (Pd-Ag base)	6480 0708	6480 0708
Plastic washer	6480 0709	6480 0709

Combination with threaded caps for soldering



	Art. Code Norm	Art. Code Micro
The complete combination contains: 1 combi-bar with 2 integrated matrices (Pt-Ir), 2 patrices (Pd-Ag base), 2 threaded caps (Pd-Ag base)	6480 7523	6480 6523
Combi bar with 2 integrated matrices (Pt-Ir)	6480 0717	6480 0617
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded cap (Pd-Ag base)	6480 0711	6480 0611

Combination with cast on threaded caps with duplicating aids



	Art. Code Norm	Art. Code Micro
The complete combination contains: 1 combi-bar with 2 integrated matrices (Pt-Ir), 2 patrices (Pd-Ag base), 2 threaded caps (Pt-Ir), complete with duplicating aids	6480 7524	6480 6524
Combi bar with 2 integrated matrices (Pt-Ir)	6480 0717	6480 0617
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded caps (Pt-Ir), complete with duplicating aids	6480 0713	6480 0613

ANCHOR SYSTEM

Vario matrix combinations (HFA-Matrix)

The matrices (HFA) can only cast on with precious metal alloys.

Combination with threaded caps for soldering



	Art. Code Norm	Art. Code Micro
The complete combination contains: 2 matrices (HFA), 2 patrices (Pd-Ag base), 2 threaded caps (Pd-Ag base)	6480 7513	6480 6513
Matrix (HFA)	6480 0715	6480 0615
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded cap (Pd-Ag base)	6480 0711	6480 0611

Double bar combination (HFA-Matrix)

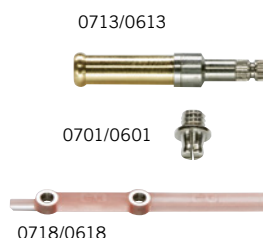
The HFA matrices can only be cast on with precious metal alloys.
The plastic housing used as a casting aid can be burned out without residue.

Combination with threaded caps for soldering



	Art. Code Norm	Art. Code Micro
The complete combination contains: 1 combi-bar with 2 integrated HFA matrices, 2 patrices (Pd-Ag base), 2 threaded caps (Pd-Ag base)	6480 7533	6480 6533
Combi bar with 2 integrated HFA matrices	6480 0718	6480 0618
Anchor (Pd-Ag base)	6480 0701	6480 0601
Threaded cap (Pd-Ag base)	6480 0711	6480 0611

Combination with cast on threaded caps with duplicating aids



























	Art. Code Norm
The complete combination contains: 1 combi-bar with 2 integrated HFA matrices, 2 anchor (Pd-Ag base), 2 threaded caps (Pt-Ir), complete with duplicating aids	6480 7534
Combi bar with 2 integrated HFA matrices	6480 0718
Anchor (Pd-Ag base)	6480 0701
Threaded caps (Pt-Ir), complete with duplicating aids	6480 0713

FRAMEWORK MATERIALS





ANCHOR SYSTEM



Components

	Material	Art. Code Norm	Art. Code Mikro
Anchor (Pd-Ag base), exchangeable, activating			
		6480 0701	6480 0601
Anchor (Pd-Ag base), exchangeable, activating			
		6480 0702	6480 0602
Retention nut (Pd-Ag base)			
		6480 0708	6480 0708
Plastic washer for use with retention caps			
		6480 0709	6480 0709
Retention cap			
		6480 0710	6480 0610
Threaded cap (Pd-Ag base), solderable			
		6480 0711	6480 0611

	Material	Art. Code Norm	Art. Code Mikro
Threaded cap (Pt-Ir), cast on with precious metal, Pd based and non precious metal alloys			
		6480 0712	6480 0612
Threaded cap (Pt-Ir), cast on with precious metal, Pd based and non precious metal alloys			
		6480 0713	6480 0613
Matrix with back plate, HFA, cast on with precious metal alloys			
		6480 0715	6480 0615
Matrix with back plate (Pt-Ir), cast on with precious metal, Pd-based and non precious metal alloys			
		6480 0716	6480 0616
Combi bar with 2 integrated matrices (Pt-Ir), cast on with precious metal, Pd-based and non precious metal alloys			
		6480 0717	6480 0617
Combi bar with 2 integrated matrices, Heraplat (HFA) cast on with precious metal alloys			
		6480 0718	6480 0618










Anchors in special sizes

	Material	Art. Code Norm	Art. Code Mikro
Anchor with dimensions, anchor-Ø -N- 1.86 mm /-M- 1.76 mm			
		6480 0703	6480 0603
Anchor with dimensions, anchor-Ø -N- 1.8 mm /Base Ø 3.0 mm Functional dimensions anchor base 2.3 mm			
		6480 0705	–

	Material	Art. Code Norm	Art. Code Mikro
Anchor with dimensions, anchor-Ø 1.93 mm			
		6480 0706	–

ANCHOR SYSTEM

Instruments, tools and accessories

	Art. Code
Tectusil threadlocking	
	6480 5951
Anchor activator	
	6480 7451
Anchor exchange instrument	
	6480 7452
Screwdriver for retention nuts	
	6480 7471
Tungsten carbide cutter, shank Ø 2.35 mm, Head Ø 3.0 mm	
	6480 7558
Retention screw for retaining solderable threaded caps -S- 0711 / -M- 0611, in the solder model	
	6480 7557
Anchor thread holder	
	6480 7481
Thread tap for retention caps	
	6480 7485
Anchor deactivator	
	6480 7456 6480 6456

	Art. Code Norm	Art. Code Micro
Paralleling mandrel for paralleling anchor matrices		
	6480 7461	6480 6461
Patrx analogue (stainless steel) for retaining solderable threaded caps -S- 0711 / -M- 0611		
	6480 7550	6480 6550
Patrx analogue (brass, no. 43) for try in and processing the denture		
	6480 7551	6480 6551
Patrx analogue (brass, no. 43) for duplication with retention nuts -S- 0707		
	6480 7552	–
Spacers (stainless steel, no. 32) for regulating the snap function point of anchors, 10 pcs.		
	6480 7553	6480 6553
Patrx analogue (brass, no. 43) for duplicating with cast-on threaded caps -S- 0713 / -M- 0613		
	6480 7554	6480 6554
Patrx analogue (brass, no. 43) for taking impressions and repairing damaged threaded caps		
	6480 7555	6480 6555
Matrix analogue (1.4401*) for retaining anchors in the stone model		
	6480 7556	6480 6556
Bonding/soldering aid for the anchor system (brass, no. 43)		
	6480 7559	6480 6559

Please note: * = contains Nickel

ROOT POSTS

Root posts, smooth, cast on for precious metal alloys

The root posts made from Heraplat are used for tooth build ups and are cast on. There is a choice of 3 different sizes, which all have the same angle of taper. The advantage of this is that only one root canal reamer is required for all versions when preparing.



Scale 1:1	Mould	Dimensions		Material Patix Primary	Art. Code
		Ø mm	length mm		
	small	1.5	12		6480 9760
	medium	1.6	15		6480 9770
	large	1.8	17		6480 9780





Instruments	Art. Code
Root canal reamer for all sizes	6480 9795

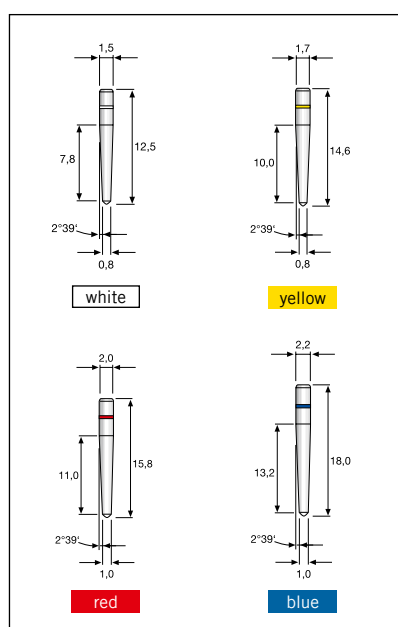
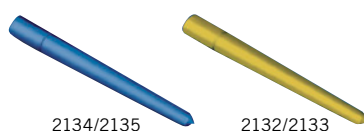
ROOT POSTS










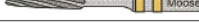

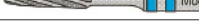
Mooser root posts titanium (transitional prosthesis)

Scale 1:1	Mould	Dimensions		Material	Art. Code
		Ø mm	length mm		
	Temp. post for white	1.5	12.5	35	6480 2021
	Temp. post for yellow	1.7	14.6	35	6480 2022
	Temp. post for red	2.0	15.8	35	6480 2023
	Temp. post for blue	2.2	18.0	35	6480 2024

Mooser plastic root posts

Scale 1:1	Mould	Material	Delivery form	Art. Code
	Adhesion head, contains sizes white and yellow	36	10 pcs	6480 2132
	Adhesion head, contains sizes white and yellow	36	50 pcs	6480 2133
	Adhesion head, contains sizes red and blue	36	10 pcs	6480 2134
	Adhesion head, contains sizes red and blue	36	50 pcs	6480 2135



Instruments	Art. Code
Reamer, white	 6480 2031
Reamer, yellow	 6480 2032
Reamer, red	 6480 2033
Reamer, blue	 6480 2034
Predrill, white	 6480 2041
Predrill, yellow	 6480 2042
Predrill, red	 6480 2043
Predrill, blue	 6480 2044
Drill, white	 6480 2051
Drill, yellow	 6480 2052
Drill, red	 6480 2053
Drill, blue	 6480 2054
Contra-angle extension	6480 2055
Handpiece for WS instruments	6480 2056









7 HERA® FRAMEWORK MATERIALS

7.3 PRECISION ATTACHMENTS

OTHERS

Facings



Mould	Dimensions mm	Material	Art. Code
Incisors			
medium, right	6 x 10		6480 9500/1
medium, left	6 x 10		6480 9510/1
Canines			
medium, upper right lower left	7 x 10		6480 9580/3 c
medium, upper left lower right	7 x 10		6480 9590/3 c
large, upper right lower left	7.5 x 12		6480 9600/3 d
large, upper left lower right	7.5 x 12		6480 9600/3 d
Premolars			
upper	6.5 x 11		6480 9620/4
lower	6.5 x 9		6480 9630/4


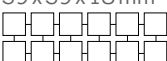
Membranetten

Packaging for porcelain inlays, dental restorations, models and attachments.

Packing boxes with elastic membranes

- guarantee safe packaging
- no risk of oxidation
- allow visual control



Scale 1:1	Mould	Dimensions mm W x D x H	Art. Code
	Membrane box for inlays and small units, pack of 12 pcs	39 x 39 x 18 mm 	6480 1901

* registered brand of ZL Microdent Attachment GmbH & Co.KG, Breckerfeld

Legend



cast on



solderable



bondable



alloy number

Electroforming

The Hera Preciano Systems, which comprises of electroforming equipment, gold solutions, and the necessary consumables, covers almost all electroforming indications is a well an effiecient and economic solution.

ELECTROFORMING UNITS AND ACCESSORIES

Preciano

Perfect electroforming in a new light

The advantages of restorations fabricated using the electroforming technique are obvious: maximum biocompatibility, precision and aesthetics. This has been confirmed by the success of our Preciano system. In response to the needs of our customers, we have developed a pioneering electroforming unit guaranteed to provide the optimum solution for any situation: **Preciano iQ**



iQ = increased flexibility

Preciano iQ – virtually two electroforming units in one: you have the choice of

- Standard electroforming
(4 – max. 6 hours)
- Express electroforming
(only 2 or 3 hours)

1–6 units can be fabricated per electroforming cycle, if required with an individually preset layer thickness. The unit integrates easily into the working routine of your laboratory.

iQ = increased reliability

Similar to how a turbocharger operates in a car, the Preciano iQ reactors greatly accelerate gold electroforming on the units.

A magnetic stirrer produces a high rotation speed in the gold solution. Specially shaped spoilers on the inside of the reactor wall induce fluid dynamics, which ensure an ideal flow and supply of gold to the units. This not only reduces the time required for electroforming but also improves the quality of the gold surfaces, which increases the reliability of the results.

iQ = increased efficiency

With optimal planning of the working procedures, the Preciano iQ can electroform up to 24 units with a layer thickness of 200 µm or 300 µm in one day using the Express mode!

The unit has an innovative heating unit for the solution so that it is quickly ready for operation again after the start of the process: an omega shaped infrared heating element ensures that the processing temperature is reached within 5–15 minutes depending on the quantity of solution!

The new Preciano iQ gold solution is tailored to both processing speeds. The solution can be used in quantities of 60 to 600ml. Only the quantity of gold solution required for the number and size of the units as well as the prescribed layer thickness should be used. Electroforming has never before been so quick and cost effective!

ELECTROFORMING UNITS AND ACCESSORIES

Preciano iQ

iQ = efficient recycling of the solution

The Preciano iQ allows you to recycle the residual gold from the old solution yourself. The reusable recycling electrodes ensure a high yield and that the material balance is always clear. We will reimburse you for recycled, high grade Preciano gold. If required, you can also return the used electroforming solution to us for disposal.

iQ = operator interface

The Preciano iQ is an intelligent electroforming unit that guides you through a self explanatory menu, displays each operating step and automatically calculates virtually all parameters. It communicates interactively with the operator and asks for all the information and procedures required or gives instructions for procedures to be carried out. Six different languages can be set in the display. This makes operation simple, quick and reliable. All settings are easily entered using a turn/push button. With the Preciano iQ chart you can determine the size of the unit based on practical examples. Effective separation of the reactor glass, plating and control unit ensures that all sections are easily accessible and visible.

The unit automatically carries out extensive safety checks before electroforming:

- Unit contact
- Strength of current during electroforming
- Heating system
- Temperature
- Mixing function

and makes adjustments automatically or via operator.

iQ = successful electroforming

Success is always measured by different factors. We have consistently focused on those that have emerged as being the most important: maximum reliability during processing and maximum flexibility. Maximum efficiency, which contributes to successful electroforming, is ensured if all the advantages are optimally coordinated. This in turn ensures maximum cost effectiveness.

Electroforming unit Preciano iQ incl.

- 1 Preciano iQ reactor S (for 1–2 units)
 - 1 Preciano iQ reactor M (for 6 units)
 - 1 Preciano iQ squirrel Set 40+60 mm
 - 2 Recycling electrodes
- Does not include consumables kit for the Preciano iQ or CL-GF

Art. Code **6600 9741**

Technical data	
Mains voltage	90 – 250 V*
Connection	1P/N/PE
Rated frequency	50/60 Hz
Rated current	1.8 A
Rated output	400 W
Preciano iQ reactor (max./application)	220 ml (Size S) 400 ml (Size M) 600 ml (Size L)
Solution temperature	55 °C ± 1°C
Stirrer	40/60 mm
Stirrer speed	380 – 670 U/min
Maximum ambient temperature	35 °C
Dimensions W×H×D in mm	400×220×310
Weight (empty)	14 kg
Language selection	German, English, French, Italian, Spanish, Dutch
Temperature regulation	electronic

* usage of suitable power cords (required)



ELECTROFORMING UNITS AND ACCESSORIES

Preciano iQ reactor

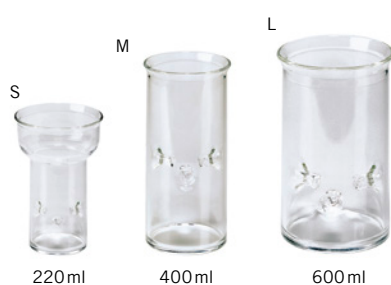
The deposition process occurs in what is called a reactor. The inner wall of this is configured in such a way that during the deposition a special flow dynamic is generated by the relatively fast rotary speed that optimises the deposition process itself. This does not only shorten the deposition time but also improves the quality of the deposited gold surface.

The reactors are available in 3 sizes (S, M, and L) giving the operator a lot of flexibility:

1–6 objects

60–600 ml volume of gold solution

Delivery form	Art. Code
Preciano iQ reactor S (for 1–2 objects)	6601 0045
Preciano iQ reactor M (for 6 objects)	6601 0044
Preciano iQ reactor L (for up to 6 large objects requiring a large volume of gold solution)	6601 0043



Preciano iQ squirrel Set, 40 + 60mm

Delivery form	Art. Code
1x40mm and 1x60mm	6601 0047



Preciano iQ chart

Current electroforming solution chart for electroforming unit iQ

The deposition level for each tooth individually is determined on the Preciano iQ analysis chart by comparing the prepared dies with reference objects (original plaster dies). The solution volume is set by the device.

Delivery form	Art. Code
1 piece	6601 0046

Recycling electrode

For recovery of scrap gold of electroforming solutions.

Delivery form	Art. Code
1 piece	6600 0473



FRAMEWORK MATERIALS

GOLD SOLUTION

Preciano Bio universal gold solution, 0.5L 8.0 gr Au (activator incorporated)

- Activator inside
- Shelf life up to 18 months

Preciano Bio gold bath universal is suitable for use in the Preciano IQ and CL-GF electroforming units. The gold bath is non cyanide and is used for electroforming dental prosthetic restorations.

The activator is incorporated in the gold bath. A particular feature of the bath is that it produces very hard, durable restorations and its long shelf-life.

Delivery form	Art. Code
500ml box	6603 5322



PRECIANO CONSUMABLES

Heraform duplicating silicone Type A and B

Delivery form	Art. Code
2 kg Heraform white/orange (1 kg each Type A + B)	6450 0811



Preciano duplicating flasks B and C

Addition free and filler free silicone for fabricating duplication models, e.g. electroforming plaster dies.

Delivery form	Art. Code
Duplication flask B	6600 0458
Duplication flask C	6600 0459



Blocset

Block out material

For blocking out undercuts on the electroforming plaster die.

Product components

3 x 4 g Blocset paste
3 x 4 g Blocset liquid

Delivery form	Art. Code
Blocset assortment paste/liquid	6470 7645

7 HERA® FRAMEWORK MATERIALS

7.4 PRECIANO ELECTROFORMING

PRECIANO CONSUMABLES

Hera SWE 2000

Silicone wetting agent

Applying Hera SWE 2000 to the surfaces of these materials greatly improves the flow of stone or investment on elastomeric impression materials, silicone duplicating materials and pattern waxes as well as increasing the accuracy of the edges and quality of the surface.

For use with:

- Elastomeric impression materials
- Silicone duplicating materials and wax patterns

Delivery form	Art. Code
1000 ml bottle	6450 0983



Spray bottle 150 ml

for surfactant/wetting agent

Delivery form	Art. Code
1 piece	6450 0989

OCTA-STONE for Preciano

Dental Stone, high strength, Type 4 Colour: light brown

Particularly suitable for fabricating electroforming plaster dies.

Advantages

- Exceptional thixotropy
- Outstanding flowability
- Good stackability
- Suitable for pouring up to 4 dental arches

Delivery form	Art. Code
20 kg, 4x5 kg aluminium bags in a carton	6600 0235



Preciano conductive silver lacquer

For fabrication of an electrically conductive contact layer on objects set up for electroforming.

Delivery form	Art. Code
5 g bottle	6600 0465



Preciano contact rods

For attaching electroforming plaster dies to the Preciano iQ and CL-GF electroforming devices.
Material: stainless steel

Dimensions

Ø 0.9mm, 125 mm long

Delivery form	Art. Code
200 pieces	6600 0463



Preciano special brushes

For applying silver conductive lacquer

Delivery form	Art. Code
3 pieces	6600 0464

PRECIANO CONSUMABLES

Preciano conductive silver lacquer TK

For producing a conductive electrical contact film on units to be electroformed. Ideal for telescopic crowns, low viscosity.

Delivery form	Art. Code
5 g bottle	6602 0746

Preciano drying block

For secure placement of the contact rods supplied with electroforming plaster dies after application of the silver conductive lacquer.

Delivery form	Art. Code
1 piece	6600 0467



Preciano graduated cylinder

Delivery form	Art. Code
1 piece	6600 2891



Preciano removing agent for silver conductive

For residue free, non aggressive and rapid dissolution of the silver conductive lacquer layer in the ultrasonic device.

Delivery form	Art. Code
250 ml bottle	6600 0469

7 HERA® FRAMEWORK MATERIALS

7.4 PRECIANO ELECTROFORMING

PRECIANO CONSUMABLES

Attachment bond Adhesive composite

Attachment bond is a high strength, dual curing composite for the fixation of prefabricated and tailored attachments.

The use of Attachment bond offers the dental technician numerous benefits: a definite time saving compared with soldering, economies in materials, and stress free bonds even in light impenetrable areas.

Delivery form	Art. Code
2x3 g dispenser syringe	6470 7648



Twist drill Ø 0.9 mm

Delivery form	Art. Code
1 piece	6600 2874



Preciano Docubloc

Delivery form	Art. Code
1 piece	6600 6796

Preciano electrode cleaner

Solution for cleaning the grid electrode of electroforming unit CL-GF/Preciano iQ.

Delivery form	Art. Code
250 ml bottle	6600 0472

Preciano plastic tweezers

Delivery form	Art. Code
1 piece	6600 2872



Collecting container for finished gold solution

Delivery form	Art. Code
5 l canister	6600 2869

Collecting container for used gold solution

Delivery form	Art. Code
2.5 l canister	6600 2890

Container for "Preciano conductive silver lacquer remover"

Delivery form	Art. Code
1 piece	6600 2870

Container for "Preciano stone solvent"

Delivery form	Art. Code
1 piece	6600 2873

FRAMEWORK MATERIALS

Hera is the market leader in dental plaster. Special plasters, type 3 all-round hard and type 4 superhard plasters are developed, optimised and processed in close cooperation with the manufacturer.

INNOVATION WITH TRADITION.

One of seven good reasons to select Hera.

To create high quality alloys you need a perfect base. With Hera, the our base consists of seven valuable components, such as tradition. As the inventor of vacuum pressure casting and the first palladium-silver base alloy, tradition is at it's best-the foundation for future innovations and solutions for tomorrow.

www.kulzer.com

DENTAL PLASTERS TYPE 2

OCTA-ARTI

Articulation plaster, Type 2 (Class 1)
with very low expansion $\leq 0.03\%$

Shade

super white

Advantages

- Super white shade
- Excellent mixing behavior
- Soft and creamy texture
- Due to its stability directly fix the models
- Dimensional stability due to extremely low expansion
- Good adhesion to model and base plasters

Indication

- Fixing models in articulators
- Milling plates
- Occlusal rims
- Overcasts

Delivery form	Art. Code
25 kg sack, super white	6606 6344

MOLDA-ARTI

Articulation plaster, Type 2 (Class 1)
with very low expansion $\leq 0.03\%$

Shade

super white

Advantages

- Super white shade
- Excellent mixing behavior
- Soft and creamy texture
- Due to its stability directly fix the models
- Dimensional stability due to extremely low expansion
- Good adhesion to model and base plasters

Indication

- Fixing models in articulators
- Milling plates
- Occlusal rims
- Overcasts

Delivery form	Art. Code
25 kg sack, super white	6606 6345

OCTA-FIX

Articulation plaster, Type 2 (Class 1)
with very low expansion $\leq 0.03\%$

The special plaster Octa-Fix is used to articulate models on the articulator or occludator. After mixing it is stable and is very good for shaping and handling.

Shade

white

Advantages

- Immediate fixation, no positional displacement
- Extremely low expansion
- Long lasting dimensional stability
- Tailored processing time, controlled by addition of water

Indication

- Fixing/securing models in articulators
- Milling plates
- Occlusal rims
- Overcasts

Delivery form	Art. Code
25 kg sack, white	6600 0223



7 HERA® FRAMEWORK MATERIALS

7.5 PLASTERS AND POURING THE MODEL

SPECIAL DENTAL PLASTERS

Moldafix

**Articulation plaster, Typ 2 (Class 1)
with very low expansion $\leq 0.03\%$**

The special plaster Moldafix is used to articulate models on the articulator or occludator. After mixing it is stable and is very good for shaping and handling.

Shade

white

Advantages

- Immediate fixation, no positional displacement
- Extremely low expansion
- Long lasting dimensional stability
- Tailored processing time, controlled by addition of water

Indication

- Fixing/securing models in articulators
- Milling plates
- Occlusal rims
- Overcasts

Delivery form	Art. Code
25 kg sack, white	6601 4771
25 kg sack, cardboard, white	6602 2400



OCTA-FLOW

**Special plaster/Base plaster Type 4,
flowable**

Special plaster for the serial base setting of dental arches fabricated along with base formers such as the Kulzer Splitcast system. The mixed plaster is very flowable and is remarkable for its very low setting expansion.

Shade

azure blue, mint

Advantages

- Outstanding thin underflow on dental arches and pins
- Smooth surface and high final hardness
- Low, stable expansion
- Sharp optical differentiation between arch and base through intensive staining

Indication

- Mounting of arches with a base former

Use Hera IS KS 99 as an
insulating agent
Art. Code 6460 1390

Delivery form	Art. Code
20 kg, aluminium bags 4 x 5 kg in a shipping carton	
azure blue	6600 0229
mint	6601 9908
super white	6606 7894



DENTAL PLASTERS TYPE 2

OCTA-BASTER

Multipurpose plaster, Type 2 (Class 2)

The alabaster plaster Octa-Baster and its fast setting variant Moldabaster S are particularly multiple-purpose. Octa-Baster is well mixable with Octa-Mol and is excellent for the investment of full and partial denture prosthetics, synthetic crowns, provisional bridges and for inexpensive repair models.

Shade

white

Advantages

- Very good flowability
- Good wetability
- Fast mixing and setting
- Low expansion
- Mixing with OCTA-MOL and OCTA-DUR makes it possible to produce economical, simple repair models

Indication

- Investment using acrylic technique (in combination with OCTA-MOL)
- Study, situation and planning models in prosthetics and orthodontics
- Mix with type III – plasters for the investment of full and partial prostheses, acrylic crowns and bridges (provisionals)
- Overcasts
- Occlusal rims
- Articulating

Delivery form	Art. Code
25 kg sack, white	6600 0224



Moldabaster

Multipurpose alabaster plaster, Type 2 (Class 2)

The alabaster plaster Moldabaster and its fast setting variant Moldabaster S are particularly multiple-purpose. Moldabaster is well mixable with Moldano and is excellent for the investment of full and partial denture prosthetics, synthetic crowns, provisional bridges and for inexpensive repair models.

Shade

white

Advantages

- Very good flowability
- Good wetability
- Fast mixing and setting
- Low expansion
- Mixing with OCTA-MOL and OCTA-DUR makes it possible to produce economical, simple repair models

Indication

- Investment using acrylic technique (in combination with Moldano)
- Study, situation and planning models in prosthetics and orthodontics
- Mix with type III – plasters for the investment of full and partial prostheses, acrylic crowns and bridges (provisionals)
- Overcasts
- Occlusal rims
- Articulating

Delivery form	Art. Code
16 kg, white (4 x 4 kg)	6605 5362
25 kg sack, white	6516 8983
25 kg sack, cardboard, white	6602 2397

Moldabaster S

Multipurpose plaster, Type 2 (Class 2)

The fast set formulation of Moldabaster

Shade

white

Advantages

- Very good flowability
- Good wetability
- Fast mixing and setting
- Low expansion
- Mixing with OCTA-MOL and OCTA-DUR makes it possible to produce economical, simple repair models

Indication

- Investment using acrylic technique (in combination with Moldano)
- Study, situation and planning models in prosthetics and orthodontics
- Mix with type III – plasters for the investment of full and partial prostheses, acrylic crowns and bridges (provisionals)
- Overcasts
- Occlusal rims
- Articulating

Delivery form	Art. Code
25 kg sack, white	6516 9025
25 kg sack, white cardboard	6602 2396

7 HERA® FRAMEWORK MATERIALS

7.5 PLASTERS AND POURING THE MODEL

DENTAL PLASTERS TYPE 3

OCTA-MOL

Hard plaster, Type 3

Shade

blue

Advantages

- Perfect handling consistency
- High compatibility with alginate impressions
- Good stackability
- Suitable for pouring up to 4 dental arches
- Very good sculpting characteristics
- The classic among Type 3 dental stones

Indication

- Master models in full and partial prosthetics and orthodontics
- Opposing, repair and situations models, model bases
- Investment full and partial prosthetics, acrylic crowns and bridges (provisionals)

Delivery form

Art. Code

25 kg sack, blue

6600 0225



OCTA-DUR

Hard plaster, Type 3

Shade

yellow, blue

Advantages

- Perfect handling consistency
- High compatibility with alginate impressions
- Good stackability
- Suitable for pouring up to 6 dental arches
- Good sculpting characteristics
- Perfectly adjusted setting expansion on a par with class IV dental stone (0.08 %) with excellent dimensional stability

Indication

- Master models in full and partial prosthetics and orthodontics
- Opposing, repair and situations models, model bases
- Investment full and partial prosthetics, acrylic crowns and bridges (provisionals)

Delivery form

Art. Code

25 kg sack, yellow

6600 0226

25 kg sack, blue

6600 0227

25 kg sack, superwhite

6606 7893



DENTAL PLASTERS TYPE 3

Moldano

Hard plaster, Type 3

Shades

blue, yellow, white

Advantages

- Perfect handling consistency
- High compatibility with alginate impressions
- Good stackability
- Suitable for pouring up to 4 dental arches
- Very good sculpting characteristics
- The classic among Type 3 dental stones

Indication

- Master models in full and partial prosthetics and orthodontics
- Opposing, repair and situations models, model bases
- Investment full and partial prosthetics, acrylic crowns and bridges (provisionals)



Delivery form	Art. Code
25 kg sack	
blue	6511 3526
white	6535 0226
yellow	6601 4741
25 kg sack, cardboard	
blue	6602 2411
white	6602 2413
yellow	6602 2412
18 kg carton, (4 x 4.5 kg bag)	
blue	6587 0394
white	6604 1806
4.5 kg bag	
blue	6587 0882

Moldadur

Hard plaster, Type 3

Shades

blue, yellow

Advantages

- Perfect handling consistency
- High compatibility with alginate impressions
- Good stackability
- Suitable for pouring up to 6 dental arches
- Good sculpting characteristics
- Perfectly adjusted setting expansion on a par with class IV dental stone (0.08%) with excellent dimensional stability

Indication

- Models in full and partial prosthetics and orthodontics
- Working, opposing, situation and repair models, bases for saw cut models
- Investment of full and partial prosthetics, acrylic crowns and bridges (provisionals)

Delivery form	Art. Code
25 kg sack	
blue	6505 2563
yellow	6601 4742
25 kg sack, cardboard	
yellow available, on request	6602 2399
18 kg carton, (4 x 4.5 kg bag)	
yellow	6605 5361

Dental plasters							
	Molda-Arti/ OCTA-ARTI super white Special plaster (Articulation)	OCTA-FIX/ Moldafix white Special plaster (Articulation)	OCTA-FLOW mint/azure blue/ superwhite Special plaster, Type 4 (Base plaster)	OCTA-BASTER/ Moldabaster/ Moldaster S white Type 2	OCTA-MOL/ Moldano blue Moldano: additionally white and yellow	OCTA-DUR blue/yellow/ superwhite Type 3	Moldadur blue/yellow Type 3
Thixotropy level							

Very pronounced thixotropy

Pronounced thixotropy

Low thixotropy

Soft consistency

DENTAL STONES TYPE 4

High strength dental stones (Type IV acc. EN ISO 6873) from Kulzer are made using high grade raw materials. You, the user, therefore receive materials with first class physical properties: The following characteristics are valid for all products.

- **High compressive strength** results in hard-wearing surfaces
- **Excellent long term stability** (consistently low setting expansion)
- **Superior compatibility with all impression materials**
- **For all high quality prosthetic indications** such as sectioned models and models for partial denture bases.

The products have different handling characteristics like mixing behaviour, consistency, flowability, thixotropy, working time, and stackability.

Which handling characteristics would you like?

We have the right product for your every need.



















Thixotropy

is the phenomenon where materials become fluid when subjected to mechanical forces such as stirring, shaking, or ultrasonics and regain their solidity immediately after termination.

With the Type 4 dental plasters from Kulzer this means that these:

- flow into very thin areas under vibration
- flow very easily into impressions
- produce bubble-free, highly detailed models

and, regain their original firm consistency immediately after the mechanical activity has ceased.

Dental plasters							
	OCTA-ROCK beige Type 4	OCTA-ROCK ROYAL/MOLDA ROCK ROYAL Light brown/ivory/ light grey/ golden yellow Type 4	OCTA-STONE NF beige Type 4	OCTA-STONE CN/ Moldastone CN grey/light brown/ champagne/peach/ Moldastone CN: additionally green and pink Type 4	OCTA-STONE M pink Moldasynt light brown Type 4	OCTA-SUPERROCK beige Type 4	OCTA-STONE/ Moldastone light brown Type 4
Thixotropy level							
	Very pronounced thixotropy 	Pronounced thixotropy 	Low thixotropy 	Soft consistency 			

DENTAL PLASTERS TYPE 4

OCTA-ROCK® ROYAL

High strength stone, Type 4

Shades

ivory, light grey, light brown,
golden yellow

Advantages

- Snap-Set-Effekt , deforming after 30 minutes
- Suitable for pouring up to 6 dental arches at a processing time of 8 minutes
- Very good hand mixing due to creamy consistency
- Perfect flowability, but still thixotropic, therefore directly buildable
- No re-expansion, therefore maximum dimensional stability
- Excellent edge stability
- The colors are absolutely homogeneous, streak-free and scanable

Delivery form	Art. Code
20 kg, aluminium bags 4 x 5 kg in a shipping carton	
light brown	6606 9123
light grey	6606 9125
golden yellow	6606 9126
ivory	6606 9127

Moldarock Royal

High strength stone, Type 4

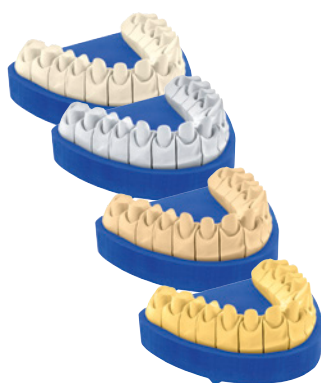
Shades

ivory, light grey, light brown,
golden yellow

Advantages

- Snap-Set-Effekt , deforming after 30 minutes
- Suitable for pouring up to 6 dental arches at a processing time of 8 minutes
- Very good hand mixing due to creamy consistency
- Perfect flowability, but still thixotropic, therefore directly buildable
- No re-expansion, therefore maximum dimensional stability
- Excellent edge stability
- The colors are absolutely homogeneous, streak-free and scanable

Delivery form	Art. Code
18 kg, aluminium bags 4 x 4,5 kg in a shipping carton	
light brown	6606 9137
light grey	6606 9138
golden yellow	6606 9139
ivory	6606 9140



FRAMEWORK MATERIALS

DENTAL PLASTERS TYPE 4

OCTA-STONE®**High strength dental stone, Type 4****Shade**

light brown

Advantages

- Exceptional thixotropy
- Outstanding flowability
- Very good stackable
- Suitable for pouring up to 2 dental arches

Delivery form	Art. Code
20 kg, light brown, aluminium bags 4 x 5 kg in a shipping carton	6600 0235
20 kg, light brown, 200 x 100 g bags in a shipping carton	6604 3057
1 kg, light brown, 10 x 100 g bags in a shipping carton	6604 3716

**OCTA-SUPERROCK®****High strength dental stone, Type 4****Shade**

beige

Advantages

- Thixotropic
- Good flowability
- Very good stackable
- Suitable for pouring up to 2 dental arches
- Especially suited for technicians, who prefer a very high compressive strength (60 MPa after 1 h)

Delivery form	Art. Code
20 kg, beige, aluminium bags 4 x 5 kg in a shipping carton	6600 1828



DENTAL PLASTERS TYPE 4

OCTA-STONE® M

High strength dental stone, Type 4

Shade

pink

Advantages

- Thixotropic
- Good flowability
- Stackable
- Suitable for pouring up to 3 dental arches

Delivery form	Art. Code
20kg, pink, aluminium bags 4x5kg in a shipping carton	6600 0236

Because of its surface smoothness and accuracy compared with other Type 4 plasters, OCTA-STONE M is particularly suitable cast partial denture. Other related products are described in Section 7.10



OCTA-STONE® CN

High strength dental stone, Type 4

Shades

champagne, grey, light brown, peach

Advantages

- Thixotropic
- Good flowability
- Stackable
- Suitable for pouring up to 3 dental arches
- Large selection of shades

Delivery form	Art. Code
20 kg, aluminium bags 4x5 kg in a shipping carton	
champagne	6601 9911
grey	6601 9912
light brown	6601 9913
apricot	6604 0351



OCTA-STONE® NF

High strength dental stone, Type 4

Shade

beige

Advantages

- Low thixotropic
- Outstanding flowability
- Still stackable
- Suitable for pouring up to 3 dental arches

Delivery form	Art. Code
20 kg, beige, aluminium bags 4x5 kg in a shipping carton	6600 0232



FRAMEWORK MATERIALS

DENTAL PLASTERS TYPE 4

OCTA-ROCK®**High strength dental stone, Type 4****Shade**

beige

Advantages

- Soft consistency
- Very good flowability
- Suitable for pouring up to 5 dental arches

Indication

- Master models for crown and bridge technique
- Master models for inlay/onlay technique
- Master models for cast partial denture
- Opposing models

Delivery form	Art. Code
20kg, beige, aluminium bags in a shipping carton	
20 kg (4x5 kg)	6600 0240

Moldasynt®**High strength dental stone, Type 4****Shade**

light brown

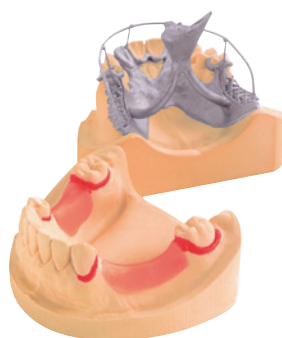
Advantages

- Thixotropic
- Good flowability
- Stackable
- Suitable for pouring up to 3 dental arches

Indication

- For master models in model casting, crown, bridge and inlay/onlay techniques
- Opposing models
- Saw-cut model bases

Delivery form	Art. Code
18 kg, light brown, aluminium bags* 4x4.5 kg in a shipping carton	6587 0807



DENTAL PLASTERS TYPE 4

Moldastone® CN

High strength dental stone, Type 4

Shades

champagne, green, grey, light brown, peach, pink

Advantages

- Thixotropic
- Good flowability
- Stackable
- Suitable for pouring up to 3 dental arches
- Large selection of shades

Indication

- For master models in cast partial denture, crown, bridge and inlay/onlay techniques
- Opposing models
- Saw-cut model bases

Delivery form	Art. Code
18 kg, aluminium bags* 4x4.5 kg in a shipping carton	
green	6601 4743
pink	6601 4744
light brown	6601 4745
peach	6602 0492
grey	6602 0493
champagne	6602 0494



*Available in single 4.5 kg bags from your dental products dealer!



Moldastone®

High strength dental stone, Type 4

Shade

light brown

Advantages

- Pronounced thixotropy
- Good flowability
- Very good stackability
- Suitable for pouring up to 2 dental arches

Indication

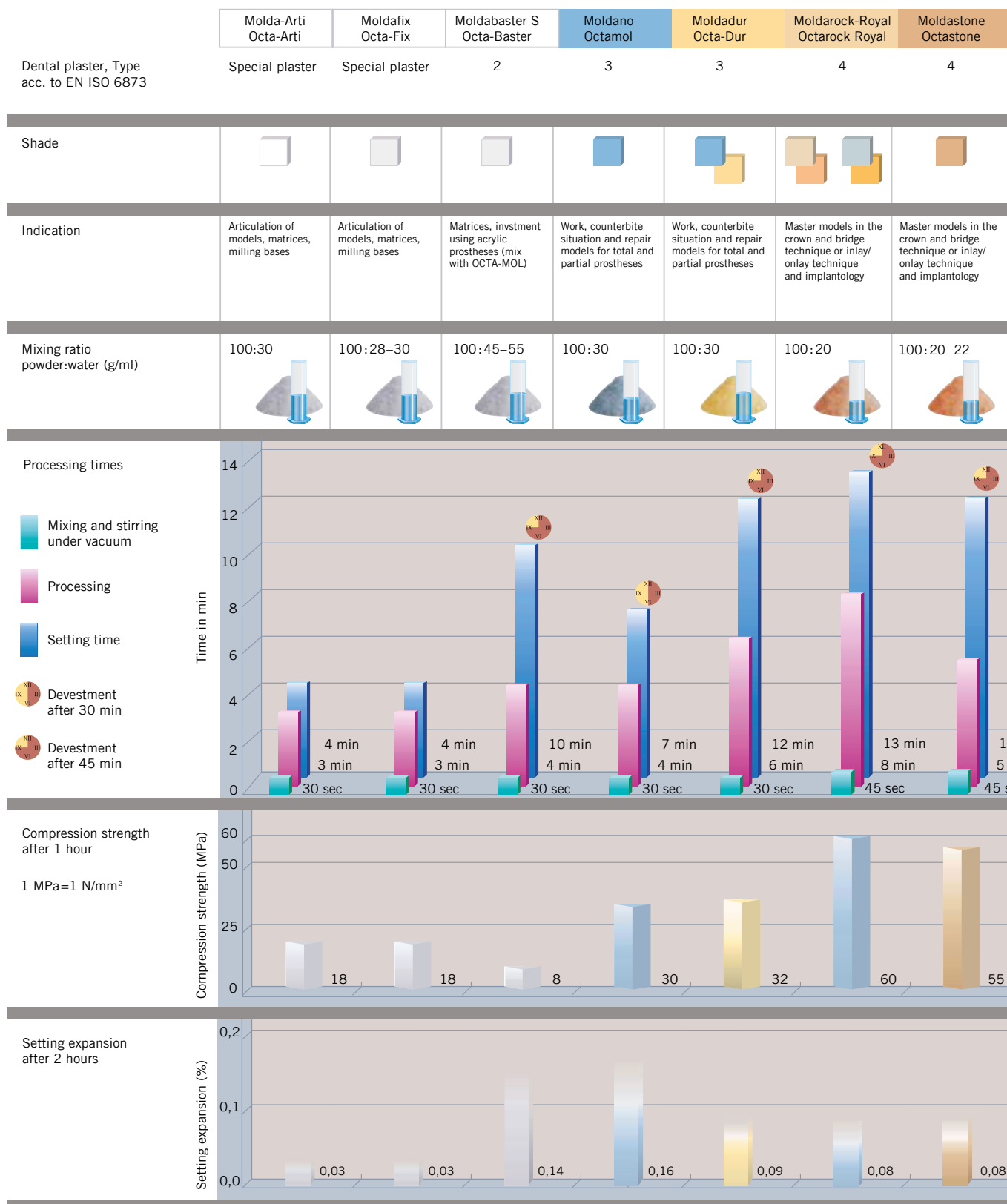
- For master models in crown, bridge, inlay/onlay and partial prosthetics (cast partial denture)
- Opposing models
- Galvano technique

Delivery form	Art. Code
18 kg, aluminium bags* 4x4.5 kg in a shipping carton	6587 0408













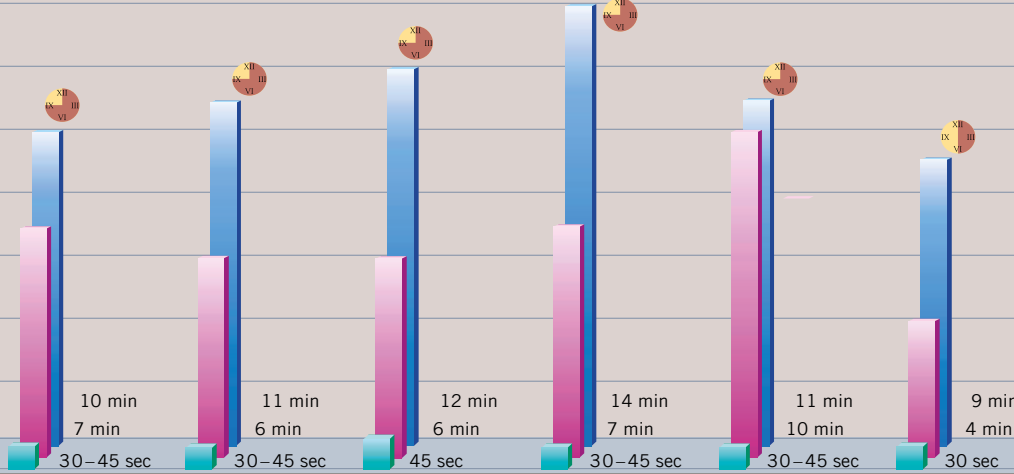
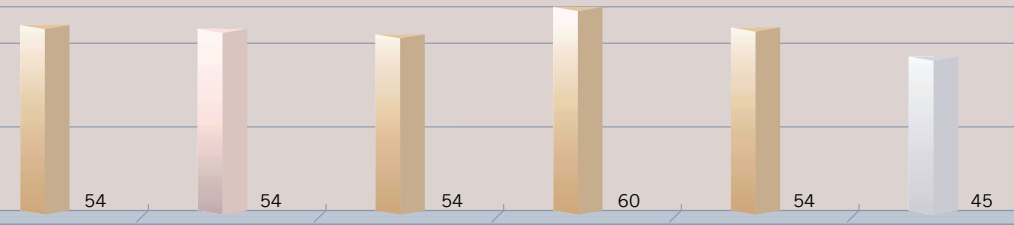



FRAMEWORK MATERIALS

7.5 PLASTERS AND POURING THE MODEL

OCTA/MOLDA PLASTERS:
TECHNICAL DATA AND PROCESSING INSTRUCTIONS

OCTA-STONE NF	Moldasynth Octastone M	Moldastone CN Octa-Stone CN	OCTA- SUPERROCK	OCTA-ROCK	OCTA-FLOW	
4	4	4	4	4	Special plaster with Type 4 properties	Dental plaster, Type acc. to EN ISO 6873

						Shade																																										
Master models in the crown and bridge technique or inlay/onlay technique and implantology	Master models in the crown and bridge technique cast partial denture and implantology	Master models in the crown and bridge technique or inlay/onlay technique and implantology	Master models in the crown and bridge technique or inlay/onlay technique and implantology	Suitable for successively pouring up master models in crown and bridgework technique	Bases (flowable consistency)	Indication																																										
100:20-21 	100:21-23 	100:22 	100:20-21 	100:21 	100:25 	Mixing ratio powder:water (g/ml)																																										
 <p>Processing times</p> <p>Time in min</p> <ul style="list-style-type: none">Mixing and stirring under vacuumProcessingSetting timeDevestment after 30 minDevestment after 45 min <table><tr><th>Product</th><th>Mixing (min)</th><th>Processing (min)</th><th>Setting (min)</th><th>Devestment 30 min (min)</th><th>Devestment 45 min (min)</th></tr><tr><td>OCTA-STONE NF</td><td>30-45 sec</td><td>7 min</td><td>10 min</td><td>12 min</td><td>9 min</td></tr><tr><td>Moldasynth Octastone M</td><td>30-45 sec</td><td>6 min</td><td>11 min</td><td>14 min</td><td>9 min</td></tr><tr><td>Moldastone CN Octa-Stone CN</td><td>45 sec</td><td>6 min</td><td>12 min</td><td>14 min</td><td>9 min</td></tr><tr><td>OCTA-SUPERROCK</td><td>30-45 sec</td><td>7 min</td><td>14 min</td><td>14 min</td><td>9 min</td></tr><tr><td>OCTA-ROCK</td><td>30-45 sec</td><td>10 min</td><td>11 min</td><td>14 min</td><td>9 min</td></tr><tr><td>OCTA-FLOW</td><td>30 sec</td><td>4 min</td><td>9 min</td><td>14 min</td><td>9 min</td></tr></table>						Product	Mixing (min)	Processing (min)	Setting (min)	Devestment 30 min (min)	Devestment 45 min (min)	OCTA-STONE NF	30-45 sec	7 min	10 min	12 min	9 min	Moldasynth Octastone M	30-45 sec	6 min	11 min	14 min	9 min	Moldastone CN Octa-Stone CN	45 sec	6 min	12 min	14 min	9 min	OCTA-SUPERROCK	30-45 sec	7 min	14 min	14 min	9 min	OCTA-ROCK	30-45 sec	10 min	11 min	14 min	9 min	OCTA-FLOW	30 sec	4 min	9 min	14 min	9 min	
Product	Mixing (min)	Processing (min)	Setting (min)	Devestment 30 min (min)	Devestment 45 min (min)																																											
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OCTA-FLOW	30 sec	4 min	9 min	14 min	9 min																																											
 <p>Compression strength (MPa)</p> <p>Compression strength after 1 hour</p> <p>1 MPa=1 N/mm²</p> <table><tr><th>Product</th><th>Compression strength (MPa)</th></tr><tr><td>OCTA-STONE NF</td><td>54</td></tr><tr><td>Moldasynth Octastone M</td><td>54</td></tr><tr><td>Moldastone CN Octa-Stone CN</td><td>54</td></tr><tr><td>OCTA-SUPERROCK</td><td>60</td></tr><tr><td>OCTA-ROCK</td><td>54</td></tr><tr><td>OCTA-FLOW</td><td>45</td></tr></table>						Product	Compression strength (MPa)	OCTA-STONE NF	54	Moldasynth Octastone M	54	Moldastone CN Octa-Stone CN	54	OCTA-SUPERROCK	60	OCTA-ROCK	54	OCTA-FLOW	45																													
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OCTA-SUPERROCK	60																																															
OCTA-ROCK	54																																															
OCTA-FLOW	45																																															
 <p>Setting expansion (%)</p> <p>Setting expansion after 2 hours</p> <table><tr><th>Product</th><th>Setting expansion (%)</th></tr><tr><td>OCTA-STONE NF</td><td>0,08</td></tr><tr><td>Moldasynth Octastone M</td><td>0,08</td></tr><tr><td>Moldastone CN Octa-Stone CN</td><td>0,08</td></tr><tr><td>OCTA-SUPERROCK</td><td>0,08</td></tr><tr><td>OCTA-ROCK</td><td>0,08</td></tr><tr><td>OCTA-FLOW</td><td>0,09</td></tr></table>						Product	Setting expansion (%)	OCTA-STONE NF	0,08	Moldasynth Octastone M	0,08	Moldastone CN Octa-Stone CN	0,08	OCTA-SUPERROCK	0,08	OCTA-ROCK	0,08	OCTA-FLOW	0,09																													
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OCTA-FLOW	0,09																																															

FRAMEWORK MATERIALS

7.5 PLASTERS AND POURING THE MODEL

DENTAL PLASTER TROUBLE SHOOTING GUIDE

Problem and cause

Setting inhibition

- Mixing vessel was washed with cleaning agent.
- Water residue in the mixing vessel altered the mixing ratio.
- Water used for mixing was too cold.
- Borax was added to the mixing water.
- Blood and saliva debris was not removed from the impression.
- The stone was not mixed long enough.
- Hydrocolloid impression was not neutralized with potassium sulphate solution.
- Stone was stored unsealed and could absorb moisture from the air.

Setting acceleration

- Set stone residue adhering to the mixing vessel, mixing paddles or spatula.
- Trimming water was added to the mixing water.
- Salt was added to the mixing water.
- Stone was stored unsealed and could absorb moisture from the air.
- Too little mixing water was used.
- There were particles of set stone in the stone mix.
- The stone was mixed too long / spatulated too heavily.

Increased expansion

- Trimming water was added to the mixing water.
- Salt was added to the mixing water or stone mix.
- Stone was stored unsealed and could absorb moisture from the air.
- Set stone residue adhering to the mixing vessel, spatula /mixing paddles etc.

Low final hardness

- Trimming water was added to the mixing water.
- Salt was added to the mixing water.
- Ratio of water was increased.
- The stone mix was spatulated too long (disrupting crystal formation).
- More water was added during mixing.
- The stone mix was poured when it had begun to set.

Porous surface

- Stone was stored unsealed.
- Air was trapped during manual mixing.
- The vacuum pump was not switched on during mechanical mixing or the air outlet of the mixing vessel was blocked.
- Blood and saliva residue was not removed from the impression.
- Sections of the alginate impression were already dry.

DENTAL PLASTER TROUBLE SHOOTING GUIDE

Solution

Setting inhibition

- Clean the mixing vessel, if necessary rinse off cleaning solution etc. with clean water and dry thoroughly.
- Dry the mixing vessel thoroughly after use.
- If possible use distilled water at room temperature for mixing.
- Setting inhibitors should not be used due to possible reduction in quality.
- Clean the impression thoroughly before pouring.
- Adhere to the manufacturer's mixing times.
- Immerse hydrocolloid impressions in a 2 % potassium sulphate solution.
- Store stone in airtight containers at room temperature.

Setting acceleration

- Clean the mixing vessel with clean water immediately after use.
- Do not use setting accelerators (reduces the quality of the stone).
- Do not use setting accelerators (reduces the quality of the stone).
- Store stone in airtight containers at room temperature.
- Adhere to the manufacturer's recommended mixing ratio.
- Clean the mixing vessel, if necessary rinse off cleaning solution etc. with clean water and dry thoroughly.
- Adhere to the manufacturer's recommended mixing times.

Increased expansion

- Setting accelerators should not be used.
- Setting accelerators should not be used.
- Store stone in airtight containers at room temperature.
- Clean mixing vessel immediately after use with clean water and dry thoroughly.

Low final hardness

- Only mix with distilled water.
- Do not use additives with the mixing water.
- Adhere to the manufacturer's recommended mixing ratio.
- Mechanical mixing should take 30sec. Manual mixing should not take longer than 60sec.
- Do not add any more water after the soaking time.
- Always adhere to the time recommended by the manufacturer for pouring the stone.

Porous surface

- Store the stone in an airtight container at room temperature.
- Stir mix (do not beat) the stone powder and water quickly for max. 60sec. against the sides of the plaster bowl (to eliminate any stone lumps).
- Check the functioning and seals of the pump, mixing vessel lid and air outlets.
- Clean the impression thoroughly and disinfect if possible before pouring with stone.
- Pour alginate impressions immediately after cleaning and disinfection.

FRAMEWORK MATERIALS

7.5 PLASTERS AND POURING THE MODEL

DENTAL PLASTER TROUBLE SHOOTING GUIDE

Problem and cause

Cracks in the model

- The stone used for pouring and basing the model was not fully set before being trimmed.
- During setting water was removed too quickly from the stone, e.g. due to the absorbent paper base.
- Too little water was used for mixing the stone.
- The model was dry before removing wax and had not been wetted.

Streaky, distorted stone model surface

- Deformed/damaged impression.
- Model removed too early from the impression.

Some soft areas on the surface of the model

- Residual wetting agent or disinfectant in the impression.

Broken off teeth

- Model removed from the impression too early.
- Inclination of the anterior teeth not taken into consideration when removing the model.
- Impression material too hard.

Increase in the expansion and reduction in the strength of the set model

- Too much water came into contact with the model after it was removed from the impression (e.g. during trimming and boiling off wax).

Reduction in detail reproduction on finished model

- The impression was poured using a stone with reduced flowability and the stone had begun to set.
- The model was cleaned in an ultrasonic cleaner.

Non parallel saw cuts on the model

- Saw blade was blunt.
- Stone too hard.
- Too much pressure was applied to the saw, causing distortion of the saw blade.

Damage to the preparation margin when trimming (e.g. rounded preparation margins)

- Incorrect / too coarse trimmer was used.

Unsatisfactory fit of removable dies in the model base

- Grinding dust, stone particles etc. prevent exact repositioning of the stone die in the model base.
- Stones with very different expansions were used for the dental arch and model base.

DENTAL PLASTER TROUBLE SHOOTING GUIDE

Solution

Cracks in the model

- Allow the stone base to set completely.
- Base the models on a non absorbent surface.
- Adhere to the manufacturer's mixing ratio.
- The model should be briefly wetted beforehand (do not soak, as it would increase the expansion).
Do not use boiling water to remove wax.

Streaky, distorted stone model surface

- Retake impression.
- Wait until the stone is completely set. Depending on the type of stone, allow 30 to 45 minutes before removing the model from the impression.

Some soft areas on the surface of the model

- Liquid residue, which could inhibit setting, should be carefully removed (e.g. by blowing dry).

Broken off teeth

- Wait until the stone is completely set. Depending on the type of stone, allow 30 to 45 minutes before removing the model from the impression.
- Remove the impression according to the inclination of the anterior teeth.
- With highly resistant, hard impression materials, first remove the tray from the impression material and then carefully remove the now more flexible impression material from the model.

Increase in the expansion and reduction in the strength of the set model

- Keep contact with water to a minimum. Do not use boiling water. Use dry trimmers if possible.

Reduction in detail reproduction on finished model

- Adhere to the manufacturer's recommended working time. Only use flowable stone.
- Models should not be cleaned in an ultrasonic cleaner.

Non-parallel saw cuts on the model

- Change the saw blades before they become blunt and ensure the teeth of the saw are correctly positioned.
- It is best to saw the dies within 2 hours of setting.
- Saw without applying pressure.

Damage to the preparation margin when trimming (e.g. rounded preparation margins)

- Only use trimmers that ensure the dies are not damaged during trimming.
Ensure the handpiece is set to the correct rpm (too low = "chatter marks").

Unsatisfactory fit of removable dies in the model base

- Clean all connecting parts, e.g. with a brush. Compressed air should always be used with caution.
- Fabricate the dental arch and model base using materials with the same expansion if possible.

PIN SYSTEM – TOOLS

Pin system

The Kulzer pin system offers a whole range of benefits:

- The pins are very slim and can be used successfully segments.
- The pins are relatively short and ensure models are not optimalb height. They are precisely matched to the forming plates of the Kulzer Splitcast-system.
- The pins are attached in parallel alignment using the holes drilled with the pin drill.
- A shoulder in front of the tapered tip ensures that the pins extend to the same length from the dental arch. The pin tips are visible on the model floor of the primary base.

Tapered pins

Metal sleeve are placed on the pins to ensure precise guidance and avoid having to widen the drill hole or damaging the plaster through repeated removal of the sawcut die.

Delivery form	Art. Code
Tapered pins*, CL-PSM, Brass, 1000 pieces	6450 0910
Metal sleeve, Brass, 1000 pieces	6450 0912
Retention rings for tapered pins, 500 pieces	6460 1184
Pin drill Ø 1.6mm (Shaft Ø 3.0mm), 1 piece	6450 0914
Pin drill (Shaft Ø 3.0mm), 6 piece	6450 0916

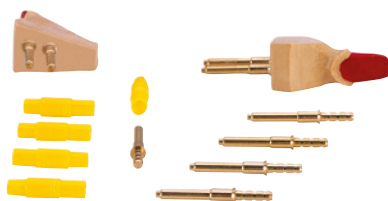
*Retention rings are delivered in small quantities with the pins.

Step pins with plastic sleeves

The step pins with plastic sleeves are processed in the same way as the tapered Kulzer pins. They have the same properties and advantages. Positioning is more accurate due to the long, uniform, and precise alignment to the nth. degree.

There is less susceptible to plaster crumbling on the alignment surfaces of the sleeves. The plastic sleeves did in the initial removal of the arch after the base plaster has set.

Delivery form	Art. Code
Step pins with plastic sleeves, 1000 pieces	6460 1105



Hera® SWE 2000

Silicone surfactant/wetting agent

Applying Hera SWE 2000 to the surfaces of these materials greatly improves the flow of stone or investment on elastomeric impression materials, silicone duplicating materials and pattern waxes as well as increasing the accuracy of the edges and quality of the surface.

Indication

- Elastomeric impression materials
- Silicone duplicating materials and Wax patterns

Delivery form	Art. Code
1000ml bottle	6450 0983



SPLITCAST SYSTEM – FRIPACK – TOOLS

Spray bottle

Ideal for fine applications of liquids.

Delivery form	Art. Code
1 spray bottle	6450 0989

Hera IS KS 99

Plaster insulating agents/Baseplaster

Hera IS KS 99 is a special insulating agent that suited for dental arches with an underbase of OCTA-FLOW.

Delivery form	Art. Code
150 ml bottle	6460 1390



Fripack 2 and 3

Plastic packaging material for dental laboratory jobs

Fripack is a stiff plastic container, available in two sizes. It is the ideal covered container for impressions, plaster models, and prostheses.

The container is multipurpose and is supplied with snap fasteners.

Delivery form	Art. Code
Fripack 2, large, oval, 3 compartments	6450 1067
Fripack 3, rectangular for Zeiser models, 3 compartments	6450 1068



Fripack 2



Fripack 3

CL-SCS

Splitcast system

The CL-SCS Splitcast System supports the manufacturing of models with optional magnet secured primary or secondary bases, for

- models with removable single stumps
- complete models
- the Splitcast technique to test for correct mounting of the model on the articulator and for comparison of centric registers

Delivery form	Art. Code
Holding plates, 50 pieces	6450 0814
Magnets, 10 pieces	6450 0815
Magnet bowls, 50 pieces	6450 0816
Die plates, large (red), 2 pieces	6450 0817
Rubber rings, large (black), 5 pieces	6450 0821



FRAMEWORK MATERIALS

We keep the most common dental waxes available for waxing. Blue Profile and Prepon pearl wax for crowns and bridges and Palavit G waxing material for casting.

COMPETENCE FROM PERSON TO PERSON.

One of seven good reasons to select Hera.

To create high quality alloys you need a perfect base. With Hera, the our base consists of seven valuable reasons. Such as competence. To guarantee competence means reliance on the skills of all employees. Ensuring that they work with maximum accuracy, continuously improve their knowledge and work with their colleagues to manufacture very high quality products.

www.kulzer.com

MODELING MATERIALS CROWNS AND BRIDGES

Prepon

Bead wax

Shade

green

Prepon is the universal bead wax for crown and bridge technique which has unique features.

Advantages

- Perfect dosage thanks to even beads shape
- Synthetic wax composition – consistent high quality
- Fast and uniform melting
- Sparing in use
- Especially suited for electric wax knives

Indication

- Ideal for the wax up technique
- Optimal modelling, trimming, and milling capabilities
- Clean, smooth wax surfaces after processing
- Low shrinkage, no warping of finished wax model – very high precision
- Residue free firing

Delivery form	Art. Code
100 g tin	6541 1624



SYNTHETICS

Modelling synthetics

The high plasticity of waxes and the risk of deformation of wax objects has led to the development of modelling synthetics that can be hardened through light- or selfpolymerisation during modelling. Models created in this way possess high mechanical stability, thereby minimizing the risk of deformation.

One disadvantage is that many of these synthetics first swell during heating up in the casting mould. This creates the risk that parts of the surrounding investment material will be shattered. To prevent this, the use of harder investment materials and partial wax layering is necessary.

To prevent possible defects from swelling, Kulzer has developed synthetics that shrink during the preheating process in the casting mould.

The preheating program for casting moulds for synthetic models is intended to modify the process so that residue free firing is ensured. We recommend a holding step at 580°C to obtain residue-free firing.

Palavit G

Modelling material for the casting technique

Palavit G is a self curing two component modelling synthetic material formed from powder and liquid.

Palavit G is well adapted for efficient manufacturing of cast models of all kinds, e. g.:

Advantages

- Individual processing with brush or wash technique
- Stable, precise fit frameworks
- Residue free firing
- Excellent grinding qualities
- Optical control of layer thickness (red stain)

Indication

- Manufacturing of crown and bridge frameworks
- Manufacturing of primary and secondary attachment parts
- Blocking (solder preparation)
- Manufacturing of individual anterior pin guide plates

Delivery form	Art. Code
Liquid, powder	
80 ml liquid	6470 7632
500 ml liquid	6470 7633
100g powder	6470 7636
500g powder	6470 7637



SYNTHETICS

Blocset

Blocking out material

Blocset paste – light-curing, highly plastic, single-component material for dental model preparation

Blocset liquid – light-curing modelling liquid for processing Blocset paste and dispersion layer restoration

Advantages

- Excellent grinding qualities after polymerisation
- Dimensionally stable under high temperatures (e.g. during burnout and deep draw processes)
- Superior bonding strength on model materials
- Short polymerisation time
- Excellent edge stability and abrasion resistance

Indication

- Build up and enlargement of plaster dies to save on precious metals
- Alignment of interfacing parts on plaster dies and models

Product selection

3 x 4 g Blocset paste

3 x 4 g Blocset liquid

Delivery form	Art. Code
Blocset paste/liquid assortment, Blocset liquid 1 x 3 ml	6470 7645



Base wax acc. to Gründler

Delivery form	Art. Code
50 g tin	6450 0758



7 HERA® FRAMEWORK MATERIALS

7.7 INVESTMENTS

Hera is a leader with investment compounds in the German market. Heravest Speed has played a major role in the development of speed investment compounds. Hera includes investment compounds for crowns and bridges, investment compounds for model casting, for press-ceramics and plaster-bound compounds for cast-gold alloys – always resulting in good fits and smooth surfaces.

QUALITY IN EVERY DETAIL.

One of seven good reasons to select Hera.

To make high-quality alloys really perfect the base must be right. And it consists of seven particularly valuable reasons with Hera. Such as quality. Hera by Kulzer is subject to high standards to ensure that reproducible quality can be achieved. Ultimately, the fabrication of dentures is much more than simply filling gaps. What counts in the best result for the welfare of patients.

www.kulzer.com

INVESTMENTS FOR C & B PRECIOUS METALS

Heravest Saphir

Phosphate bonded, graphite free C & B precious metal investment material for crown and bridgework.

- For speed and conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit, even in difficult situations
- Extra smooth surfaces (resistant to cracking)
- Laboratory tested

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton, containing 35x160g bags	6601 4411



Heravest Premium 2

Phosphate bonded, graphite free C & B precious metal investment material for crown and bridgework.

- For speed and conventional programmed preheating process.

Advantages

- For precious metal alloys
- Excellent fit
- Smooth surfaces
- Gold casting alloys 700–800 °C
- Ceramic bonding alloys 850–950 °C

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton, containing 35x160g bags	6602 1966



Neo Duroterm 7

Gypsum bonded, graphite free C & B precision investment for precious metal casting.

- For speed and conventional programmed preheating process.

Advantages

- Easily controlled total expansion
- Creamy consistency for good flowability in all wax jobs
- Simple devestment under flowing water
- No sandblasting necessary
- Particularly good for inlay/onlay jobs
- Particularly smooth surfaces

Indication

- Inlays
- Partial crowns
- Crown, small bridges

Delivery form	Art. Code
16.8 kg carton, containing 4 x 4.2 kg bags	6587 1277



7 HERA® FRAMEWORK MATERIALS

7.7 INVESTMENTS

INVESTMENTS FOR C & B PRECIOUS AND NON PRECIOUS METALS

Heravest® Speed

Conventional phosphate bonded, graphite free C&B investment material for speed preheating and for crown and bridgework.

- For speed preheating.

Advantages

- Extra-smooth surfaces
- Highest precision
- Precise fit casts
- Suggested for the transfer technique 900 ► 700°C

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton containing 35x160g bags	6460 1514
4.5 kg carton containing 75x60g bags	6603 6741
20 kg carton containing 125x160g bags	6460 1151



Heravest® Onyx

Phosphate bonded, graphite free C&B non precious metal investment material for crown and bridgework.

- For speed and conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit, even in difficult situations
- Extra smooth surfaces (resistant to cracking)
- Laboratory tested

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton containing 35x160g bags	6601 4414



INVESTMENTS FOR PARTIAL DENTURE CASTING

New investment
for 3D printed
casting materials.

Heravest® M

Phosphate bonded, graphite free precision investment material for the entirecast partial denture in cobalt-chromium base alloy and precious metal.

- Suitable for silicone and gel duplication.
- For conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit
- Smooth surfaces
- Results oriented and laboratory tested

Indication

- Cast partial denture

Delivery form	Art. Code
20 kg carton containing 125x160g bags	6450 0611
20 kg carton (4 x 5 kg)	6450 0612



Heravest® M 2000

Phosphate bonded, graphite free precision investment material for the entirecast partial denture in cobalt-chromium base alloy and precious metal.

- Suitable only for silicone duplication.
- For speed preheating.

Advantages

- Outstanding flowability
- Excellent fit
- Smooth surfaces
- Results oriented and clinic tested

Indication

- Cast partial denture

Delivery form	Art. Code
20 kg carton containing 125x160g bags	6460 1438
20 kg carton (4 x 5 kg)	6460 1439



Heravest® M print+

Phosphate bonded, graphite free precision investment especially for partial denture frameworks as printed model castings and castings made from wax or plastic.

- This investment is specially developed to burn out plastic frames made with Rapid-Prototyping resins. Heravest M print+ is recommended for fast preheating.

Advantages

- Excellent fit
- Clean cast object
- Smooth surfaces

Indication

- Cast partial denture

Delivery form	Art. Code
20 kg carton containing 50x400g bags	6606 9118



Heravest M and Heravest M 2000 are excellent for pouring CoCr cast partial denture alloys.

7 HERA® FRAMEWORK MATERIALS

7.7 INVESTMENTS

INVESTMENTS FOR PRESSABLE CERAMICS

Heravest® Press

Phosphate bonded, graphite free precision investment material for pressable ceramics incl. e-max system.

- For speed preheating
- For conventional programmed preheating process

Advantages

- Excellent fit
- High strength
- Easily devested

Indication

- Inlays
- Partial crowns
- Crown, small bridges

Delivery form	Art. Code
5.6 kg carton, containing 56x 100g bags	6602 0402



Our pressable ceramics and other accessories are listed by ceramics

Heravest® disposable plunger

The plungers are suitable for all press ceramics which need a 12 mm diameter and can be placed without pre-heating in the pre-heated muffle. The disposable plungers save time-consuming cleaning of reusable plungers. Simple handling. The diameter is 12 mm.

Delivery form	Art. Code
50 pcs. Heravest disposable plunger	6604 3951

MOLDAVEST® INVESTMENTS FOR C & B

Moldavest® futura

Phosphate bonded, graphite free C & B precious metal investment material for crown and bridgework.

- For speed and conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit, even in difficult situations
- Extra-smooth surfaces (resistant to cracking)
- Laboratory tested

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton 35x 160 g bags, without liquid*	6600 9780
4.5 kg carton 75x 60 g bags, without liquid*	6601 3511



Moldavest® exact

Phosphate bonded, graphite free C & B non precious metal investment material for crown and bridgework.

- For speed and conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit, even in difficult situations
- Extra-smooth surfaces (resistant to cracking)
- Laboratory tested

Indication

- Inlays
- Partial crowns
- Crown, small bridges
- Tapered crowns, telescope
- Large bridges

Delivery form	Art. Code
5.6 kg carton containing 35x 160 g bags, without liquid	6600 9785
4.5 kg carton 75x 60 g bags, without liquid*	6601 3500



Heravest M and Heravest M 2000 are excellent for pouring CoCr cast partial denture alloys.

LEVOGEL® / LEVOTHERM® INVESTMENT FOR CAST PARTIAL DENTURE

Levogel®

Levogel is an economic, reversible duplication gel for several duplications. It has good flow properties and is particularly precise. Levogel combines excellently with Levotherm.

Advantages

- Reversible
- Re-usable
- Good compatibility with Levotherm
- Good flow properties
- Sharp lines
- Economic

Indication

- Duplication for removable partial dentures

Delivery form	Art. Code
6 kg tub	6560 6468



Levotherm®

Phosphate bonded, graphite free precision investment material for the entire cast partial denture in cobalt-chromium (CoCr) and precious metal.

- Suitable for silicone and gel duplication
- For conventional programmed preheating process.

Advantages

- Outstanding flowability
- Excellent fit
- Smooth surfaces
- Results-oriented and laboratory tested

Indication

- Cast partial denture

Delivery form	Art. Code
7.5 kg carton containing 50x150g bags, without liquid	6587 2281
9 kg carton containing 20x450g bags without liquid	6560 6484



MOLDAVEST INVESTMENTS FOR CAST PARTIAL DENTURE

Moldavest® master

Phosphate bonded, graphite free precision investment material for the entire cast partial denture in cobalt-chromium (CoCr) and precious metal.

- Suitable for silicone and gel duplication
- For conventional programmed preheating process

Advantages

- Outstanding flowability
- Excellent fit
- Smooth surfaces
- Results-oriented and laboratory tested

Indication

- Cast partial denture

Delivery form	Art. Code
20.25 kg carton containing 45x450g bags, without liquid	6600 9782



Moldavest® master run

Phosphate bonded, graphite free precision investment material for the entire cast partial denture in cobalt-chromium (CoCr) and precious metal.

- Suitable only for silicone duplication
- For speed preheating

Advantages

- Outstanding flowability
- Excellent fit
- Smooth surfaces
- Results-oriented and clinic tested

Indication

- Cast partial denture

Delivery form	Art. Code
20.25 kg carton containing 45x450g bags, without liquid	6600 9783



LIQUIDS FOR INVESTMENT MATERIALS

Liquid for investment materials

Kulzer liquids are designed for powders and they are tailored for use of several investments.

Investment BS liquid 1

Standard liquid for

- Heravest Speed
- Heravest Onyx
- Heravest M print+
- Heravest Press
- Heravest M
- Heravest M 2000
- Moldavest exact
- Moldavest master
- Moldavest master run

Extra liquid for telescopes and tapered crowns for

- Heravest Saphir
- Moldavest futura

Delivery form	Art. Code
900ml bottle	6601 9993
3l canister	6601 9994
10l canister	6601 9995

Investment BS liquid 2

Standard liquid for

- Heravest Premium 2
- Heravest Saphir
- Moldavest futura

Delivery form	Art. Code
900ml bottle	6601 9996
3l canister	6601 9997
10l canister	6601 9998

Investment Special BS liquid 3

Special liquid to obtain higher expansion for

- Heravest Onyx
- Moldavest exact

Delivery form	Art. Code
900ml bottle	6602 0131










Levotherm liquid

Special mixing liquid for Levotherm investment material

Delivery form	Art. Code
1000ml bottle	6560 6492

Mixing liquids must be protected from freezing and should not be stored below 5 °C!
Order your winter supply promptly!

Type	C + B Precious Metal			C & B Precious Metal C & B NPM		C+B NPM		Cast partial denture			Pressed Ceramic
											
	Heravest Saphir/ Moldavest futura	Heravest Premium 2	Neo Durotherm 7* (plaster bonded)	Heravest Speed	Heravest Onyx/ Moldavest Exact	Heravest M/ Moldavest master	Heravest M 2000/ Moldavest master run	Levotherm	Heravest M print	Heravest Press	
	Investment material according to EN ISO 15912										
	Heating method										
	Rapid heat-up										
Software guided heat-up											
Indication range											
Inlays											
Partial crowns											
Crown, small bridges											
Tapered crowns, telescope											
Large bridges											
Cast partial denture (NPM + PM)						Silicone + gel duplication	Silicone duplication	Gel duplication	Silicone duplication		
Suitable sprue systems											
Steel ring with liner					X1 to X9					Silicone/card-board sheath	
ring free					Recommended X1 to X6						
others						Cast partial denture cuvette***	Cast partial denture cuvette***				
Technical data (stirring, investment)											
Mixing ratio (powder:liquid)	g/ml	100:22	100:22	100:25	100:22	100:18	100:18	100:18	100:14	100:20	100:22
Mixing time under vacuum	sec	60	60	60	60	60	60	60	60	60	60
Processing range, approx. at 22°C	min	7	6	5-6	7	4	4	4	3-4	5	6
Setting start (Vicat)	min	9.5	8.5	9	9.5	5.5	5.5	5.5	3.5	7.5	9
Flowability	mm	125-135	125-135	135-145	130-140	145-155	145-155	125-135	90-120	129-133	130-140
Compression strength	MPa	3.0	4.0	6.0	4.0	15.0	15.0	14.0	20	13	4.0
Therm. expansion, linear (equivalent to 75%)	%	1.0	1.05	1.10	0.95	0.9	0.9	0.85	1.2 (100%)	0.8	0.9
*** Total expansion, linear (equivalent to 75%)	%	1.9	1.60	2.0	2.55	1.7	1.7	2.05	-	2.2	1.9
Preheating											
Max. final temperature	°C	950	950	950	950	1030	1030	1030	1050	1030	850
Max. setup temperature	°C	850	850	950	950	software guided	software guided	950-1000	software guided	850-900	850
Recommendation for transfer technique	°C	-	-	900>700	-	-	-	-	-	-	-

* Phosphate-bonded investment material

** Plaster-bonded investment material, heatable to 700 °C (not suitable for high melting alloys – suited only for gold casting alloys)

*** Crepe-, plastic or silicone sheaths

All given values are mean values. More information on concentration control may be found in the specific user instructions.

INVESTMENT TROUBLE SHOOTING GUIDE

Heravest Saphir, Moldavest futura, Heravest Premium 2

Problem

Causes and Remedies

Fit: Castings too loose (precious metal alloys)
(with pattern resin crowns and bridges, inlays, onlays, secondary telescope crowns)

- Check the concentration
- If possible, reduce the concentration by 50 % max.
- Use Investment BS Liquid 1 instead of Investment BS Liquid 2

Casting surface roughness or surface irregularities
(with patterns sculpted using wax, pattern resin, plastic vacuum-formed copings and with plastic precision attachments)

- Check the casting parameters (overheating the molten metal)
- Check the preheat temperature (too high preheat temperatures reduce the surface quality)
- Only vibrate the investment, if necessary, at minimum setting (risk of sedimentation)
- Check the vacuum pump of the mixer
- Do not use waxes that only burnout without residue at a high temperature
- Increase the heat soak time of the mould; min. 60 minutes to ensure an adequate burnout time for plastics
- Adhere to the powder/monomer ratio and curing time of the pattern resin (adhere to the manufacturer's instructions)

Fit: Castings too tight (precious metal alloys)
(with pattern resin crowns and bridges, inlays, onlays, secondary telescope crowns)

- Check the concentration
- If possible, increase the concentration to 100%
- Adjust the mixing ratio from 100g: 22 ml liquid to 100g: 20–21 ml liquid

Mould surface splits off with casting ring sizes X6–X9

- Adhere strictly to the time in the instructions for use for placing the mould in the furnace and always roughen the surface (grind)
- There is contact between the investment and the top of the steel casting ring; ensure the ring liner is positioned correctly
- Inadequate ring liner used with X6 and X9
- If the measures described above do not remedy the problem, reduce the temperature for placing the mould in the furnace given in the instructions for use by 50°C
- Adhere strictly to the mixing ratio!
- More concentration liquid results in a reduction in the strength and therefore weakens the strength matrix. This results in the mould surface splitting off at a preheat temperature between 800°C and 850°C

Investment consistency too thick

- Check the mixing ratio is the same as in the instructions for use
- Precisely measure and dispense the concentration liquid and water
- Check the weight of the contents of the pre-packed bag
- Check that the concentration liquid is correct (mix-up of different types of concentration liquid)
- Mixing speed too low (Motor speed < 250 rpm)
- Increase the mixing speed to approx. 350 rpm

Consistency of the investment too thin

- Check the mixing ratio is the same as in the instructions for use
- Precisely measure and dispense the concentration liquid and water
- Check the weight of the contents of the pre-packed bag
- Check the mixing speed (350 rpm); the consistency becomes thinner above 350 rpm and the working time becomes shorter
- The normal properties of the product relate to a mixing speed of 350 rpm

Working or setting time is shorter than required

- Check the storage conditions and ambient temperature (the ambient temperature may be too high; above 24°C)
- Product properties relate to a temperature of 22°C±2°C (recommended storage and working temperature)
- Adhere to the mixing time and rpm recommended in the instructions for use
- Check the mixing ratio is the same as in the instructions for use
- Precisely measure and dispense the concentration liquid and water

Heravest Saphir, Moldavest futura, Heravest Premium 2

Problem	Causes and Remedies
Surface roughness	<ul style="list-style-type: none"> ■ Manual and/or vacuum mixer mixing time too short ■ Poor vacuum build-up in the mixer (defective unit, filter blocked etc.) ■ Bubble formation as a result of excessive vibration during investing ■ Mould put into the furnace at the wrong time (too soon, too late or mould very dry) ■ Preheating time too short, preheat temperature too low ■ Pattern resin not burned out without residue (vacuum formed foils, resins, waxes) ■ Alloy overheated during casting
Working or setting time is longer than required	<ul style="list-style-type: none"> ■ Check the storage conditions and ambient temperature (the ambient temperature may be too low; below 20°C) ■ Product properties relate to a temperature of 22°C ± 2°C (recommended storage and ambient temperature)
Crack formation speed heating	<ul style="list-style-type: none"> ■ Top of the mould not roughened or ground before placing the mould in the furnace ■ There is contact between the investment and the top of the steel casting ring; ensure the ring liner is positioned correctly ■ Inadequate ring liner used with X6 and X9 ■ Ringless investing (without a steel casting ring) ■ Too many patterns invested with an insufficient gap between each of them as well as the outer surface of the mould ■ Non-adherence to the correct setting time or time for placing the mould in the furnace ■ Preheat temperature too high ■ The current instructions for use were not used ■ Large moulds in combination with patterns with a high proportion of light-curing wax or plastic ■ Investment segregation as a result of too high vibration during investing (sedimentation)
Surface problems with resin patterns	<ul style="list-style-type: none"> ■ When using wetting agent, ensure that the pattern is completely dry ■ Increase the heat soak time of the mould in the furnace; min. 60 minutes to ensure an adequate burnout time for plastics ■ Adhere to the powder/monomer ratio of pattern resin (adhere to the manufacturer's instructions for use) ■ Adhere to the curing time of the resin

Heravest Speed

Consistency of the investment too thin	<ul style="list-style-type: none"> ■ Check the mixing ratio is the same as in the instructions for use ■ Precisely dispense the concentration liquid and water ■ Check the weight of the contents of the pre-packed bag ■ Check the mixing speed (rpm) ■ Product properties relate to a speed of 350 rpm ■ A mixing speed > 350 rpm produces a more flowable consistency; this shortens the working and setting time
Surface irregularities on secondary units (pattern resin units)	<ul style="list-style-type: none"> ■ When using wetting agent, thoroughly blow dry the sprayed surfaces before investing ■ Increase the heat soak time of the mould; min. 60 minutes to ensure an adequate burnout time for plastics ■ Adhere to the powder/monomer ratio of the pattern resin (see manufacturer's instructions for use), adhere to the curing time
Splitting off of the mould surface with casting ring sizes X6–X9	<ul style="list-style-type: none"> ■ Adhere strictly to the time given in the instructions for use for placing the mould in the furnace ■ There is contact between the investment and the top of the steel casting ring; ensure the ring liner is positioned correctly ■ Inadequate ring liner used with X6 and X9 ■ Adhere strictly to the time given in the instructions for use for placing the mould in the furnace and always roughen and grind the top of the mould ■ If the measures described above do not remedy the problem, reduce the temperature given in the instructions for use for placing the mould in the furnace by 50°C ■ With size X9 always use a metal casting ring

INVESTMENT TROUBLE SHOOTING GUIDE

Heravest Speed

Problem

Causes and Remedies

Fit too loose	<ul style="list-style-type: none"> Incorrect measuring or concentration Storage and working temperature too high Mixing time not adhered to and/or incorrect rpm (recommended speed 250rpm–350rpm) Concentration liquid mix-up
Fit of telescope secondary crowns/ Fit too tight	<ul style="list-style-type: none"> Do not use pressure investing Incorrect measuring or concentration Always use two layers of ring liner in the casting ring for mould size X6 and larger Never use casting ring size X1, size X3 and larger ensure optimal expansion Use Investment Liquid BS3 instead of Investment Liquid BS1 at 100% concentration
Working and setting time is shorter than required	<ul style="list-style-type: none"> Check storage conditions and ambient temperature Ambient temperature may be too high; above 24°C Product properties relate to a temperature of 22°C±2°C (recommended storage and working temperature) Adhere to the mixing times given in the instructions for use Mixing speed (rpm) too high; reduce motor speed > 350rpm to max. 350rpm Check the mixing ratio is the same as in the instructions for use Precisely dispense concentration liquid and water
Crack formation	<ul style="list-style-type: none"> Top of the mould not roughened or ground before placing the mould in the furnace Check the mixing ratio is the same as in the instructions for use There is contact between the investment and the top of the casting ring; ensure the ring liner is positioned correctly Inadequate ring liner used with X6 and X9 Ringless investing without a steel casting ring Too many patterns invested with an insufficient gap between each of them as well as the outer surface of the mould Do not use pressure investing Non-adherence to the correct setting time or the time for placing the mould in the furnace Preheat temperature too low, adhere to the transfer technique: temperature for placing in the furnace 900°C/casting temperature 700°C The current instructions for use were not used Large moulds used with light-curing waxes Segregation of investment as a result of too high vibration during investing (sedimentation)
Consistency of the investment too thick	<ul style="list-style-type: none"> Check the mixing ratio is the same as in the instructions for use Precisely dispense the concentration liquid and water Check the weight of the contents of the pre-packed bag Mixing speed too low (increase the motor speed to max. 350 rpm)
Working time and setting time is longer than required	<ul style="list-style-type: none"> Check storage conditions and ambient temperature Ambient temperature may be too low; below 20°C Product properties relate to test temperatures of 22°C±2°C
Solid finning with low-fusing gold casting alloys	<ul style="list-style-type: none"> Adhere to the instructions for use Always place the mould in the furnace at 900°C and transfer according to the instructions for use or reduce the temperature to 700°C (casting temperature)
Surface roughness	<ul style="list-style-type: none"> Manual and/or vacuum mixer mixing time too short (poor vacuum in the mixer due to defective unit e.g. filter blocked) Check the mixing ratio is the same as in the instructions for use Bubble formation as a result of excessive vibration during investing Mould put into the furnace at the wrong time (too soon, too late or mould very dry) Preheat time too short, preheat temperature too low Pattern resin not burned out without residue (vacuum-formed foils, plastics, waxes) Alloy overheated during casting

Heravest Onyx, Moldavest exact

Problem	Causes and Remedies
Surface problems with pattern resin units	<ul style="list-style-type: none"> ■ When using wetting agent, ensure that the surface of the pattern is then properly dried ■ Increase the heat soak time of the mould in the furnace; min. 60 minutes to ensure an adequate burnout time for plastics ■ Adhere to the powder/monomer ratio and curing time of the pattern resin (see manufacturer's instructions for use) ■ Optimum preheat temperature 900 °C
Surface roughness	<ul style="list-style-type: none"> ■ Manual and/or vacuum mixer mixing time too short (poor vacuum build-up in the mixer due to defective unit e.g. filter blocked) ■ Bubble formation as a result of excessive vibration during investing ■ Mould put into the furnace at the wrong time (too soon, too late or mould very dry) ■ Preheating time too short, preheat temperature too low ■ Pattern resin not burned out without residue (vacuum formed foils, resins, waxes) ■ Alloy overheated during casting
Splitting off of the mould surface with casting ring sizes X6–X9	<ul style="list-style-type: none"> ■ Adhere strictly to the temperature for placing the mould in the furnace given in the instructions for use and always roughen or grind the top of the mould ■ There is contact between the investment and the top of the steel casting ring; ensure the ring liner is positioned correctly ■ Inadequate ring liner used with X6 and X9 ■ Adhere strictly to the time for placing the mould in the furnace given in the instructions for use ■ If the measures described above do not remedy the problem, reduce the temperature for placing the mould in the furnace given in the instructions for use by 50 °C
Fit of telescope secondary crowns (fit too tight)	<ul style="list-style-type: none"> ■ Do not use pressure investing, inhibits the setting expansion ■ Use 2 layers of ring liner with casting ring sizes X6 and X9 ■ Do not use casting ring size X1 ■ Incorrect measuring or concentration ■ Storage and working temperature too low ■ Use BS Liquid 3 instead of BS Liquid 1 at 100 % concentration
Consistency of the investment too thick	<ul style="list-style-type: none"> ■ Check the mixing ratio is the same as in the instructions for use ■ Precisely dispense the concentration liquid and water ■ Check the weight of the contents of the pre-packed bag ■ Ensure the correct concentration liquid has been used (mix-up of different types of concentration liquid) ■ Mixing speed too low (motor speed < 250 rpm), increase the mixing speed to approx. 350 rpm ■ Mixing time too short; adhere to the mixing time given in the instructions for use
Consistency of the investment too thin	<ul style="list-style-type: none"> ■ Check the mixing ratio is the same as in the instructions for use ■ Precisely measure and dispense the concentration liquid and water ■ Check the weight of the contents of the pre-packed bag ■ Check the mixing speed (rpm) ■ Product properties relate to a mixing speed of 350 rpm ■ A mixing speed > 350 rpm produces a more flowable consistency; this shortens the working and setting time
Crack formation	<ul style="list-style-type: none"> ■ Top of the mould not roughened or ground before placing the mould in the furnace ■ There is contact between the investment and the top of the steel casting ring; ensure the ring liner is positioned correctly ■ Inadequate ring liner used with X6 and X9 ■ Ringless investing without a steel casting ring ■ Too many patterns with insufficient gap between each of them as well as the outer surface of the mould ■ Non-adherence to the correct setting time or the time for placing the mould in the furnace ■ The current instructions for use were not used ■ Large moulds in combination with patterns with a high proportion of light-curing wax or plastic ■ Segregation of the investment as a result of too high vibration (sedimentation)
Fit too loose	<ul style="list-style-type: none"> ■ Incorrect measuring or concentration ■ Storage and working temperature too high ■ Mixing time not adhered to and/or incorrect rpm ■ Concentration liquid mix-up

INVESTMENT TROUBLE SHOOTING GUIDE

Heravest M 2000, Moldavest master run

Problem

Causes and Remedies

Fit: CrCo framework too loose or too tight	<ul style="list-style-type: none"> ■ Check concentration ratio (variable from 50–75 %) ■ Ratio < 75 % ■ Check concentration ratio (variable from 50–75 %) ■ Ratio > 50 %
Cracks in the model and investment mould	<ul style="list-style-type: none"> ■ Furnace not at the recommended temperature of 900 °C–1030 °C ■ Mixing ratio not as recommended 100g: 18ml ■ Mould not put in the furnace at the recommended time of 15 minutes after initial powder/liquid contact ■ Mix-up of concentration liquid (Investment BS 1 Liquid is required) ■ Top and bottom of the mould not roughened or ground
Rough fitting surface	<ul style="list-style-type: none"> ■ Overheated molten metal
Gap formation between the model and investment mould	<ul style="list-style-type: none"> ■ Investment for the mould was mixed with concentration liquid instead of distilled water ■ Always mix investment for the mould with distilled water ■ Adhere to the recommended mixing ratio ■ Model too dry (after fabricating the working model, complete subsequent stages without delay)
Retention cast solid, finning	<ul style="list-style-type: none"> ■ Investment for the mould was mixed with concentration liquid instead of distilled water ■ Always mix investment for the mould with distilled water ■ Adhere to the mixing ratio recommended in the instructions for use ■ Do not apply surface adhesives to improve retention of the wax patterns to models fabricated using silicone duplication (adhesives often cause finning and solid cast retention) ■ Preheat the models briefly in the furnace or drying cabinet until warm to the touch (approx. 35 °C), then apply the wax patterns
Surface roughness	<ul style="list-style-type: none"> ■ Overheated molten metal ■ Manual and/or vacuum mixer mixing time too short ■ Wax wetting agent not adequately blow dried, which can cause problems with setting of the investment ■ Poor vacuum build-up in the mixer due to defective unit (e.g. filter blocked) ■ Bubble formation as a result of excessive vibration during investing ■ Mould put into the furnace at the wrong time (too soon, too late or mould very dry) ■ Preheating time too short, preheat temperature too low ■ Pattern resin not burned out without residue (resins, waxes) ■ Do not remove the wax from the mould with steam

Heravest M, Moldavest master, Levotherm

Fit: CrCo framework too loose or too tight	<ul style="list-style-type: none"> ■ Check concentration ratio (variable from 50–75 %) ■ Ratio < 75 % ■ Check concentration ratio (variable from 50–75 %) ■ Ratio > 50 %
Cracks in the model and investment mould	<ul style="list-style-type: none"> ■ Preheat temperature not at the recommended 950 °C–1030 °C ■ Mixing ratio not as recommended 100g: 18ml ■ Mix-up of concentration liquid (Investment BS 1 Liquid is required) ■ Top and bottom of the mould not roughened or ground
Investment adheres to the gel surface after removal of the model	<ul style="list-style-type: none"> ■ Gel duplication should set at room temperature ■ Adhere strictly to the mixing ratio ■ Store and use investment at room temperature, ideally at 22 °C ± 2 °C

Heravest M, Moldavest master, Levotherm

Problem	Causes and Remedies
Retention cast solid, finning	<ul style="list-style-type: none"> ■ Applies only to Heravest M (Moldavest master): ■ Do not apply surface adhesives to improve retention of the wax patterns to models fabricated using silicone duplication (adhesives often cause finning and solid cast retention) ■ Preheat the models briefly in the furnace or drying cabinet until warm to the touch (approx. 35°C), then apply the wax patterns ■ Applies to Heravest M (Moldavest master) and Levotherm: ■ Mixing ratio not as recommended in the instructions for use ■ Do not use for precision investing! Can cause investment to split off if used incorrectly ■ Precision investing is not necessary
Rough fitting surface	<ul style="list-style-type: none"> ■ Overheated molten metal
Surface roughness	<ul style="list-style-type: none"> ■ Overheated molten metal ■ Manual and/or vacuum mixer mixing time too short ■ Poor vacuum build-up in the mixer due to defective unit (e.g. filter blocked) ■ Bubble formation as a result of excessive vibration during investing ■ Mould put into the furnace at the wrong time (too soon, too late or mould very dry) ■ Preheating time too short, preheat temperature too low ■ Pattern resin not burned out without residue (resins, waxes) ■ Do not remove the wax from the mould with steam

7 HERA® FRAMEWORK MATERIALS

7.8 CASTING

The vacuum pressure casting system provides the best casting results inductively. Kulzer casting device Heracast iQ and high-quality dental alloys guarantee controlled casting results for all indications.

REPRODUCEABLE PRECISION.

One of seven good reasons to select Hera.

To make high-quality alloys really perfect the base must be right. And with Hera the base consists of seven particularly valuable reasons. Such as precision. Much of this is based on: the knowledge that users can rely on care, precision and quality. That means users can rely on Hera products by Kulzer.

www.kulzer.com

CASTING MACHINES AND ACCESSORIES

Casting technology – a core competence

Kulzer introduced the vacuum pressure casting process to the dental laboratory back in 1969 and has been enhancing it continuously ever since. Kulzer casting machines have become increasingly versatile, reliable, compact and economical over the years.

Benefits

- Reliable casting with the most successful and safest casting process in dental laboratory technology: vacuum pressure casting
- No metal losses when casting
- Minimal metal input because neither a casting head nor flow channels are required
- Safe, gentle melting and casting under vacuum
- Dense, fine-grain casts with smooth surfaces
- No inclusions of graphite or ceramic particles in the cast

Heracast iQ

Vacuum pressure casting machine.
The intelligent, interactive state of the art casting technology Induction-heated vacuum pressure casting machine

The Heracast iQ is a casting machine that is an absolute leader both technically and in terms of quality. The high demands made of dental laboratories with regard to quality and economy can be met successfully by using a Heracast iQ.

Plug & Cast – state-of-the-art casting technology with interactive communication

Simply plug into a standard power (220–230V) socket and compressed-air supply and your Heracast iQ is ready for casting.

Casting is fun!

The Heracast iQ communicates interactively, enquiring about and demanding all the necessary information and actions. The risk of operator errors is virtually eliminated. Optimised casting chamber mechanism makes insertion of the mould and filling it with metal child's play.

A powerful RF generator brings both precious and non-precious alloys up to casting temperature quickly and gently. For many alloy groups the Heracast iQ either triggers the casting operation during the main melting phase automatically or it allows you to trigger the process manually. It only takes 3 to 5 minutes per cast. This way, casting is fun!

All-in-one

The Heracast iQ is a compact bench-top unit. The vacuum pump and cooling system are already integrated. That's why it's "all-in-one".

Benefits at a glance:

- The Heracast iQ gives you maximum production reliability, guaranteed by consistently good casting results
- Suitable for casting all precious and non-precious alloys
- Compact bench-top unit for 230V mains
- Vacuum pump and cooling system are integrated
- 6 languages to choose from
- Memory space for programming up to 100 alloy names and their casting parameters
- Rapid casting sequence (approx. 3–5 min/cast)
- Economical in terms of cost and operation



Delivery form

Heracast iQ incl.
compressed air nozzle diam. 13 mm,
hose clamp 12–20 mm,
high pressure hose
diam. 13x3 mm, 10 m long,
adhesive door label

Interactive communication display

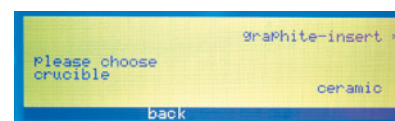


Fig. 1) = Crucible selection

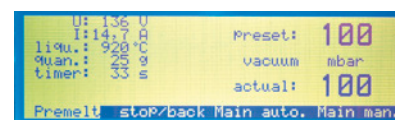


Fig. 2) = Premelt

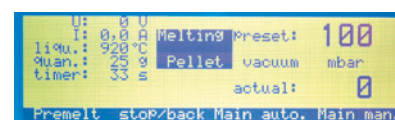


Fig. 3) = Main melt

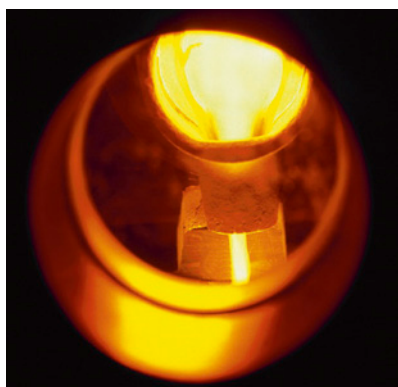


Fig. 4) = Interactive operator navigation

CASTING MACHINES AND ACCESSORIES

Heracast iQ

vacuum pressure casting machine.

The intelligent, interactive state of
the art casting technology

Technical data	
Heating	Induction (RF)
Mains voltage	200–250 V 1P/N/PE, 50/60 Hz
Power rating	2.6 kVA
Vacuum pump	Yes (integrated)
Cooling water	Yes (integrated)
Compressed air supply	4–7 bar
Maximum temperature	1750 °C
Casting capacity up to	130 g alloy in graphite crucible 100 g alloy in ceramic crucible 60 g alloy in ceramic crucible for non-precious alloy
Dimensions WxDxH in mm	760×460×450
Weight	65 kg
Software Update	Via RS232 Interface
Language	German, English, French, Italian, Spanish
Operator control	By rotary encoder and four soft keys

Delivery form	Art. Code
Heracast iQ incl. accessories	6600 4331
Starter kit Consumables Heracast iQ/EC REF (Components can also be ordered separately) <ul style="list-style-type: none"> – Crucible holder, 1 holder – Ceramic crucible for precious metal, alloys, 1 pack – Graphite insert for ceramic crucible, 1 pack – Ceramic crucible for non precious metal alloys, 1 pack – Casting ring X3, 3 rings – Casting ring X6, 3 rings – Casting ring X9, 3 rings – Crucible former X3, 1 former – Crucible former X6, 1 former – Crucible former X9, 1 former – Flux pellets Hera SP 99, small, 1 pack – Alloy scoop, 1 scoop – Spruing aid – Plexiglas semi shell, 1 aid 	6600 5470
Maintenance set (required for damp or unclean compressed air or an intake pressure > 7 bar)	6600 5499
Pressure-Tank Set (required for insufficient compressed air volume supply)	6600 8921

CASTING MACHINES AND ACCESSORIES

Vacuum pump CL P Type 7

Rotary Vane Vacuum Pump

Delivered incl. high grade mineral oil, which allows long maintenance intervals (oil change) as well as contributing to the high capacity of the pump. We recommend use of this pump with Heramat porcelain furnaces, Heracast EC and former Combilabor casting machines.

Advantages

- Compact construction
- Quiet operation
- High capacity

Art. Code **6600 2450**

Technical data

Mains voltage	AC 200–240 V 50/60 Hz
Power rating	0.1 kVA
Maximum vacuum	10 mbar
Dimensions W×H×D in mm	150×150×240
Weight	5.75 kg



CASTING RINGS, CASTING RING LINERS, ACCESSORIES

Casting ring and cone former

Kulzer casting rings are made of bright steel. The hard rubber cone formers with brass rims may be used with all Kulzer casting rings. Measurements are obtained with Kulzer pouring devices.

Delivery form	Art. Code
Ring X1, Ø 30 mm	6450 0692
Ring X3, Ø 48 mm	6450 0694
Ring X6, Ø 65 mm	6450 0696
Ring X9, Ø 80 mm	6450 0698
Cone former X1, hard rubber	6450 0706
Cone former X3, hard rubber	6450 0708
Cone former X6, hard rubber	6450 0710
Cone former X9, hard rubber	6450 0712



Silicone rings and cone formers

Some investment materials can be invested in special silicone rings to make investment material expansion fully effective.

Kulzer silicone rings are dimensionally adapted to the size of the casting rings so that the casting moulds can be inserted in the Kulzer casting devices without any problem. The appropriate cone formers of yellow plastic will be delivered along with the silicone rings.

Delivery form	Art. Code
Silicone ring, round, X1	6450 0726
Silicone ring, round, X3	6450 0727
Silicone ring, round, X6	6450 0728
Silicone ring, round, X9	6450 0729
Cone former, round, X1	6450 0718
Cone former, round, X3	6450 0719
Cone former, round, X6	6450 0720
Cone former, round, X9	6450 0721



Silicon sleeves and cone formers in model form

The Silicon sleeve and cone former in model form are especially suitable for model framework, which is printed in the rapid prototyping process or milled in a CAM milling process made of wax or plastic.

The setting expansion of the investment is not hindered by the silicone sleeve.

These muffle shapers can also be used for the K & B technique, as long as this muffle geometry fits into the casting machine. It fits all into Kulzer induction casting machines.

Delivery form	Art. Code
Silicon sleeve Size 1 Ø 75 mm x 60 mm	6606 9119
Silicon sleeves Size 2 Ø 80 mm x 65 mm	6606 9120
Cone former in model form Size 1 Ø 75 mm x 60 mm	6606 9121
Cone former in model form Size 2 Ø 80 mm x 65 mm	6606 9122

CASTING RINGS, CASTING RING LINERS, ACCESSORIES

Casting ring liners

Casting ring liners from Kulzer are made of flexible fabric and are asbestos free and biologically degradable. They are available both in roll form and in cut outs to match the four casting ring sizes.

Delivery form	Art. Code
Casting ring liner X1, 200 piece pack	6450 0702
Casting ring liner X3, 200 piece pack	6450 0703
Casting ring liner X9, 100 piece pack	6450 0704
Casting ring liner X9, 100 piece pack	6450 0705
Ring liner in dispenser carton 25m roll	6450 0700



7 HERA® FRAMEWORK MATERIALS

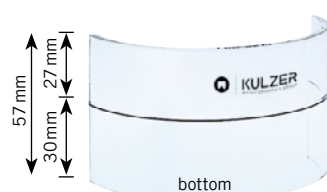
7.8 CASTING

TOOLS FOR MELTING AND POURING OF PRECIOUS METAL ALLOYS

Sprue positioner

Device for the immediate and easy control of the favourable positioning of the casting objects in the casting ring.

Delivery form	Art. Code
Plexiglass half-shell, 1 piece	6460 0012



Crucible box

For placing hot crucibles and later storage of used crucibles.

Delivery form	Art. Code
Crucible box for CL-IG/IM, CL-I 95 and Heracast iQ and EC	6450 0509



Crucible tongs

Delivery form	Art. Code
Crucible tongs, 55 cm long	6450 0513



Delivery form	Art. Code
Crucible box for Heracast RC, S/RCL CL-G 94/CL-G 77/ CL-G and CL-G 97	6450 0508



TOOLS FOR MELTING AND POURING OF PRECIOUS METAL ALLOYS

Graphite crucibles

Graphite has the best features among carbon crucible materials for working with high gold content alloys. Through use of a special manufacturing method, Kulzer graphite crucibles are free of any alloy-degrading additives. They possess high mechanical stability, temperature change adaptability, and good heat conductivity, and show uniform firing behaviour, which permits the desired controlled gas atmosphere for melting with an appropriate service life.

Delivery form	Art. Code
Graphite crucibles for Heracast RC-S, CL-G and CL-G 97 12 pieces, Ø 18mm, 63mm long	6450 0675
Graphite crucibles for Heracast RC-L, CL-G 77 and CL-G 94 10 pieces, Ø 24mm, 83mm long	6450 0678
Graphite inserts 10 pieces, suitable for ceramic crucibles of all induction heated casting devices (CL-IG, CL-I 95 and Heracast iQ and EC)	6450 0684

Ceramic Crucibles

Natural clay ceramic crucibles are the best solution for palladium precious metal and non precious metal alloys. A balanced mixture of different clays from very specific quarries ensures that these ceramic crucibles withstand the high melting temperatures of these alloys and give off no by products to damage the alloys.

In addition, these crucibles possess outstanding temperature change adaptability and resist adhesion of casting powders on the ceramic even after repeated use. The crucible inner surface is smooth so the molten mass flows out without leaving residues. From the industrial perspective, Kulzer natural clay ceramic crucibles clearly surpass all other crucible materials.

Delivery form	Art. Code
Ceramic crucibles for Heracast RC-S, CL-G and CL-G 97 12 pieces, Ø 18mm, 63mm long	6450 0674
Ceramic crucibles for Heracast RC-L, CL-G 77 and CL-G 94 10 pieces, Ø 24mm, 83mm long	6450 0677
Ceramic crucibles for CL-IG CL-I 95 and Heracast iQ and EC for precious metal, 6 pieces	6450 0683
Ceramic crucibles for CL-IG CL-I 95 and Heracast iQ and EC for NPM alloys, 6 pieces	6450 0685



Note:

High gold content dental alloys are melted in graphite inserts in Heracast iQ, Heracast EC, CL-I95 and CL-IG!
Several ceramic crucibles exist for NPM and PM alloys used in induction heated casting devices CL-IG, CL-I 95, Heracast iQ and Heracast EC.

TOOLS FOR MELTING AND POURING OF PRECIOUS METAL ALLOYS

Sealing rings

for support plates, fabric

Sealing rings for support plates are placed around the Kulzer cylindrical crucibles. They prevent the penetration of molten metal beads and casting powder into the heating crucible and thereby prolong its service life.

Delivery form	Art. Code
50 pieces for CL-G, CL-G 97, Heracast RC-S	6450 0790
50 pieces for Heracast RC-L, CL-G 77, CL-G 94, CL-G 2002	6450 0791



Graphite sealing rings

for support plates – with incredibly longer service life!

Graphite sealing rings excel because of their incredibly long service life. They sustain up to 100 castings without a problem and are outstanding for their low melting loss and high shape stability. They are placed on the support plates around the cylinder crucibles to prevent the penetration of molten metal beads and casting powder into the heating crucibles and therefore prolong their service life.

Advantages

- Long service life, up to 100 castings
- Low melting loss
- Stable shape
- Graphite foil construction – no fibres!

Delivery form	Art. Code
5 piece pack for Heracast RC-S, CL-G, CL-G 97	6600 9032
5 piece pack for Heracast RC-L, CL-G 77, CL-G 94, CL-G 2002	6600 9033



Hera SP 99

Casting Powder Pellets

Hera SP 99 casting powder pellets are required for melting and pouring precious metal reducing refractory ceramic alloys in ceramic crucibles. Clean handling and precise quantity dispensing ensure problem free reduction of oxide skin and an excellent cast.

Delivery form	Art. Code
1000 piece pack, pellets, large, for Heracast RC-S/L CL-G/77/2002, CL-G 94/97	6450 0979
1000 piece pack, pellets, small, for CL-IG/I 95 and Heracast iQ and EC	6450 0982



7 HERA® FRAMEWORK MATERIALS

7.9 CAST TREATMENT AND SOLDERING

Finishing materials: Hera includes grit for sandblasting oxide layers from Gold casting alloys and CoCr alloys, pickling agent and Hera GPP 99 gold polishing paste.

TREATMENT AFTER CASTING

Hera AB 99

Pickling Agent

For oxide layer removal from ceramic bonding alloys including pd based alloys. Ceramic veneering is not affected by Hera AB 99.

Advantages

- Reliably dissolves oxide even on Pd-based alloys
- No time consuming polishing of gnathologically modelled occlusal surfaces

Delivery form	Art. Code
1000ml bottle	6450 0985



Hera AM 99

Pickling agent

This powder pickling agent easily and safely removes all oxides from gold casting alloys and Bio Herador alloys.

Advantages

- Reliable dissolving of all oxides
- No time consuming polishing of gnathologically modelled occlusal surfaces

Delivery form	Art. Code
Pack with 3 bags x 65g	6450 0973



Hera GPP 99

Gold polishing paste

GPP 99 Gold Polishing Paste was especially developed for high lustre polishing of soft high gold content alloys.

Delivery form	Art. Code
300g pack	6460 1356



FRAMEWORK MATERIALS

TREATMENT AFTER CASTING

Aluminium oxide

Jet corundum (aluminium oxide Al_2O_3) for cleaning oxide layer of cast surfaces or in the preparation of framework surfaces for ceramic veneering.

Delivery form	Art. Code
25 kg carton	
50 µm	6450 0651
125 µm	6450 0654
250 µm	6450 0659
6 kg drum	
50 µm	6460 0971
125 µm	6460 0968
250 µm	6460 0969



Glass beads

Glass beads are used for blasting of gold cast alloys and produce a matt lustre on the surface.

Delivery form	Art. Code
25 kg carton, 50 µm	6450 0657



Special abrasive material M

Special abrasive material M helps to remove oxide from CoCr base partial denture casts.

Delivery form	Art. Code
25 kg carton, 250 µm	6450 0660



Separating discs

The separating discs are available in thickness of 0.2 and 0.3 mm and are particularly suited for economical cutting of precious metal alloys.

Delivery form	Art. Code
100 discs, Ø 22 mm	
Thickness 0.2 mm	6460 0394
Thickness 0.3 mm	6460 1061



SOLDERING UTILITIES

Hera UL 99 Universal flux

Hera UL 99 is a universal solder paste for all precious metal dental alloys and is especially adaptable for soldering ceramic bonding alloys. Hera UL 99 protects for oxidation even at high working temperatures. Hera AM 99 can remove any flux residues after soldering.

Delivery form	Art. Code
30g tin	6450 0971



Hera SLP 99 Special flux

Hera SLP 99 is a flux for soldering CoCr base and NiCr base alloys. But it is even suited for soldering precious metal and NPM alloys.

Delivery form	Art. Code
50g tin	6450 0968



Heravest L Solder investment

Heravest L excels for its good stiffness during modelling and high heat resistance. Flame treatment is possible immediately after setting. The setting expansion of Heravest L is very low.

Delivery form	Art. Code
4.5 kg	6450 0631



7 HERA® FRAMEWORK MATERIALS

7.10 PARTIAL DENTURE SYSTEM

ANOTHER GOOD REASON FOR SELECTING HERA: THE MODEL POURING SYSTEM.

The Hera model pouring system has high-quality, perfectly matched components that ensure a reliable and precise model cast – from preparation to duplication, wax-up and investment to cast alloys.



Plaster

(Moldarock Royal, Molda-Stone, OCTA-Stone M)

The type 4 superhard plasters have a strong thixotropic action. When the vibration is stopped, they harden immediately again. For users this means easy flow into the moulds and a result with smooth, bubble-free surfaces for detailed, accurate models.

Vario duplicating flask

The Vario duplicating flask system consists of two different sizes and allows completely even expansion of the investment compound models. The Vario duplication flask can be used for two different types of duplication: duplication socket impression (e.g. for split-cast models – silicone consumption 100–140g depending on the size) and economy duplication using the block-out material (silicone consumption 60–90g depending on the size).

Duplicating silicone (Heraform Type A+B, Heraform RS Type A+B)

Silicone duplication compounds are now a permanent component of precision casting technique. The Kulzer model casting system with the cross-linked, non-shrinking and low-filler Heraform and Heraform RS Type A+B silicones are the ideal materials for fabrication of duplicate models.

Silicone rings

Increased tear-resistance for greater safety when casting models: the switch to a higher quality silicone has significantly increased tear-resistance and as a result the durability of the silicone rings in the Kulzer model casting system. The new rings can be recognised by the yellow colour.

Investment compounds

(Heravest M, Heravest)

Our partial denture investment compounds are ideally suited for pouring CoCr base partial denture alloys. The investment compounds, proven in practice, have excellent flow properties and with their extreme surface density provide smooth object surfaces. Use Heravest M in the classical, programme-controlled preheating process and Heravest M 2000 in in fast-heating for an excellent fit.

NPM alloys for model pouring

(Heraenium CE, EH, NF, Laser)

The Heraenium alloys are high-quality alloys for the partial denture technique. They do not contain additional nickel components and the composition is designed to provide good elasticity with high strength. They pour well and have excellent flow and mould-filling properties. The partial denture frameworks are easily shined and polished.

KF model-casting wax

The physical properties of casting materials are determined by the structure.

The more fine-grained the structure, i.e. the more grains in a defined volume, the better the physical properties of the cast object. Kulzer research has developed a process for placing the crystal nuclei inside the mould cavity to achieve appropriately fine-grained cast structures. Kulzer KF model-casting wax makes it easy to apply fine grains to the mould cavity. Additional steps are not required. The physical properties of the partial denture skeleton are significantly improved. Kulzer KF model-casting wax makes it easy for you to fabricate more slender cast objects and as a result make objects more comfortable for patients.

FRAMEWORK MATERIALS

7.10 PARTIAL DENTURE SYSTEM

MODEL PREPARATION, DUPLICATION

Heraform Type A+B**Duplicating silicone**

This addition crosslinked, shrinkage and filler free silicone is used to fabricate duplicate models. The components A+B are processed in a 1 : 1 ratio.

Advantages

- Heraform excels for its high reproduction of details and good flowability.
- Materials costs can be reduced by addition of up to 15% granulate
- Shore hardness 20 (by comparison: Heraform RS 26)

Delivery form	Art. Code
2 kg Heraform white/orange 2 x 1 kg bottles each Type A+B	6450 0811
6 kg Heraform white/orange 2 x 3 kg canisters each Type A+B	6450 0798
10 kg Heraform white/orange 2 x 5 kg canisters each Type A+B	6460 0982

**Heraform RS Type A+B****Duplicating silicone**

Addition cured duplicating silicone, mixing ratio 1 : 1.

- Heraform RS is considerably harder than classical Heraform
- Resistance to cracking
- Very good wettability
- Shrinkage and filler free
- Granulation possible, allows for addition of low cost additives
- Shore hardness 26

Delivery form	Art. Code
2 kg Heraform RS white/green 2 bottles, 1 kg each, Type A+B	6460 1110
10 kg Heraform RS white/green 2 canister, 5 kg each, Type A+B	6450 1111

**Blockout material, silicone free**

Silicone free blockout material for efficient duplication.

For repeated use.

Delivery form	Art. Code
Blockout material 250g tin	6600 1813

MODEL PREPARATION, DUPLICATION

Vario duplicating flask

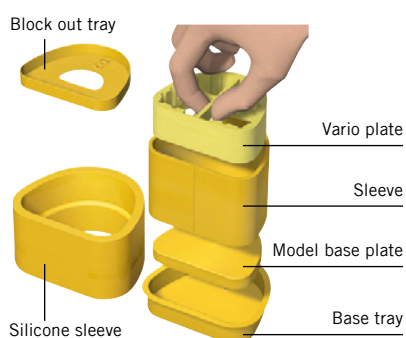
The Vario Duplicating Flask from Kulzer cast partial denture system consists of the following components:

1. Base tray to close flask
2. Blockout tray for duplicating without base
3. Model plate used to hold the working model in base impression duplicating
4. Sleeve to provide shaping
5. Vario plate to stabilize the silicone form
6. Silicone sleeve for pouring the model base

All parts are available in two sizes to improve fit on the working model and reduce the amount of materials used. Two kinds of duplication can be performed with the Vario Duplicating Flask:

Indication

Duplication with base moulding (e.g. for Splitcast models, silicone usage according to size, 100–140g)
Economy duplication using the blockout tray with the silicone sleeve and block-out silicone (silicone usage according to size, 60–90g).



Delivery form	Art. Code
Base tray Size B	6450 0731
Base tray Size C	6450 0732
Blockout tray Size B	6450 0743
Blockout tray Size C	6450 0744
Model plate Size B	6450 0740
Model plate Size C	6450 0741
Sleeve Size B	6450 0734
Sleeve Size C	6450 0735
Vario plate Size B	6450 0737
Vario plate Size C	6450 0738
Silicone sleeve Size B	6450 0746
Silicone sleeve Size C	6450 0747

Levogel®

Duplication gel

Levogel is an economic, reversible duplication gel for several duplications. It has good flow properties and is particularly precise. Levogel combines excellently with Levotherm.

Advantages

- Reversible
- Re-usable
- Good compatibility with Levotherm
- Good flow properties
- Sharp lines
- Economic

Delivery form	Art. Code
6 kg tub Levogel	6560 6468

Hera SWE 2000

Silicone wetting agent

Delivery form	Art. Code
1000ml bottle	6450 0983

Blocset of Blockout material

Blockout material, silicone free

Silicone free blockout material for blocking out working models for efficient duplication.

For repeated use.

Delivery form	Art. Code
3 x 4 g	6470 7645

We recommend our investment materials Heravest M/Moldavest master and Heravest M 2000/Moldavest master run described from Section 7.7 for manufacturing of investment models and investment adjustment.

MODELLING

Grain refining wax KF

Modelling waxes for partial denture with refining agent included.

The mechanical properties of partial alloys, such as Heraenium CE, EH, NF and Laser, are substantially improved when solidification is enhanced in the casting mould with a refining agent.

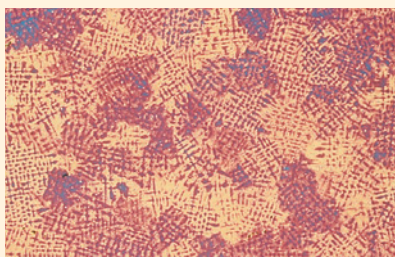
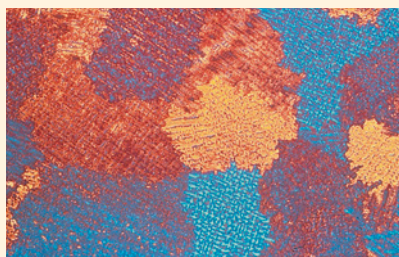
A granular refining agent has been added to the KF modelling waxes and wax premix. During the preheating process, the wax flows from the mould cavity while the refining agent remains in the mould. Therefore the CoCr base partial denture alloy structure will be more fine grained and homogeneous during the solidification process.

Advantages

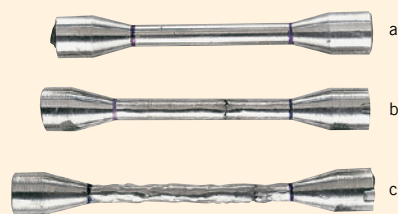
- Reduction of the risk of fracture of fragile parts such as clasps
- Improved elastic properties
- Improved polishability

Effect of sculpting wax KF on the breaking elongation of Heraenium CE

- a) Initial state
b) Without KF wax
c) With KF wax



Cast structure of Heraenium CE without KF wax (left) and with KF wax (right)



Modelling Wax KF, hard

This high grade hard sculpting wax matches the quality of the modelling waxes in the C&B technique.

Advantages

- Easy to trim
- Does not run
- Stable in form

Delivery form	Art. Code
65g tin	6460 1002



Modelling Wax KF, soft

This high grade soft sculpting wax matches the quality of the KF preformed wax pattern.

Delivery form	Art. Code
40g tin	6450 0779



Wax wire KF

Spue wax for manufacturing of sprue ingates

Delivery form	Art. Code
250g roll	
Ø 2.5 mm	6450 0783
Ø 3.5 mm	6450 0784



MODELLING

Wax sheets KF, smooth

Delivery form	Art. Code
15 sheets	
Thickness 0.22 mm	6450 0761
Thickness 0.30 mm	6450 0762
Thickness 0.40 mm	6450 0763
Thickness 0.50 mm	6450 0764



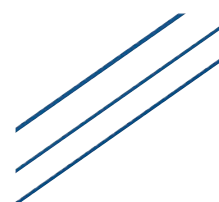
Wax sheets KF, coarsely marbled

Delivery form	Art. Code
15 sheets	
Thickness 0.35 mm	6450 0769
Thickness 0.40 mm	6450 0770
Thickness 0.50 mm	6450 0771
Thickness 0.60 mm	6450 0772



Wax profiles KF

Delivery form	Art. Code
25 g, Ø 0.8 mm	6450 0780
25 g, Ø 1.0 mm	6450 0781
35 g, Ø 1.2 mm	6450 0782



Wax sheets KF, finely veined

Delivery form	Art. Code
15 sheets	
Thickness 0.35 mm	6450 0765
Thickness 0.40 mm	6450 0766
Thickness 0.50 mm	6450 0767
Thickness 0.60 mm	6450 0768



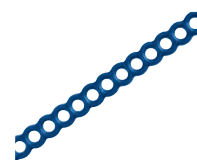
Lingual bars KF

Delivery form	Art. Code
65 g pack	
4.0 x 2 mm profiles	6450 0777
4.3 x 2.2 mm profiles	6450 0778



Perforated retention ribbon KF

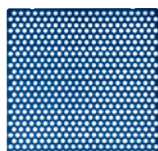
Delivery form	Art. Code
25 pieces	6460 0000



MODELLING

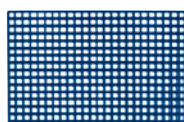
Round hole retentions KF

Delivery form	Art. Code
20 sheets	6460 1001



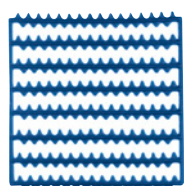
Retention meshes KF

Delivery form	Art. Code
20 sheets	6460 0003



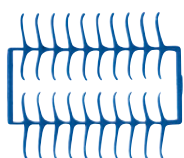
Ridge retentions KF

Delivery form	Art. Code
Pack of 10 cards with 8 pieces each	6460 0004



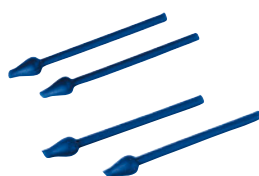
Premolar clasps KF

Delivery form	Art. Code
Pack of 10 cards with 20 pieces each	6460 0008



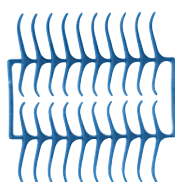
Reservoir sprues KF

Delivery form	Art. Code
50 piece pack	
Large: sprue Ø 2.9 mm, Head Ø 5.9 mm	6460 1000
Small: sprue Ø 2.5 mm, Head Ø 5.4 mm	6460 0999



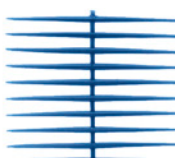
Molar clasps KF

Delivery form	Art. Code
Pack of 10 cards with 20 pieces each	6460 0007



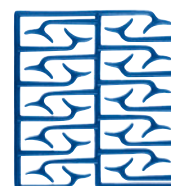
Ring clasps KF, straight

Delivery form	Art. Code
Pack of 10 cards with 20 pieces each	6460 0009



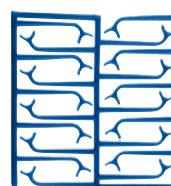
Bonyhard clasps KF, large

Delivery form	Art. Code
Pack of 10 cards with 20 pieces each	6460 0006



Bonyhard clasps KF, small

Delivery form	Art. Code
Pack of 10 cards with 20 pieces each	6460 0005



Adhesive liquid

Increases the adhesion of preformed wax patterns when applied to Heravest M/Moldavest master and Heravest M 2000/Moldavest master run investment materials

Delivery form	Art. Code
Brush applicator bottle 30 ml	6603 4522



INVESTMENT, CASTING, SURFACE TREATMENT

Cone former M

Delivery form	Art. Code
10 pieces	6450 0803



Crepe sleeve

For individual investment adjustment of investment models during manufacturing of casting moulds.

Delivery form	Art. Code
25 m in dispenser box	6450 0802



Herapol

Electrolytic glaze bath to obtain high lustre CoCr base denture castings.

Delivery form	Art. Code
3 x 0.5 l bottles in the shelf box	6450 0961



COCR BASE PARTIAL DENTURE ALLOYS

HERAENIUM CE

HERAENIUM EH

HERAENIUM NF

HERAENIUM LASER

The Heraenium alloys are highquality alloys for partial denture. They contain no nickel additives and the composition ensures high strength and excellent elasticity.

They have excellent casting properties and exhibit exceptional flowability and

mould filling capability. Heraenium Partial Denture Alloys are excelent for milling and polishing.

Heraenium alloys fulfill all requirements of EN ISO 22674 Standard and are free from Beryllium, Cadmium and Lead.

Heraenium CE

The classical partial denture alloy with optimal strength and elasticity, and years of clinical testing.

Advantages

- Excellent strength and elasticity
- Exceptional flowability and mould filling capability

Delivery form

1 kg pack

Art. Code

6460 0955



Heraenium EH

A highly developed partial denture alloy which is highly accurate in elasticity and rebound ability, in addition to workability.

Heraenium EH has staked its place at the cutting edge of cast partial denture.

Advantages

- Outstanding elastic properties
- High torsional resistance
- Optimal working and polishing qualities
- Very good laserable

Delivery form

1 kg pack

Art. Code

6460 0956



Heraenium NF

Partial denture alloy specially designed for delicate structures.

Compared to Heraenium CE and Heraenium EH, its special composition produces an increase of 15–20% in the 0.2% yield strength. This leads to a better option for developing delicate structures.

Advantages

- High level of hardness (360 HV10)
- Very high 0.2% yield strength (720 MPa)
- 6% elongation, leading for very good recovery

Delivery form

1 kg pack

Art. Code

6460 1179



CE 0197	Content in mass %								Density in g/cm³	Melting range		Casting temperature in °C	Hardness HV10	0.2% Yield-strength [MPa]	Elongation in %
	Co	Cr	Mo	Mn	Si	C	N	Ta		Solidus °C	Liquidus °C				
Partial Denture Alloy acc. to EN ISO 22674															
Heraenium CE	63.5	27.8	6.6	0.6	1.0	0.3	0.2	–	8.0	1330	1380	1530	380	580	4
Heraenium EH	63.5	28.0	6.5	0.6	1.0	0.15	0.25	–	8.0	1330	1380	1530	310	620	7
Heraenium NF	63.35	29.0	5.0	0.6	1.0	0.25	0.3	0.5	8.0	1330	1380	1530	360	720	6
Heraenium Laser	63.5	28.0	6.5	0.6	1.05	<0.05	0.3	–	8.0	1330	1380	1530	340	610	12

COCR BASE PARTIAL DENTURE ALLOYS

Heraenium Laser

Partial denture suitable for high elasticity and weldability.

Heraenium Laser exhibits high strength and exceptional recovery ability. Heraenium Laser also has outstanding elasticity, rebound ability, workability, and laser weldability.

Advantages

- High strength
- Very low carbon content
- Exceptional welding qualities with narrow gap widths.
- Beryllium, Cadmium and Lead free

Delivery form	Art. Code
1 kg pack	6600 8790



Laser/Phaser welding wire

Special carbonless CoCr base alloy wire.

A perfect welding additive for Heraenium alloys. For stress and crack free welds.

Technical data

Composition by mass %	Co 65.1 Cr 28.0 Mo 5.9 Mn 0.5 Si 0.5
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Delivery form	Art. Code
Ø 0.35 mm, role with a total length of approx. 200 cm	6605 4811
Ø 0.5 mm, pack with wire pieces, total length approx. 150 cm	6460 1149



8.1 GENERAL TERMS OF SALE AND DELIVERY

1 Scope of Application

1.1 All sales, deliveries and services (hereinafter collectively the “Services”) of Kulzer GmbH and its affiliated companies domiciled in Germany (“Kulzer”) are exclusively subject to the following General Terms of Sale and Delivery. Customers’ general terms and conditions of business which deviate from these General Terms of Sale and Delivery or from the law will not be accepted, and they will also not become part of a contract if Kulzer accepts or executes orders from the customer in awareness of the customer’s opposing or deviating terms and conditions of business.

2 Subject Matter and Scope of Services (Offers, Samples, Guarantees, Conclusion of Contracts)

2.1 All offers of Kulzer are nonbinding and without engagement unless specifically agreed otherwise. Contracts shall be deemed concluded only after Kulzer has issued a written order confirmation, effected delivery of the goods ordered or performed the Service.

Kulzer shall be generally under no obligation to verify the correctness of the information provided by the customer upon which Kulzer’s offer or order confirmation is based, and Kulzer shall also not be obligated to investigate if the execution of the customer’s order based on such information infringes any third-party property rights. The customer will be advised of all risks which are identified by Kulzer.

2.2 The data and information included in data sheets, brochures and other promotional and information material of Kulzer serve solely as a guideline and become a binding part of a contract only upon the express written consent of Kulzer.

2.3 Characteristics and properties of samples and specimens are only binding if expressly so agreed.

2.4 Information about the quality, condition and (shelf-) life of products shall be deemed to be guarantees only if expressly designated as such. The same applies to the assumption of a procurement risk.

2.5 Unless otherwise agreed in writing, Kulzer will deliver products within the tolerances admissible under the relevant German or European technical standards, in particular DIN, VDE, EN ISO or similar standards.

2.6 Technical changes which are required for manufacturing reasons, or which are necessary due to legislative changes, or which serve the product update and maintenance, shall be admissible if they are reasonable for the customer.

3 Delivery, Delivery Periods, Packaging, Passing of the Risk

3.1 The type and scope of Kulzer’s Services and the delivery periods are determined by the written order confirmation of Kulzer. Kulzer shall be entitled to the partial performance of Services if this is reasonable for the customer.

If the customer wishes to call off portions of an agreed total quantity for delivery in several partial deliveries, the customer shall spread such call-offs evenly over the delivery period. The call-off of more than 10 % of the total quantity of one partial delivery on one date is subject to the prior written consent of Kulzer.

3.2 The delivery period commences to run only after all issues which are essential for the performance of the contract have been clarified with the customer and after the customer has performed all essential acts incumbent on him which are required for the performance of the contract by Kulzer. In particular, the delivery period does not commence to run until Kulzer has received all information from the customer which is required to effect delivery, or until the customer has furnished proof that, if required, he has opened a letter of credit, effected prepayment or provided a security, as agreed in the contract. The delivery period will be interrupted by subsequent changes requested by the customer. After agreement about the desired changes has been achieved, the delivery period re-commences to run.

3.3 Acts of God, labor disputes, riots, governmental acts and similar circumstances beyond the control of Kulzer (force majeure) release Kulzer from its obligation to perform a contract for so long as and to the extent that the effects of such force majeure circumstances persist. This applies also if such force majeure circumstances occur to sub-suppliers of Kulzer or if they occur at a point in time at which Kulzer has already been in default. Kulzer will inform the customer of the commencement and of the end of such hindrances to the performance of the Services without delay.

3.4 The products of Kulzer are generally unpacked. If the customer desires packaging, the costs will be borne by the customer.

3.5 Kulzer delivers ‘ex factory’/‘ex works’ (Incoterms 2010). If Kulzer solely organizes the transport, the costs of dispatch and the costs of transport insurance will be borne by the customer.

3.6 The price risk (i.e. the risk of accidental loss or accidental deterioration) shall pass to the customer at that point in time at which the goods are placed at the customer’s disposal at the factory/works from which delivery is effected, even if Kulzer has accepted to perform additional services such as loading or transportation of the goods. If the performance of a Service is delayed for reasons within the customer’s responsibility, the risk shall pass to the customer upon receipt of a notification that the Service is ready to be performed. In such case, Kulzer will be permitted to invoice the goods to the customer as having been delivered, and to store the goods at the customer’s cost and risk. Upon request of the customer, Kulzer will insure these goods against theft and damage from breakage, transport, fire and water at the customer’s cost.

4 Prices, Payment, Default

4.1 The prices quoted by Kulzer are exclusive of the statutory value-added tax, outer packaging, shipping charges and insurance costs (‘ex works’, Incoterms 2010).

4.2 Invoices are due for payment immediately upon receipt and without any deductions. Cheques will be accepted on account of performance only. The customer agrees to the electronic transmission of the invoice.

4.3 Kulzer charges interest for default in payment at the rate of eight (8) percentage points above the applicable base rate p.a. (Section 247 of the German Civil Code (BGB)). The right to furnish proof of a higher or further damage caused by default remains reserved.

4.4 Kulzer shall not be obligated to perform the contract for so long as the customer fails to perform his own obligations according to contract, including his obligations from other contracts with Kulzer and, in particular, if the customer defaults in the timely payment of invoices due.

4.5 The customer may offset counterclaims or withhold payment based on such counterclaims only if such counterclaims are uncontested in writing or non-appealable.

4.6 If the customer is in default of payment or if there are circumstances which, when applying customary banking standards, justify doubts about the customer’s ability to pay, Kulzer will be entitled to perform outstanding Services only against payment in advance or subject to the provision of a security. In such case, Kulzer will be permitted to declare all of its claims against the customer immediately due for payment, irrespective of the term of any bills of exchange, and demand securities.

4.7 Subject to evidence of a higher damage, Kulzer will charge 2.50 € for the second and each further reasonable reminder.

4.8 If, despite a reasonable time limit, a Service which is ready for acceptance is not fully accepted or is accepted too late through no fault of Kulzer, Kulzer will place the goods in storage at the customer’s cost and risk. For such storage Kulzer will charge 0.5 % of the invoice amount for each month of the delay in acceptance.

5 Warrantly, Duties of the Customer regarding Claims for Defects by his own Customers, Liability and Damages

5.1 Slight deviations from the agreed or standard quality do not constitute a defect in a product or Service. General information on the use of a product or examples for the application of a product given by Kulzer in product brochures or other advertising media do not release the customer from a careful inspection of the delivered product for its fitness for the customer’s particular purpose of use. The customer’s special requests regarding the particular use of a product shall only be authoritative if Kulzer has confirmed to the customer in writing at the time of conclusion of the contract that the product delivered is fit for the customer’s intended purpose of use.

5.2 The customer shall notify Kulzer without delay of all claims for defects which are asserted by his own customers and which relate to Services of Kulzer, otherwise the customer’s claims for defects against Kulzer will be excluded. In addition, the customer shall preserve evidence in the requisite form and provide such evidence to Kulzer.

Kulzer may reclaim from the customer a product complained of as defective (including any existing supporting documents, samples and packing slips) for investigation of the defect. The customer’s failure to comply with this reasonable request will result in the exclusion of the customer’s claims for defects or incompleteness of Service. The same applies to any claims for defects which are asserted against the customer by his own customers and which relate to Services of Kulzer.

5.3 For defects in a product, Kulzer’s obligation to perform the contract shall, at its choice, consist of subsequent performance by remedy of the defect or delivery of a faultfree product. The customer will be entitled to cancel the contract or to reduce the purchase price in accordance with the statutory provisions only if the subsequent performance by Kulzer has failed twice or is unreasonable and the defect complained of is not merely a minor defect. Claims for damages are governed by the provisions in clause 5.6 hereof.

5.4 The compensation of any loss or damage is excluded if and to the extent that such loss or damage is caused by the improper use, modification, assembly, installation and/or operation of the products of Kulzer, or by defective instructions of the customer, and not by a fault on the part of Kulzer. The liability of Kulzer for defects in materials which are supplied by the customer and processed by Kulzer is excluded if such defects are caused by the characteristics and properties of the materials so supplied. If defects in the materials supplied by the customer should render these materials unusable during their processing by Kulzer, the customer will nevertheless be obligated to reimburse Kulzer for its processing expenditure.

5.5 Claims for material defects and defects of title become barred by the statute of limitations after twelve (12) months from the passing of the risk.

5.6 Kulzer will assume unlimited liability in cases where Kulzer has expressly assumed a guaranty/ warranty or a procurement risk, in the case of a culpable injury to the life, body or health of any person, for claims under the German Product Liability Act, and for other willful or grossly negligent breaches of duty by Kulzer. In the case of slight or ordinary negligence and damage to property or pecuniary losses caused thereby, Kulzer will assume liability only for its breach of essential contractual duties the performance of which is indispensable for the proper fulfillment of the contract and the performance of which the customer must be able to specifically rely upon; however, such liability of Kulzer is limited to the damage which is typical of the contract and which was foreseeable at the time of contracting. The liability of Kulzer for delay is limited to 0.5 % of the value of the Service in delay per each completed week of such delay, up to a maximum rate of 5 % of the said value. Any further liability for damages is excluded, irrespective of the legal nature of the claim asserted.

5.7 The foregoing limitations of liability apply on the merits and in terms of amount also to Kulzer's legal representatives, agents and employees and/or other persons in Kulzer's services.

6 Reservation of Title

6.1 Kulzer retains title to all products delivered until the customer has fully satisfied all of his payment obligations from the business relationship with Kulzer. This applies also if payments are made in satisfaction of specially designated claims, including claims from cheques and bills of exchange, from open bills or current account.

6.2 The customer shall have the right to resell, process, mix, blend or combine the goods subject to reservation of title with other items during his ordinary course of business until revocation by Kulzer, which revocation may be declared at any time and without giving reasons. A resale of the goods subject to reservation of title within the meaning herein defined extends also to the installation of such goods in ground and buildings, or their installation in facilities connected to buildings, or their use for the performance of other contracts.

6.3 The processing or transformation of the goods subject to reservation of title is made for Kulzer as the manufacturer within the meaning defined in Section 950 of the German Civil Code (BGB) without resulting in any obligation on the part of Kulzer. The processed or transformed goods shall constitute goods subject to the reservation of title within the meaning of these General Terms of Sale and Delivery. If the goods subject to reservation of title are processed or inseparably blended/combined with other items which are not owned by Kulzer, Kulzer acquires a co-ownership of the resulting new item in the ratio of the invoice value of the goods subject to reservation of title and the replacement value of the other items used at the time of such processing or blending/ combining. If the goods subject to reservation of title are combined or inseparably blended with other items not owned by Kulzer into a uniform item which is to be regarded as main item, the customer hereby assigns to Kulzer a share of co-ownership which is proportionate to the customer's ownership of the main item. Kulzer hereby accepts this assignment. The customer will hold the property so created on behalf of Kulzer free of charge.

6.4 The customer shall insure the goods subject to reservation of title at his own cost against all standard risks, in particular against fire, burglary and water hazards, handle these goods with care and store them properly.

6.5 In the event of a resale of the goods subject to reservation of title by the customer, the customer hereby immediately assigns to Kulzer the purchase price claims against his own customers arising from such resale. If the customer resells the goods subject to reservation of title together with other items not delivered by Kulzer, the foregoing assignment applies only in the amount of the value of the goods subject to reservation of title which is specified in the invoice of Kulzer. In the case of a resale of items in which Kulzer has a co-ownership pursuant to clause 6.3, such assignment applies in the amount of Kulzer's co-ownership. The assigned claims serve as security in the same scope as the goods subject to reservation of title. If an assigned claim is included in a current account, the customer hereby immediately assigns to Kulzer a balance which corresponds to such claim from current account. Kulzer hereby accepts the said assignment of claims.

6.6 The customer shall have the right to collect, within his ordinary course of business, the claims assigned to him by Kulzer until revocation by Kulzer, which revocation may be declared at any time and for no specific reason; this collection right becomes automatically extinct without revocation as soon as the customer defaults in any of his payments to Kulzer. If payment is made by direct debiting, the customer will ensure by prior agreement with his bank that the amounts received are exempt from the bank's lien and that he is at all times able to meet his

obligation to transfer his proceeds to Kulzer. At the request of Kulzer, the customer will inform his own customers of the assignment of future claims to Kulzer and provide Kulzer with any and all information and documentation which is required for the assertion of these claims.

6.7 If the aggregate value of the securities existing for Kulzer exceeds the claims of Kulzer by more than 10%, Kulzer will release additional securities of its own choice at the request of the customer.

6.8 Above and beyond the foregoing, the customer is not entitled to make any dispositions in respect of the goods subject to reservation of title (liens, pledging of security interests or other assignments in respect of the claims specified in clause 6.5. In the event of an attachment or seizure of the goods subject to reservation of title, the customer will point out that these goods are the property of Kulzer and will notify Kulzer of such attachment or seizure without delay, also in writing.

6.9 If the customer is in default of payment and a grace period fixed by Kulzer has elapsed without payment being effected, Kulzer is entitled to take back the goods subject to reservation of title also if Kulzer has not rescinded the contract.

7 Weight Accounts for Precious Metals

7.1 In the commercial intercourse involving precious metals, Kulzer maintains weight accounts. The precious metal stocks of the individual account holders are not stored separately. All account holders together form a community of proprietors which is managed by Kulzer.

7.2 Each account holder acquires by accession a co-ownership of the total existing stock of precious metals, which is expressed in and limited to the troy weight of each precious metal credited to the account holder's account. In case of a purchase or sale of precious metals, the passing of title is effected by a credit or debit entry in the respective weight account.

8 Choice of Law, Place of Performance, Place of Jurisdiction

8.1 These General Terms of Delivery and any agreement between Kulzer and the customer shall be governed by and construed in accordance with the law of Germany, without giving effect to its conflict of law provisions and without giving effect to the UN Convention on Contracts for the International Sale of Goods of 11 April 1980 (CISG).


8.2 The place of performance for the Services of Kulzer is the factory/works from which delivery is effected; the place of performance for the customer's payments is Kulzer's registered place of business.

8.3 The place of jurisdiction, also for actions on cheques and bills of exchange, is the registered place of business of Kulzer. However, Kulzer shall be entitled to recourse in any court having jurisdiction as to the respective legal action under the laws of Germany or under the laws of the country in which the customer has his registered place of business.

NOTES

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