

# thermopress

The thermopress system



More quality of life  
with metal-free restorations

Information Brochure

bredent 35 years of dental innovation



## thermopress 400



Injection moulding unit for thermal resins  
up to 400° C – biocompatible and reliable





## Company and History

bredent, a company which has been manufacturing products for dental laboratories and dentists on a floorspace of 9000 m<sup>2</sup> for more than 35 years, offers a comprehensive and closed injection moulding system for dental laboratories.

Processing of thermoplastic resins is nothing new in dental techniques. The first piston injection moulding machine was used in dental laboratories already in 1958.

In 2001 bredent presented the thermopress injection moulding system for the first time in Cologne during the IDS and continued their development work until today. The consequent development efforts have finally paid off.

Today bredent presents a compact injection molding system that is independent of external pressure sources and perfectly suited to produce accurate and homogeneous restorations.

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## More quality of life with metal-free restorations



The continuously increasing number of chemicals, additives in food and environmental pollutants represent a growing burden to humans. The expansion of wireless communication networks (mobile phone) creates more powerful, electromagnetic high-frequency fields, which represent an additional danger to sensitive persons. That is why more and more persons ask for compatible and metal-free materials for their dental restorations. Today dental technicians and dentists are able to offer metal-free solutions that used to be unimaginable just a few years ago.

In cooperation with experienced dentists and dental technicians and based on suggestions of customers, bredent was able to compile a comprehensive range of products in the field of „metal-free dental restorations“ which includes high-quality materials that are perfectly matched with the requirements of allergic persons. bredent's injection moulding system combines biocompatible materials with esthetics and proper function and offers perfect solutions for new restorations.



## What is the thermopress 400 injection moulding system?

The injection moulding technique or the proper term of injection moulding describes a procedure in which a heated high-performance plastic (resin) material is injected into a hollow mould under very high pressure. Previously this technique could only be employed in combination with very large industrial machines. In 1958 the first attempt was made to use the industrial injection moulding technique for the fabrication of dentures. Consequent and continuous development permitted to launch a very powerful injection moulding machine into the market. breident succeeded in developing an injection moulding system for dental laboratories, which can be operated without any external pressure source.

## What are the advantages for the patient?

The large number of medical materials which are used for the fabrication and processing of dental restorations frequently cause allergies in sensitive persons.

The materials used in the injection moulding technique – so-called thermoplastic resins – enable dental technicians to fabricate restorations for sensitive persons without the use of chemical additives or catalysts. This way dental laboratories are given an option which puts them in a very strong position in view of the considerable increase in allergies.

## Why metal-free?

In restorative dentistry metal alloys such as gold, CrCo and amalgam rank among the most important materials because of their favorable material characteristics. Thermal effects, taste of metal and allergic reactions caused by dental alloys in the mouth were considered to be less significant.

However, the high increase in allergies, incompatibilities and more and more frequently occurring symptoms of metal incompatibilities led to a change in thinking as far as the selection of dental materials in restorative dentistry is concerned.

## The unit!

The thermopress 400 injection moulding system allows careful processing of bio-compatible materials to obtain high-quality, metal-free restorations. As a result, unesthetic metal retention elements (attachments) do no longer need to be integrated into the restorations.

New control modules in the unit allow the use of the thermopress investment ring system – a system that enables dental technicians to invest crowns and bridges in the familiar way and to fabricate crowns and bridges in the thermopress 400 injection molding units in a simple and fast manner.

## We help you to be successful!

We cordially invite you to our modernly equipped and furnished training facilities in Senden close to Ulm.



# thermopress

Bio XS  
Bio Dentaplast  
bre.crystal  
bre.flex  
bre.dentan



**Restorations for sensitive persons!**

**bre.crystal**  
**bre.flex**  
**Bio Dentaplast**  
**bre.dentan**  
**Bio XS**

are advanced and biocompatibility-tested materials for the fabrication of metal-free restorations.

The thermopress injection moulding system allows careful processing of biocompatible materials to obtain high-quality, metal-free dental restorations. As a result, unesthetic metal retention elements (attachments) do no longer need to be integrated into the restorations.

Studies have shown that – apart from the aspect of the elimination of allergies – patients mainly appreciate the esthetic appearance and the extraordinary, high comfort of wearing.



## Five advanced thermoplastic resins provide a wide range of indications

### bre.crystal

#### Partial and full dentures

bre.crystal is a denture base material which will enthuse you and your patients:

- The material is processed without the use of monomers or catalysts that may cause allergies
- Thanks to special processing, highly dense bases are obtained which can be easily and quickly polished to high luster.
- The material density avoids water absorption and reduces discoloration



### bre.flex

#### Partial prosthetics

Almost neglected some years ago – now in great demand – the flexible partial denture.

bre.flex is a monomer-free denture base material for unbreakable and flexible partial dentures.

Safe processing in the thermopress 400 injection

moulding units allows the fabrication of delicate partial and temporary dentures.

Offer your patients the benefits of materials which are highly biocompatible.



### Bio Dentaplast

#### Metal-free CoCr clasp restorations

Why use metal if tooth-colored restorations can be fabricated!

- Metal-free, tooth-colored clasps and retention elements
- Unbreakable long-term temporaries without complex reinforcing elements
- Extremely thin, opaque occlusal appliances



### bre.dentan

#### Crowns and bridges

The material for tooth-colored crowns and bridges

- resistant to fracture
- highly accurate
- free from residual monomer



### Bio XS

#### Crowns and bridges

By introducing BioXS in 2005, bredent has set new standards in the field of metal-free restorations.

The advanced material Bio XS

is a high-performance, semi-crystalline thermoplastic resin with convincing material properties:

- Wall thicknesses of crown of up to 0.3 mm
- Bonding strength values in conjunction with composites and veneers of more than 18 Mpa\*

(\*Bond strength test performed at the University of Jena, 2007)



# bre.crystal



free from residual monomer  
resistant to fracture  
highly accurate  
biocompatible



Our denture material that keeps its promises!

More than 25 years of use and healthy and satisfied „bre.crystal wearers“ confirm the unique properties of bre.crystal.





## thermopress 400 in total prosthetics

Already in 1958 the first formula for the high-performance thermal paste bre.crystal (Polyan) was developed in close cooperation between industrial resin manufacturers and experienced dentists and dental technicians.

bre.crystal can be easily and safely processed in the specially developed thermopress 400 injection moulding system.

The composition of the material which has been matched to sensitive persons fulfills the current demands of your patients. Closely linked fiber particles form a highly dense cross-linked denture base material with a resistance to fracture that is ten times higher than that of conventional materials.

bre.crystal is a transparent, glass-like thermoplastic resin based on polymethyl methacrylate. It does not contain benzyl peroxide or iron oxide, exhibits perfect biocompatibility and minimizes the occurrence of allergic reactions.

### Indication range

Denture base material for partial and full dentures

Base material for hard, crystal-clear occlusal appliances

### Contraindication

Clasps, attachment elements, telescopes

## Technical data – bre.crystal

Based on DIN 1567:1999	bre.crystal	Comparative values for heat-curing resin
Modulus of elasticity:	3200 MPa	2598 MPa
Flexural strength (Value required by standard: 65 MPa):	85 MPa	74 MPa
Residual monomer content:	0.2 %	1.0 – 6.0 %
Water absorption:	0.35 %	5.97 µg/mm <sup>3</sup>
Polymerization time:	2 – 3 min.	30 – 60 min.
Polishing:	With traditional polishing materials	With traditional polishing materials
Repairability:	Powder / liquid on PMMA base Wipo-Dur Rebasing	Powder / liquid
Processing parameters:	thermopress 400 injection moulding unit 260° C	Mixing procedure

### Bonding

To ensure reliable bonding to acrylic teeth, we recommend to roughen the surface and to use the Haftconnector (bonding agent).

### Repairable / Extendable

The use of the Wipo-Dur repair material (self-curing resin) allows the easy and quick repair of bre.crystal. For high-quality extension / relining we recommend rebasing with bre.crystal.

### Colors



transparent



pink 1



pink 2



pink 3



pink-veined

#### Literature on bre.crystal

Sensitization test: Maximization test according to Magnusson and Klingman in accordance with ISO 10993-10; Project No.: 010915-30/3 bre.crystal test plates (Polyan) Medical Device Services Report No.: 207050108  
Result: No reactions whatsoever could be detected in any of the test animals.  
21.06.2001

„Überprüfung moderner Prothesenbasiskunststoffe nach der ISO 1567:1999“  
Dr. Ernst Ulrich Rosenbauer, University of Cologne Prof. Niedermeier

„Prothesen aus Thermoplast, Spritzgussverfahren im Kartuschensystem“  
Dr. Karl Wirz; Womrath; published in Dental-Labor in June 1993

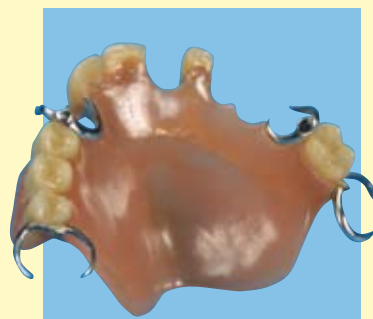
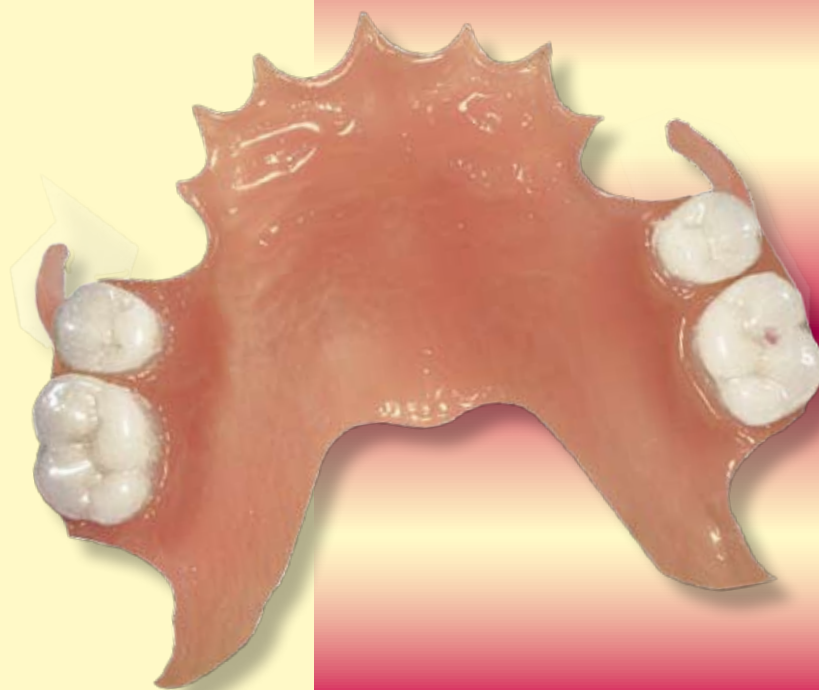
„Die verschiedenen Prothesenherstellungsverfahren unter besonderer Berücksichtigung der thermoplastischen Methode“; Prof. Marx, University of Mainz; Special print «der freie Zahnarzt»; Edition 2/1983

## Ordering information sheet – bre.crystal

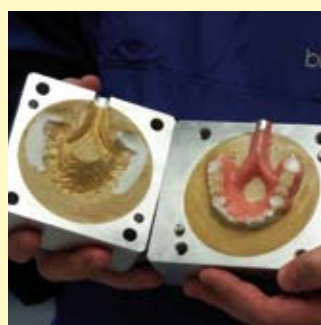
Product	REF	Quantity	Color
bre.crystal denture base material	540 OP32 4	Set 20 x 24 g	crystal-clear
bre.crystal denture base material	540 OP33 0	Set 20 x 30 g	crystal-clear
bre.crystal denture base material	540 OP30 5	1 x 500 g	crystal-clear
bre.crystal allergy test plate	992 503P 2	1 piece	crystal-clear
bre.crystal denture base material	540 OP12 4	Set 20 x 24 g	pink 1
bre.crystal denture base material	540 OP13 0	Set 20 x 30 g	pink 1
bre.crystal denture base material	540 OP10 5	1 x 500 g	pink 1
bre.crystal allergy test plate	992 503P 1	1 piece	pink 1
bre.crystal denture base material	540 OP22 4	Set 20 x 24 g	pink 2
bre.crystal denture base material	540 OP23 0	Set 20 x 30 g	pink 2
bre.crystal denture base material	540 OP20 5	1 x 500 g	pink 2
bre.crystal allergy test plate	992 503P 4	1 piece	pink 2
bre.crystal denture base material	540 OP42 4	Set 20 x 24 g	pink 3
bre.crystal denture base material	540 OP43 0	Set 20 x 30 g	pink 3
bre.crystal denture base material	540 OP40 5	1 x 500 g	pink 3
bre.crystal allergy test plate	992 503P 5	1 piece	pink 3
bre.crystal denture base material	540 OP02 4	Set 20 x 24 g	pink veined
bre.crystal denture base material	540 OP03 0	Set 20 x 30 g	pink veined
bre.crystal denture base material	540 OP00 5	1 x 500 g	pink veined
bre.crystal allergy test plate	992 503P 0	1 piece	pink veined

## Accessories – bre.crystal

Product	REF	Quantity	Indication
Thixo-Rock class IV stone	570 0005 1	5 x 2 kg	Model fabrication, for investing in the ring
Acrylic Sep resin-stone separating liquid bre.crystal against plaster	520 0029 1	250 ml	Separating
Acrylic Sep resin-stone separating liquid bre.crystal-stone	520 0029 4	750 ml	Separating
Haftconnector bre.crystal - acrylic teeth	520 0029 2	50 ml	Bonding
Dentasil tooth protection silicone Shore 65	520 0029 6	2 x 50 ml	Protects the teeth in the ring
Resin sprue wax 10 mm	430 0741 0	275 g	Sprues
Resin sprue wax 7 mm	430 0172 0	220 g	Sprues
Wipo-Dur pink 1 liquid	540 ORF0 5	500 ml	Repair material bre.crystal pink 1
Wipo-Dur pink 1 powder	540 ORP0 5	500 g	Repair material bre.crystal pink
Diamond grinder Vb2 at the acrylic teeth	340 0083 0	1 piece	Circumferential retention
Set of Diacryl grinders	340 0107 0	Set, 6 parts	For easier finishing
Resin polishing set	350 0084 0	Set	Pre- and high luster polishing
Plaster insulating liquid	540 0013 5	750 ml	Insulates plaster against plaster

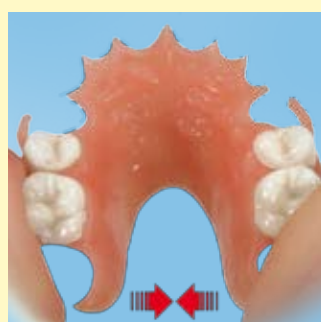


**flexible**  
**unbreakable**  
**highly biocompatible**



bre.flex is a monomer-free denture base material for the fabrication of unbreakable flexible partial restorations. The color pigments used for bre.flex do not contain any metal oxides and comply with the requirements for dental products (DIN EN ISO 10993).

The flowable bre.flex thermoplastic resin exhibits outstanding flow properties. Slender and thin wax elements with a layer thickness of only 0.5 mm can be safely injected.



## bre.flex 2nd edition for partial dentures



### Why bre.flex 2nd edition for partial dentures?

#### Advantages

No metal clasps – but gingiva-colored (pink) clasps that blend with the natural teeth.

Better shade stability than other flexible resins. Extremely flexible. Can be extended and relined. Plasticity is retained and embrittlement is avoided. Comfortable, resistant and durable.

#### Indication range

Removable partial restoration with a highly esthetic appearance, which fulfils all requirements on proper function and wearing comfort.

Ideal for patients who decided to receive a removeable restoration but do not want metal clasps.

Perfectly suited for patients who are allergic to monomer. Excellent temporary during the healing phase of implant-supported restorations. Almost invisible flexible partial denture – without metal clasps. Can be used in combination with metal frameworks or precision attachments.

#### Contraindication

Full dentures, crowns and bridges, attachments



## Technical data – bre.flex 2nd edition

	bre.flex 2nd edition
Flexural strength (value required by standard: 65 MPa):	90 MPa
Residual monomer content:	0 %
Water absorption 24h at 23° C:	1.1 %
Density / specific weight at 23° C:	1.02 g/m <sup>3</sup>
Polymerization time:	90 sec. (in the thermopress 400 unit)
Polishing:	Can be easily polished with conventional resin polishing materials
Repairability:	By rebasing with bre.flex 2nd edition, a flexible partial denture can be relined or extended.

## Technical data – bre.flex

	bre.flex
Flexural strength (value required by standard: 65 MPa):	115 MPa
Residual monomer content:	0 %
Water absorption 24H at 23° C:	2.5 – 3.5 %
Density / specific weight at 23° C:	1.14 g/m <sup>3</sup>
Polymerization time:	90 sec. (in the thermopress 400 unit)
Polishing:	Acrylic polishing material at low speed
Repairability:	Rebasing

## Bonding

A mechanical retention is required to ensure reliable bonding to acrylic teeth. bre.flex 2nd edition will not enter into a chemical bond with the acrylic tooth. We recommend to prepare a retention hole with a diameter of 0.8 – 1.5 mm from the mesial to the distal direction.

## Repairable / Extendable

bre.flex 2nd edition can be extended or repaired by rebasing.

## Colors – bre.flex 2nd edition



crystal-clear



pink 2



pink veined



pink 4

### Literature on bre.flex

Sensitization test: Maximization test according to Magnusson and Klingman in accordance with ISO 10993-10; test plates 010915-30/02 bre.flex pink (Flexiplast pink)  
Result: No reactions whatsoever could be detected in any of the test animals.  
12.06.2001

Cytotoxicity test, L929 proliferation

in accordance with DIN EN ISO 10993-5, -12, ISO 9363-1, LM SOP 4-06-01

Test plates: bre.flex pink (Flexiplast pink)

Result: After continuous exposure for 24 hours, no substance with a cell-toxic effect could be detected in the denture base material bre.flex (Flexiplast). The material does not reveal any cytotoxicity.

## Ordering information sheet – bre.flex

Product	REF	Quantity	Color
bre.flex partial dentures	540 0F11 6	Set 20 x 16 g	translucent
bre.flex partial dentures	540 0F12 4	Set 20 x 24 g	translucent
bre.flex partial dentures	540 0F10 5	1 x 500 g	translucent
bre.flex allergy test plate	992 503F 1	1 piece	translucent
bre.flex partial dentures	540 0F01 6	Set 20 x 16 g	pink 1
bre.flex partial dentures	540 0F02 4	Set 20 x 24 g	pink 1
bre.flex partial dentures	540 0F00 5	1 x 500 g	pink 1
bre.flex allergy test plate	992 503F 0	1 piece	pink 1
bre.flex partial dentures	540 0F41 6	Set 20 x 16 g	pink 2
bre.flex partial dentures	540 0F42 4	Set 20 x 24 g	pink 2
bre.flex partial dentures	540 0F40 5	1 x 500 g	pink 2
bre.flex allergy test plate	992 503F 3	1 piece	pink 2
bre.flex partial dentures	540 0F31 6	Set 20 x 16 g	pink 3
bre.flex partial dentures	540 0F32 4	Set 20 x 24 g	pink 3
bre.flex partial dentures	540 0F30 5	1 x 500 g	pink 3
bre.flex allergy test plate	992 503F 4	1 piece	pink 3

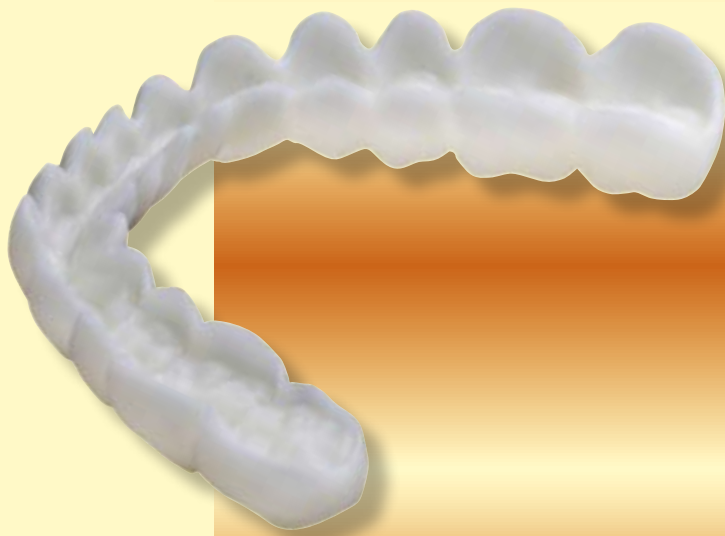
## Ordering information sheet – bre.flex 2nd edition

bre.flex 2nd edition partial dentures	540 0F81 6	Set 20 x 16 g	clear
bre.flex 2nd edition partial dentures	540 0F82 4	Set 20 x 24 g	clear
bre.flex 2nd edition partial dentures	540 0F80 5	1 x 500 g	clear
bre.flex 2nd edition partial dentures	540 0F61 6	Set 20 x 16 g	pink veined
bre.flex 2nd edition partial dentures	540 0F62 4	Set 20 x 24 g	pink veined
bre.flex 2nd edition partial dentures	540 0F60 5	1 x 500 g	pink veined
bre.flex 2nd edition partial dentures	540 0F51 6	Set 20 x 16 g	pink 2
bre.flex 2nd edition partial dentures	540 0F52 4	Set 20 x 24 g	pink 2
bre.flex 2nd edition partial dentures	540 0F50 5	Pulk 1 x 500 g	pink 2

## Accessories – bre.flex

Product	REF	Quantity	Indication
Expando-Rock, expansion stone	570 0ER0 5	Bucket, 5 kg	Model fabrication
Thixo-Rock class IV stone	570 0005 1	5 x 2 kg	Investing in the ring
Plaster insulating liquid	540 0013 5	750 ml	Insulates plaster against plaster
Resin sprue wax 10 mm	430 0741 0	275 g	Spruing
Resin sprue wax 7 mm	430 0172 0	220 g	Spruing
Diatit-Multidrill Ø 1.5	330 0073 0	1 piece	Retentions at the acrylic teeth
Silicone bur	S 263 QG 60	1 piece	Processing of bre.flex
Diacryl grinder, pointed	340 0102 0	1 piece	Processing of bre.flex
UV varnish, green	540 0100 5	1 x 20 ml	Separates plaster against bre.flex

# Bio Dentaplast



Bio Dentaplast



- long-term temporaries
- tooth-colored clasps
- metal-free restorations
- outstanding material properties



- highly accurate
- protects the enamel
- no metallic taste



# What is Bio Dentaplast?

Bio Dentaplast is a technopolymer material based on polyoxymethylene. Thanks to its high crystallinity, Bio Dentaplast features excellent material properties (the higher the crystallinity in a resin, the harder the resin will be).

The exceptional physiological behavior and the wide range of mechanical characteristics permit the use in numerous areas of dental prosthetics.



Modelled in Protek wax



Produced in the thermopress 400 injection moulding unit



Cooled down for 20 minutes



Esthetic, metal-free, pleasant to wear



Extremely light and almost invisible



Large number of indications

## Clinical indications

- Esthetic clasps
- Postoperative spacers or so-called clamp dentures
- Partial dentures, metal-free clasp restorations
- Supporting structures, frameworks for temporaries
- Tooth-colored appliances (splints)

## Contraindication

- Denture bases
- Implant abutments
- Root posts, crowns and bridges (cemented)

## Mechanical and chemical properties

	Bio Dentaplast
E-modulus / flexural modulus (ISO 178):	2800 MPa
Flexural strength (value required by standard: 65 MPa):	68 MPa
Residual monomer content:	0 %
Water absorption 24H at 23° C:	0.20 %
Density / specific weight at 23° C:	1.40 g/m <sup>3</sup>
Polymerization time under pressure in the thermopress 400 unit:	120 sec.
Processing temperature:	190 – 230° C
Max. temperature stress – permanent:	< 100° C
Polishing:	Acrylic polishing material at low speed
Repairability:	Small cavities can be repaired with the Thermopen
Chemical bonding:	Adhesive based on ethyl-2-cyanoacrylate bredent recommends the matrix adhesive REF 540 0103 2, 540 0103 1

Bio Dentaplast is a technopolymer material based on polyoxymethylene. Thanks to its high crystallinity, Bio Dentaplast features excellent material properties (the higher the crystallinity in a resin, the harder the resin will be).

The exceptional physiological behavior and the wide range of mechanical characteristics permit the use in numerous areas of dental prosthetics.

### Colors



Tooth shade  
Dentin A1



Tooth shade  
Dentin A2



Tooth shade  
Dentin A3



Tooth shade  
Dentin B2



Tooth shade  
Dentin B3

The properties of Bio Dentaplast are only guaranteed if the material is processed using an injection moulding unit (thermopress 400, bredent) which allows constant control of the melting temperature, the appropriate softening times, injection and subsequent cooling under constant pressure.

### References

Resins based on polyoxymethylene have been used in dental techniques since 1986. The Bio Dentaplast material has been successfully used in restorative dentistry for clasps on removable dentures, partial dentures, removable bridges, postoperative spacers and supporting structures for temporaries and attachment matrixes (vs 3, bredent).

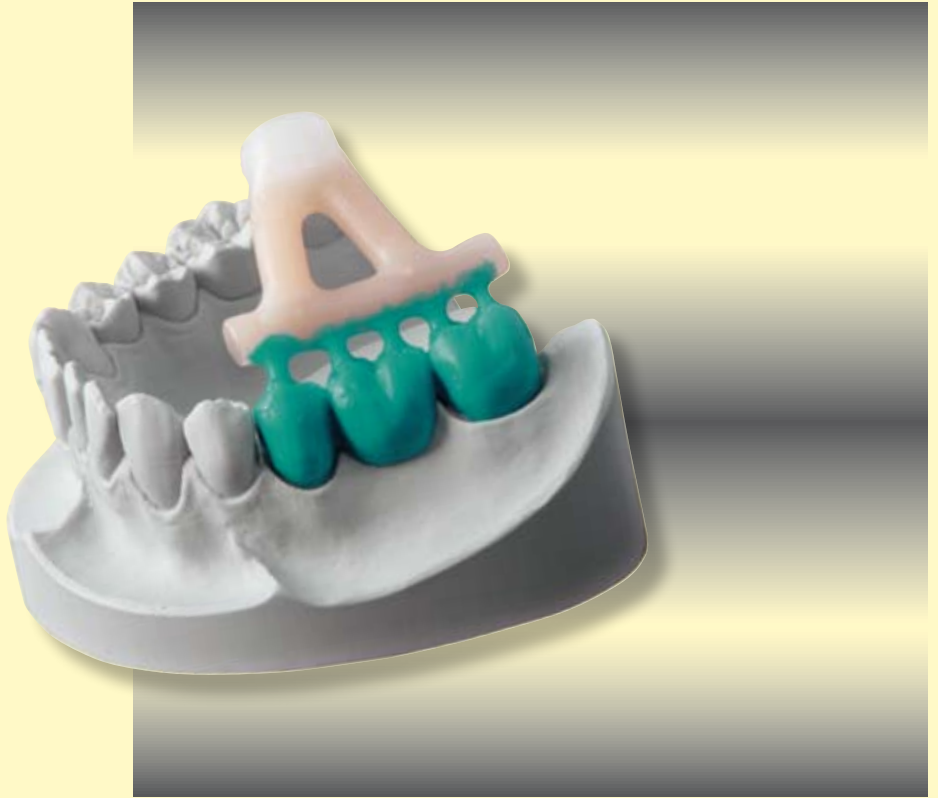
During the past ten years more than 50 reports / special articles have been published on processing of polyoxymethylene in dentistry.

## Ordering information sheet – Bio Dentaplast

Product	REF	Quantity	Shade
Bio Dentaplast metal-free clasp restorations, C & B	540 BA11 6	Set 20 x 16 g	A1
Bio Dentaplast metal-free clasp restorations, C & B	540 BA12 0	Set 20 x 20 g	A1
Bio Dentaplast metal-free clasp restorations, C & B	540 BA10 5	1 x 500 g	A1
Bio Dentaplast allergy test plate	992 50BA 1	1 piece	A1
Bio Dentaplast metal-free clasp restorations, C & B	540 BA21 6	Set 20 x 16 g	A2
Bio Dentaplast metal-free clasp restorations, C & B	540 BA22 0	Set 20 x 20 g	A2
Bio Dentaplast metal-free clasp restorations, C & B	540 BA20 5	1 x 500 g	A2
Bio Dentaplast allergy test plate	992 50BA 2	1 piece	A2
Bio Dentaplast metal-free clasp restorations, C & B	540 BA31 6	Set 20 x 16 g	A3
Bio Dentaplast metal-free clasp restorations, C & B	540 BA32 0	Set 20 x 20 g	A3
Bio Dentaplast metal-free clasp restorations, C & B	540 BA30 5	1 x 500 g	A3
Bio Dentaplast allergy test plate	992 50BA 3	1 piece	A3
Bio Dentaplast metal-free clasp restorations, C & B	540 BB21 6	Set 20 x 16 g	B2
Bio Dentaplast metal-free clasp restorations, C & B	540 BB22 0	Set 20 x 20 g	B2
Bio Dentaplast metal-free clasp restorations, C & B	540 BB20 5	1 x 500 g	B2
Bio Dentaplast allergy test plate	992 50BB 2	1 piece	B2
Bio Dentaplast metal-free clasp restorations, C & B	540 BB31 6	Set 20 x 16 g	B3
Bio Dentaplast metal-free clasp restorations, C & B	540 BB32 0	Set 20 x 20 g	B3
Bio Dentaplast metal-free clasp restorations, C & B	540 BB30 5	1 x 500 g	B3
Bio Dentaplast allergy test plate	992 50BB 3	1 piece	B3

## Accessories – Bio Dentaplast

Product	REF	Quantity	Indication
Expando-Rock, expansion stone	570 0ER0 5	Set	Model fabrication
Thixo-Rock class IV stone	570 0005 1	5 x 2 kg	Investing in the ring
Plaster insulating liquid	540 0013 5	750 ml	Insulates plaster against plaster
Biotec wax patterns	430 0804 0	250 g	Wax patterns for Bio Dentaplast
Premolar clasp, bent	430 0748 5	10 Tafeln	Clasp patterns for Bio Dentaplast
Comb-shaped retainers	430 0157 5	25 pieces	Wax patterns for Bio Dentaplast
Lingual bar patterns 2.45 x 4.3 mm	430 012A 0	30 pieces	Wax patterns for Bio Dentaplast
Wax sheet, stippled, medium, 0,6 mm	430 0162 1	15 pieces	Wax patterns for Bio Dentaplast
UV varnish, green	540 0100 5	1 x 20 ml	Isolierung Gips gegen Bio Dentaplast
Giflex-TR diamond disc	340 0002 0	37 mm	Controlled cutting off the sprues
Diacryl grinding instrument, papilla-shaped	340 0105 0	1 piece	Allows accurate finishing
Abraso-Gum Acryl assortment	350 0099 2	Set of 5 pieces	The acrylic polishers (coarse, medium, fine) are abrasive and smoothen in a single processing step
Star brushes, goat hair, white, 19 mm	520 0015 1	15 pieces	Prepolishing
Abraso-Starglanz	520 0016 3	2 x 50 ml	High luster polishing
Dentaclean denture cleaning agent	520 0099 2	1000 ml	For cleaning Bio Dentaplast



resistant to fracture  
accurate fit  
free from residual monomer





# Crowns & bridge made of bre.dentan

bre.dentan is a modified thermoplastic resin that is processed with the thermopress 400 injection molding system - without any monomer and sensitizing setting catalyst - to obtain translucent crowns and bridges. A content of residual monomer of less than 0.3 % reduces irritation of the mucosa.

- high resistance to fracture
- high material density allows simple polishing and reduces accumulation of plaque



The wax model is modelled in Biotec wax.



The model is invested in investment material using the thermopress 400 investment ring system.



Perfectly matched components provide additional reliability.



The use of the thermopress 400 injection moulding system enables you to produce products featuring high precision and manufacturing quality and ensures ongoing success in the market.

## Indication range

Crowns and bridges, rigid, tooth-colored occlusal appliances

## Contraindication

Clasps, attachment elements, telescopes

## Ordering information sheet – bre.dentan

Product	REF	Quantity	Shade
bre.dentan crowns and bridges	540 ODA1 6	Set 20 x 16 g	Dentin A
bre.dentan crowns and bridges	540 ODB1 6	Set 20 x 16 g	Dentin B
bre.dentan crowns and bridges	540 ODC1 6	Set 20 x 16 g	Dentin C
bre.dentan allergy test plate	992 503D A	1 piece	Dentin A
bre.dentan allergy test plate	992 503D B	1 piece	Dentin B
bre.dentan allergy test plate	992 503D C	1 piece	Dentin C

## Accessories – bre.dentan

Product	REF	Quantity	Indication
Biotec modelling wax, green	510 0061 1	60 g	Modelling
Wax casting bar, bent 4 mm	430 084B 4	50 pieces	Spruing of the wax model
thermopress 400 investment ring system 1 base former, stainless steel 1 metal sleeve 1 spacer, aluminium 1 silicone sleeve, for size 6 1 plastic block	360 0123 0	Set, 5 parts	Ring system (size 6) for investing
Brevest Rapid 1 investment material 20 bags 200 g each 1 x 100 ml Bresol R 1 graduated cylinder 60 ml	570 0002 5	Set, 2 parts	Investing the wax objects in the ring system
Aurogum Silicone polisher Lens 4 x 22 mm	PLE G221 2	12 pieces	Prepolishing with rubber polishers
Quick-Mandrell size 2	360 0115 3	10 pieces	To accommodate the polishers
Abraso-Fix round brushes	350 0075 2	8 pieces	For prepolishing bre.dentan

## More quality of life with metal-free dental restorations



The continuously growing number of chemicals, additives in food and environmental pollutants represent a growing burden to humans. The expansion of wireless communication networks (mobile phone) creates more powerful, electromagnetic high-frequency fields, which represent an additional danger to sensitive persons.

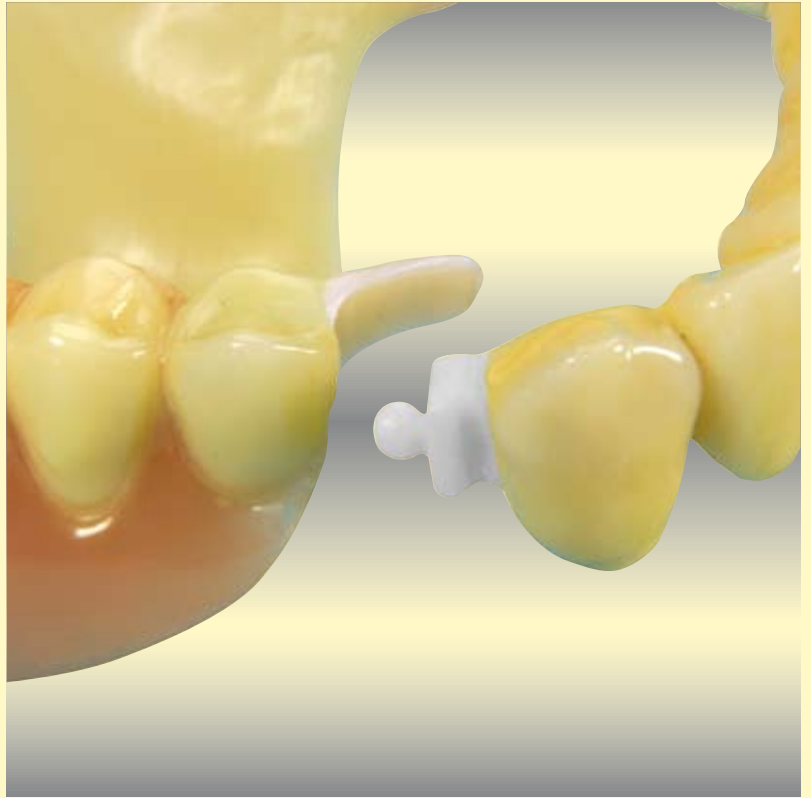
That is why more and more persons ask for compatible and metal-free materials for their dental restorations. Today dental technicians and dentists are able to offer metal-free solutions that used to be unimaginable just a few years ago.

In cooperation with experienced dentists and dental technicians and based on suggestions of customers, bredent was able to compile a comprehensive range of products in the field of „metal-free dental restorations“ which includes high-quality materials that are perfectly matched with the requirements of allergic persons.

bredent's injection molding system combines biocompatible materials with esthetics and proper function and offers perfect solutions for new restorations.



# BioXS



extremely stable  
metal-free  
ultra-light



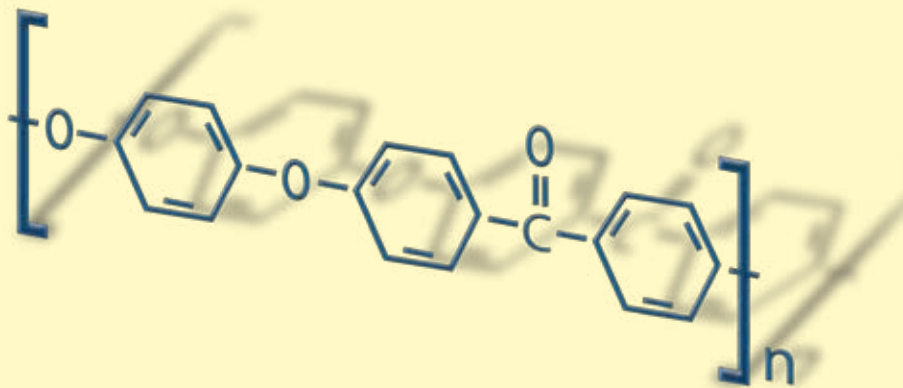
# Metal-free solutions for tomorrow – the high-performance resin Bio XS

Bio XS is a pigmented, linear, semi-crystalline thermoplastic resin to be processed easily and safely with the thermopress 400 injection moulding system to obtain dental mouldings. The high pressure of the injection moulding system reduces shrinkage, ensures dimensional accuracy and guarantees high-precision injection results. Bio XS is available as granulate material in pre-dosed cartridges.

## Characterization

Bio XS belongs to the group of polyether ketones and is a high-performance material which fulfills the requirements for high-performance thermoplastic resins and hence offers a unique combination of exceptional properties:

- high thermal stability (up to 300° C) allows to sterilize the mouldings
- high strength and rigidity allow to achieve slender design of restorations
- no electric behavior hence avoidance of galvanic elements in the mouth, no corrosion
- low absorption of moisture reduces discoloration
- extremely low tendency to wear allows the preparation of occlusals
- superior bond strength in conjunction with composites ensures reliable bonding to veneering materials



Bio XS as friction caps in the telescopic technique

- ultra-thin
- no loss of friction
- metal-free



## Indication range

Metal-free veneer frameworks (composite veneers) of crowns and bridges with no more than one pontic; attachment and telescopic restorations; reinforcing (strengthening) splints and transversal connectors.

## Contraindication

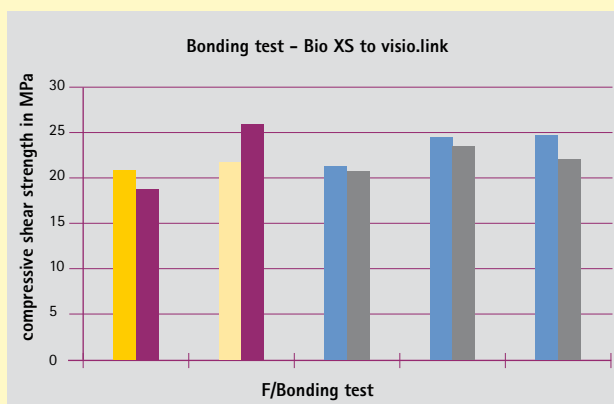
The granulate material Bio XS must not be used for the fabrication of implants, post suprastructures, partial and full dentures, inlays, occlusal appliances and fragile clasps.

## Technical data – Bio XS

	Bio XS
Modulus of elasticity / tensile strength:	97 MPa / 23° C
Flexural strength:	170 MPa at 23° C
Compressive strength:	118 Mpa at 23° C
Rockwell hardness:	126 (R-scale)
Residual monomer content:	0 %
Water absorption 24 H at 23° C:	0.5 %
Density / specific weight:	1.38 g/cm <sup>3</sup>
Polishing:	With conventional polishing materials
Repairability:	not possible
Bond values with veneering materials	see also table

## Bonding values – Bio XS

To achieve reliable bonding to composites, surface enlargement with retention crystals and conditioning with the bredent primer visio.link are recommended.



**Bonding Test**  
University of Jena (Prof.)

## Colors



creamy-white

### Literature on Bio XS

The material features exceptional resistance to most chemicals and absolute resistance to hydrolysis up to 200°C (sterilization is possible), i.e. release of constituents of Bio XS caused by water will not occur, which proves the high oral resistance of the material.

Bio XS complies with the requirements for biocompatibility according to DIN EN ISO 10993-1;

The sensitizing effects of the granulate material have been tested according to DIN EN ISO 10993-10, -12 dated July 7, 2001, and the cytotoxicity, L929 proliferation has been verified according to DIN EN ISO 10993-5,-12, ISO 9363-1, LM SOP 4-06-01.

## Ordering information sheet – Bio XS

Product	REF	Quantity	Color
Bio XS creamy-white high performance C&B	540 XS00 8	Set 5 x 8 g	creamy-white
Bio XS creamy-white high performance C&B	540 XS01 6	Set 5 x 16 g	creamy-white
Bio XS creamy-white performance C&B	540 XS00 5	500 g	creamy-white
Bio XS allergy test plate	992 503X 0	1 piece	creamy-white

## Accessories – Bio XS

Product	REF	Quantity	Indication
thermopress 400 investment ring system	360 0123 0	Set	Investing
Brevest Rapid 1 investment material	570 160R 4	Set	Investing
Wax casting bar, bent 4 mm	430 084B 4	50 pieces	Spruing of the wax model
Abraso-Starglanz	520 0016 3	2 x 50 ml	High luster polishing
Dentaclean denture cleaning agent	520 0099 2	1000 ml	For cleaning Bio Dentaplast



## thermopress 400

No additional equipment such as CO2 cylinder or compressed air required. This way costs and time are saved. The injection moulding result can be achieved more easily and safely since pressure drop is eliminated.

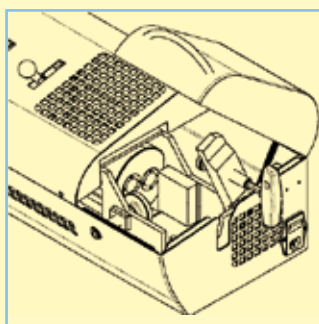
Added comfort thanks to simple programming and operating the unit.

Time-saving function thanks to simultaneous operation of both heating chambers.

The injection process can only be performed after the lid has been closed; additional safety is provided. Easy removal of the ring thanks to automatic cartridge ejection if the bracket is unlocked.



**Injection moulding unit for thermal resins  
up to 400° C - biocompatible and reliable**



Heating is accelerated by high-performance thermocouples. The temperature of the resin is carefully maintained on a constant level by two thermocouples.



Guide and fastening mechanism holds the ring safely in the unit. As a consequence, transmission of power during the injection process is fully utilized - no energy is lost.

**thermopress 400**  
1 unit with power cord  
2 allen keys  
1 cleaning brush  
1 special tool  
**REF 110 0040 0**

# thermopress 400 investment ring system

Simple and time-saving fabrication of crowns and bridges with the thermopress 400 system



Wax model



The conventional ring procedure is avoided.



With Brevest Rapid 1 the required resin contraction can be compensated for via the precise expansion setting.



The wax model is mounted on a metal base and invested in the conventional way.



Injected resin framework



The ring is placed back on the metal base and lined with the metal sleeve. The metal sleeve should only touch the ring.



The screw of the metal sleeve is tightened and the blastic block is inserted to counteract pressure.



The ring is placed in the thermopress 400 unit and fastened with the screws. Then the injection moulding process is started.

## thermopress 400

Assortment 5 parts

Muffle System

1 Base Former

1 Metal Sleeve

1 Plastic Block

1 Spacer

1 Silicone Sleeve

REF 360 0123 0

## thermopress 400 set of accessories (unit), 7 parts

REF 110 0040 1

see above, Accessories thermopress 400:  
Articles marked with \* are included  
in the thermopress 400 set of accessories!

Training program

2-day courses (Senden)

REF 950 0020 0

thermopress 400 Information Brochure

REF 992 945GB

thermopress 400 Patient Information

REF 000 135GB

thermopress 400 system, CD

REF 992 946 EX

## Accessories - thermopress 400:

1 press-out device and punch\*

REF 140 0090 4

1 pair of cartridge pliers\*

REF 140 0090 6

1 ring hook with hex\*

REF 140 0091 2

1 ring, small\* (l 122 mm, w 102 mm, h 72 mm)

REF 140 0090 3

1 ring, small (l 140 mm, w 102 mm, h 72 mm)

REF 140 0090 5

1 cleaning brush

REF 110 0040 2

1 thermopaste 400 special lubricant, 50 g\*

REF 540 0105 1

Expando-Rock-Set

5 kg expansion stone, 500 ml Expandosol

REF 570 0ERS 5

## thermopress Starter Set (cartridges)

5 x 30 g bre.crystal rosa 1

2 x 16 g bre.dentan A

3 x 24 g bre.crystal crystal clear

3 x 16 g Bio Dentaplast A2

5 x 24 g bre.flex pink 1

REF 140 0090 2

2 x 20 g bre.flex pink 2

## thermopress 400 Set S1 (cartridges)

5 x 30 g bre.crystal pink 1

1 x 250 ml Acrylic Sep

5 x 24 g bre.flex pink 1

1 x 20 ml die varnish light-curing,  
transparent

5 x 16 g bre.dentan A

REF 540 S000 1

5 x 16 g Bio Dentaplast A3

## thermopress 400 Set S2 (cartridges)

5 x 16 g Bio Dentaplast A2

5 x 16 g Bio Dentaplast B3

5 x 16 g Bio Dentaplast A3

1 x 250 ml Acrylic Sep acrylic separating  
liquid

5 x 16 g Bio Dentaplast B2

REF 540 S000 2



## Courses and training

We help to ensure your success! bredent cordially invites you to their modernly furnished and equipped training rooms in Senden. In a two-day course you will learn about the wide range of possible applications of the thermopress 400 injection moulding system.

We will gladly organize courses in your laboratory all over the world.

Just give us a call!

Dates - <http://www.bredent.com/de/bredent/events/courses>

# thermopress 400

## Module 01– Basic Training

### Precondition

Dental-technical training

### Description of seminar/workshop

Sensitive persons who have developed allergies to conventional dental alloys (metals) have difficulties to find restorative materials which are free from metals, highly biocompatible and still offer high strength! The thermopress 400 injection moulding system provides numerous possibilities for the fabrication of metal-free and highly biocompatible restorations. Assisted by our experienced trainers, you will learn how to easily, quickly and safely prepare accurate moulds in the injection moulding technique in a step-by-step approach. In the one-day workshop participants will learn about the applications of the thermopress 400 injection moulding system, receive detailed instructions on the indications and contraindications of the individual materials and have the possibility to fabricate a flexible partial denture on their own.

### Content

#### 1. Theoretical part:

- Intensive training in the use of the thermopress 400 system
- Intensive system training, i.e. materials science, indications and processing
- Live demonstration of the processes

#### 2. Practical part:

- Fabrication of a flexible partial denture, a metal-free CoCr restoration or a monomer-free full denture.

### Objective

- Basic information on the thermopress 400 injection moulding system
- Installation and operation of the thermopress 400 injection moulding unit
- Fundamentals of the fabrication of a metal-free partial denture, a CoCr clasp restoration and a monomer-free full denture.

There is a maximum number of 8 participants for the workshop.

# thermopress 400

## Module 02 – Advanced Training

### Precondition

Dental-technical training, participants should have visited module 01 or received basic instructions from a thermopress 400 system specialist.

### Description of the seminar/workshop

The thermopress 400 injection moulding system allows careful processing of biocompatible materials to obtain high-quality dental restorations. Five materials with different properties provide a variety of possible indications. In the two-day workshop you will learn about the indications of the thermoplastic resins available in the system, prepare metal-free restorations of your choice and learn safe handling of the thermopress 400 injection moulding system.

Examples of possible restorations in the course:

- Crystal-clear occlusal appliance
- Metal-free telescopic restoration on zirconium crowns
- Metal-free attachment restoration
- Long-term temporaries with tooth-colored clasps

### Content

- Speech „Metal-free dental restorations, allergies“
- Fabrication of a metal-free restoration
- Patient restorations can be brought to the workshop
- Rebasing
- Splints

### Objective

Refreshing and expanding the knowledge acquired in module 01, fabrication of a metal-free restoration.

Tips & tricks on processing thermoplastic resins.

Indications for allergic persons.

There is a maximum number of 8 participants for the workshop.

# Workshop/Seminar registration

Phone: (+49) 73 09 / 8 72-2 53

Fax: (+49) 73 09 / 8 72-2 05

Name of participant

Street

Postal code /City / Town

Phone

Workshop/Seminar

Workshop/Seminar fee

Fee in Euro plus VAT

Date of workshop/seminar

Invoice recipient

- ☐ Please send me the „Training program“
- ☐ Please send me the catalog for the dental-technical laboratory
- ☐ Please send me the catalog „Products for the dental practice“
- ☐ Please send me the catalog „Product Overview of Implants“
- ☐ Request for a visit by a bredent field advisor

Upon request, workshops / seminars can be held on site. To receive detailed information, please call Mrs. Roswitha Dorin; phone (+49) 73 09 / 8 72-2 53

Date

Signature





New quality of life...

Presented by:

bredent

