

KwickModel® SCAN KwickModel® nature METAL-POWDER METAL-BITE® METAL-BITE® Function METAL-BITE® GOLD

CAD/CAM-Products



Product Informations



Biß zur Perfektion

CAD/CAM-Products

High quality products for scanable CAD/CAM-Registrations

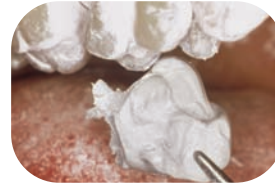
R-SI-LINE[®] METAL-BITE[®]

Early in 2000 the classic METAL-BITE[®] (dark grey) was introduced as the first scanable and automixing Vinyl polysiloxane (A-Silicone), and was used for dental applications and for a powderfree scan (preferably in combination with CEREC[®])¹.

Until now the universal METAL-BITE is the standard in the dental CAD/CAM registration. Over time the classical indications have been extended: As a result of innovative software applications (for example for CEREC 3D) METAL-BITE is not only used for static but also for dynamic registrations² (FGP-Technique, "Functional Generated Path") and is used for face bow registrations (according to Prof. (HR) Dr. A. Gutowski, Germany).

For you as the user three METAL-BITE[®]-high quality products are available with comparable indications:

- METAL-BITE[®]
- METAL-BITE[®] Function
- METAL-BITE[®] GOLD



Powder free scanable

Antagonist registration

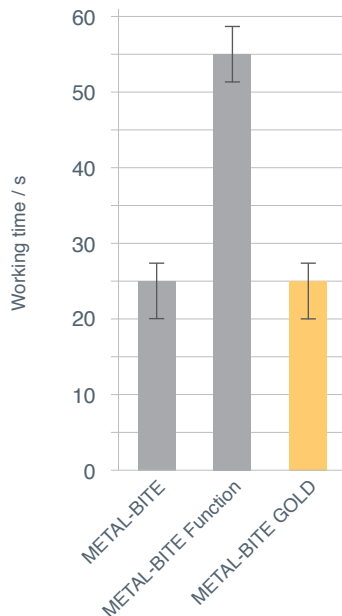
FGP-Technique

Face bow registration

METAL-BITE-Products

Graph 1

Working times



Working times:

You can choose between two working times, graph 1:

Results and advantages:

METAL-BITE and METAL-BITE GOLD show for all indications a defined working time (- interval), the user has enough time for an intraoral application and for precise contact positioning.

METAL-BITE Function has the advantage of a longer working time for extended arch manipulations to the contact position.

All three METAL-BITE products are preferred for dynamic registration use² (FGP-Technique).

Setting times:

The setting times of the METAL-BITE products are designed to be practical for the user, graph 2:

Results and advantages:

METAL-BITE and METAL-BITE GOLD will set within 1 min (fast set, with optimal *snap set*), while the setting time of METAL-BITE Function is no longer than 2 min*.

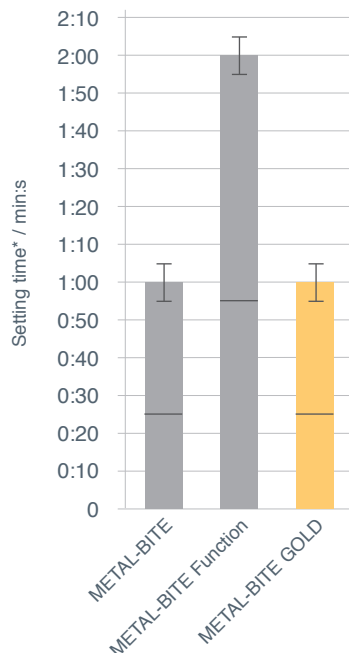
You as the user can choose between two *fast set* or one *slow set* product.

The above cited working times and setting times are according to 23 ± 2 °C bzw. 37 ± 2 °C (DIN 13903).

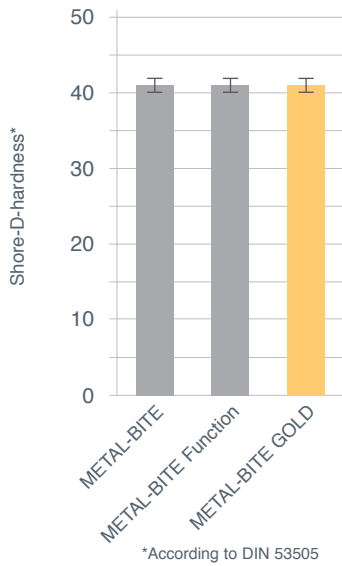
The black horizontal lines within the left hand columns show the middle working times (see graph 1).

Graph 2

Setting times



*Time start mixing (automix) until final intraoral hardening



Shore-hardness:

All METAL-BITE products show very high Shore-D-hardnesses, graph 3:

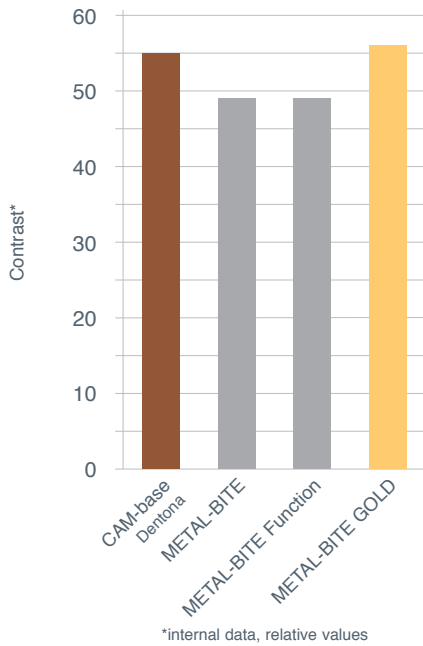
Shore-A- and Shore-D-hardness (named after Albert Shore) are material code words for elastomeres, which are determined according to different calculating routines (DIN 53505). Harder materials will be measured according to Shore-D.

Results and advantages:

METAL-BITE, METAL-BITE Function and METAL-BITE GOLD show very high Shore-D-hardnesses (determined after 24 h according DIN 53505).

The higher the Shore-hardness the lower the compression of the registrate.

Graph 3
Shore-D-hardnesses



Contrast:

In the following the contrast of the scanned (Scan) METAL-BITE-Registrates are shown relative to each other, graph 4 (with the CAM-base die):

Results and advantages:

The contrast of METAL-BITE and METAL-BITE Function leads to excellent antagonist data during CEREC routine.

The contrast of METAL-BITE GOLD has been increased and offers brilliant antagonist data.

METAL-BITE GOLD shows an even better contrast than the excellent die CAM-base.

Graph 4
Contrast

Manufacture of a scanable, static antagonist registrate with METAL-BITE:



The basis for an excellent CAD/CAM restoration is a perfect, scanable antagonist registrate with METAL-BITE (in this case a classical hikp-registrate):

The preparation will be powdered with a pigment suspension (see METAL-POWDER, page 7) and can then be scanned.

METAL-BITE will be applied intraorally and will be set as a static occlusion registrate in hikp (hikp = habituelle intercuspital position).

The high resolution and fast set METAL-BITE-Registrat.

Then the METAL-BITE-Registrat will be worked out very comfortably mesially and distally and can be prepared for a further scan. If necessary the mesial and distal occlusal references of teeth must be powdered again (see METAL-POWDER, page 7).

Antagonist registrate

METAL-POWDER

hikp-Registrat

Scan

Manufacture of a scanable, dynamic antagonist registrate with METAL-BITE (an example):

Dynamic registration technic

“FGP-table”

Excursion movements



To produce a scanable, dynamic antagonist registrate with METAL-BITE, the hardened hikp-registrate will be reduced to a “FGP-table” (without taking it out of the intercuspital position), which still offers occlusal information.

METAL-BITE is applied again in a thin layer onto the “FGP-table” and the jaw closed. Then the excursion movements (protrusiv, latero-protrusiv, lateral) will be memorised by the METAL-BITE during working time on the intraoral “FGP-table”.

The dynamic registrate can then be scanned ².

Scan

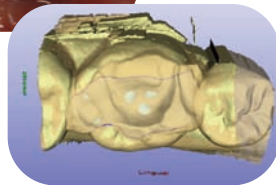
Working out characteristics of a METAL-BITE antagonist registrate:

Working out

The intraoral manufactured antagonist registrate can be worked out excellently without removing it intraorally. To do so the silicone will be removed directly from the adjacent mesial and distal teeth. If necessary the mesial and distal teeth need to be powdered again to get a sufficient occlusal data reference. Registrates from METAL-BITE[®] must not be powdered. Powdering could have a negative effect on the occlusal data.



In this case METAL-BITE GOLD has worked out mesial and distal for the following scan of tooth 36.



Scan of tooth 36 with antagonist.

Pictures with kind permission of www.werling-consulting.de.

Additional technical data for METAL-BITE-Products:

Technical data

As well as the polymerisation shrinkage (24 h-value) of < 0,1 %, the strain in compression (measured after 24 h) from 0,5 % is extremely low. The specific weight is about 1,6 - 1,7 g/cm³ (20 °C, 68 °F). METAL-BITE[®]-Products have a neutral taste and odour.

Summary:

Summary

All three high quality METAL-BITE[®]-Products can be simply handled. They are easily moulded and cut with normal commercial diamond cutters.

With products from the METAL-BITE-Family you can choose between one registration material for long lasting registrations (METAL-BITE Function, slow set) or two registration materials for fast set applications with optimised working times and shortest hardening or setting times (METAL-BITE and METAL-BITE GOLD, fast set).

The scan characteristics of the METAL-BITE[®]-Products provide optimal data for totally faultless antagonist and “natural” design- and suggestions for restorations.

METAL-BITE[®] GOLD can be viewed according to the parameter working time, intraoral hardening time, precision and a minimized working ability and an excellent contrast as a product of highest acceptance ³.

Literature

¹ Dr. K. Wiedhahn, „Function“ with registration: simple, fast and safe using a new registration material, in: International Journal of Computerized Dentistry, IJCD, Volume 4, Number 3, July 2001.

² Dr. Fritzsche, Efficient Dynamic Registration Technique using METAL-BITE presented with a CEREC 3D partial crown: A case description, in: International Journal of Computerized Dentistry, IJCD, Volume 10, Number 1, 2007, QV (special Reprint available).

³ Prof. Dr. W. Mörmann, University Zürich, Internal statement.

Scanable Model-A-Silicones

KwikkModel® nature and KwikkModel® SCAN

Nine years ago the model A-Silicone KwikkModel® nature was introduced for manufacturing chairside composite inlays and from this system the component KwikkModel® fluid (light grey) was used as the first scanable, flowable and automixing vinyl polysiloxane (A-Silicone) for CAD/CAM-applications and for powderfree scans (preferably for CEREC®) 5, 6.

Until now KwikkModel® fluid and KwikkModel® SCAN are the standard products in manufacturing CAD/CAM-models with A-Silicones.

For you as the user two KwikkModel®-high quality products are available with comparable indications:

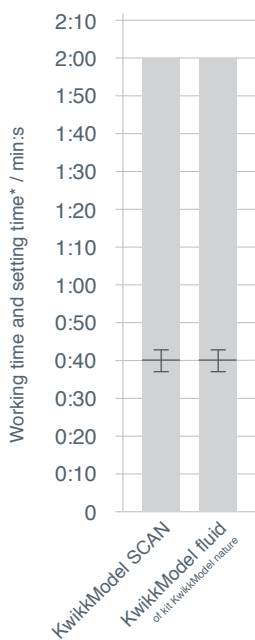
- KwikkModel® fluid
- KwikkModel® SCAN



Scanable Model-A-Silicone

KwikkModel nature
KwikkModel fluid

KwikkModel SCAN



Working times:

The working and setting times are shown in graph 5:

Results and advantages:

KwikkModel® fluid (one of the components of the system kit KwikkModel® nature) is recommended for use with CEREC 2, 3D, while KwikkModel® SCAN can be used for CEREC InLab (CEREC Scan).

KwikkModel® fluid (one of the components of the system kit KwikkModel® nature) and KwikkModel® SCAN show an optimal working time with small variance, so that the user has enough time for pouring an impression.

The height of the columns show the extraoral setting time at 99 ± 4 °F.

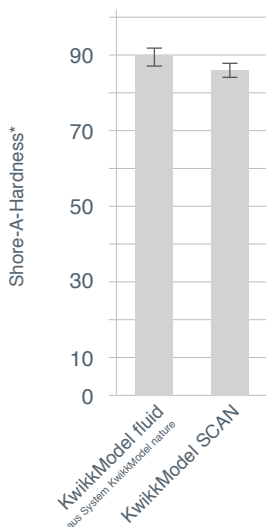
The black horizontal lines within the columns on the left side show the middle working time.

Graph 5

Working times

Setting times

*Time start mixing (automix) until final extraoral hardening (setting time)



Shore-A-hardnesses:

The Shore-A-hardnesses are shown in graph 6:

Results and advantage:

KwikkModel® fluid (the one component of the system kit KwikkModel® nature) and KwikkModel® SCAN show high Shore-A-hardnesses (in middle 90 Shore-A e. g. 86 Shore-A, 24 h-value according to DIN 53505).

The higher the Shore-hardness the lower the strain in compression of the model material and the more precise the model itself.

Because of its excellent precision, chairside manufactured composite inlays can be done without any problems 4.

Graph 6

Shore-A-Hardnesses

*According to DIN 53505

4 Dr. Hj. Richter, Rationelles Sofort-Inlay-Verfahren mit KwikkModel nature, Dental Spiegel, 19. Jahrgang, Februar 1999, Nr. 1, S. 42. Publication in German language, see r-dental.com >> KwikkModel nature.

5 Dr. A. Kurbad, The integration of CEREC Scan into the treatment process in: International Journal of Computerized Dentistry, IJCD, Volume 3, Number 1, Januar 2000.

6 News from the Industry, Powder-free precision impressions with KwikkModel SCAN in: International Journal of Computerized Dentistry, IJCD, Volume 3, Number 4, October 2000.

Chairside Inlays

Literature

Manufacture of a scanable A-Silicone model:

Impression

An impression will be taken from a preparation (cavity, tooth) preferably with A-Silicone, hydrocolloide, alginate etc. An impression using polyether can be made with certain restriction. A polyether impression has to be cleaned before going to the next described steps.

Isolation



An impression of A-Silicone (Vinyl polysiloxane) **must** be isolated with KwikkModel Anti-Bond-Spray (ABS) before it can be poured, because the A-Silicone of the model would react chemically with the A-Silicone of the impression, that means it will adhere or bond.

The chemically active vinyl groups of the A-Silicone will be deactivated by the KwikkModel Anti-Bond-Spray (inhibited).

Isolation



The prepared areas of the A-Silicone impression, here using R-SI-LINE PUTTYSOFT (grey green) and R-SI-LINE LIGHT (lilac) taken in one step impression technique, will be coated with KwikkModel Anti-Bond-Spray (ABS).

The active vinyl groups of the A-Silicone of the impression are therefore deactivated.

Pouring



This impression around the prepared area (with a slightly moist surface because of the Anti-Bond-Spray) can be poured with the automatically mixed light grey KwikkModel fluid directly and bubblefree within the working time from incisal to subgingival.

Instead of KwikkModel fluid the KwikkModel SCAN for CEREC InLab (CEREC Scan) can be used, see below.

Base



Onto the KwikkModel[®] fluid the red KwikkModel[®] base (one of the components of system kit KwikkModel[®] nature) can be placed directly to the model as a socket/base to offer sufficient mechanical strength to the model after removing it from the impression.

Harden



After a very short setting time the hardened A-Silicone model can be taken out of the hydrocolloid -, alginate - or A-Silicone impression.

Scan



Now the light grey part of the A-Silicone model can be scanned (Scan) and needs no powdering.

CEREC InLab

For CEREC InLab (CEREC Scan) the KwikkModel SCAN can be used. KwikkModel SCAN is comparable to KwikkModel fluid and the procedure for pouring an impression is the same. Instead of using the KwikkModel base material, a special metal InLab-Impression tray is placed onto the grey fluid material.

Matting spray for professional CAD/CAM-Applications:

Before taking an intraoral CAD/CAM-Scan the natural teeth and occlusal areas must be powdered. This is done with a spray pigment suspension, such as METAL-POWDER:



METAL-POWDER in a can is a pigment suspension in ethanole for a perfect intraoral or extraoral application.

To apply a fast and efficient optimal pigment layer, simply depress the spray cans nozzle head for a fine, even application.



With METAL-POWDER such matted surfaces with different dentin and enamel areas can be scanned homogeneously.

The pigment layer then offers detailed and accurate edges so that the system can suggest and exhibit restorations with finest morphological lines.

Matting

Order information of described products:

	Description:	Order-No.:
	R-SI-LINE [®] METAL-BITE [®]	MBK1074
	R-SI-LINE [®] METAL-BITE [®] Function	MBK1079
	R-SI-LINE [®] METAL-BITE [®] GOLD	MBK0750
	KwikkModel [®] nature (- fluid and - base)	KMK1077
	KwikkModel [®] fluid (refill kit)	KMK1077F
	KwikkModel [®] base (refill kit)	KMK1077B
	KwikkModel [®] SCAN	KMK1088
	KwikkModel [®] Anti-Bond-Spray	KMA1010
	METAL-POWDER Scan Spray	MPS1030
	KwikkModel Scan Wax	KMD1090

Products

Further products and informations see www.r-dental.com or phone: +49 40-22 75 76 17 or e-mail: info@r-dental.com.

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