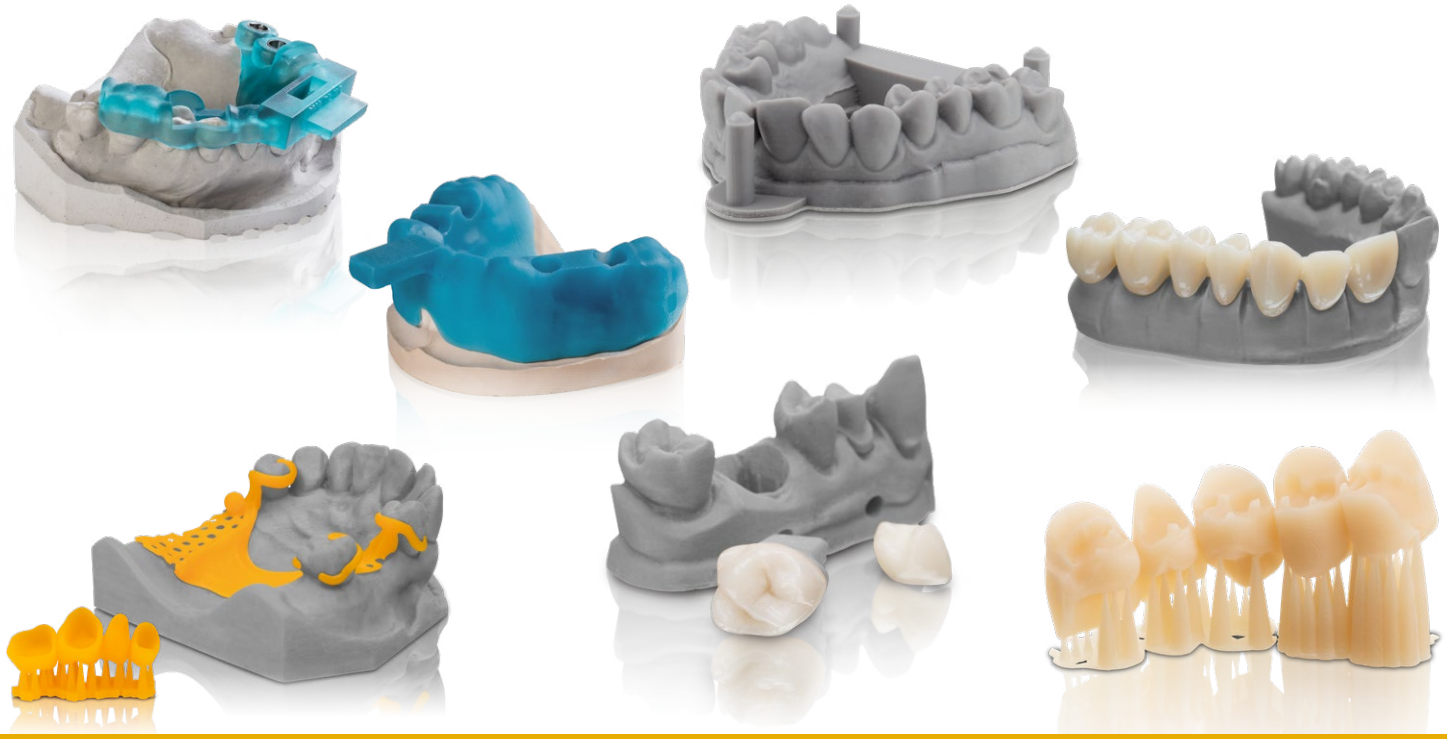


BEGO
3D Printing Materials

Partners in Progress

BEGO

3D PRINTING SOLUTIONS TAILORED FOR DENTAL 3D PRINTING

The high dental technology requirements regarding precision, safety, and reproducability of 3D printing solutions differ considerably from those of other application fields.

BEGO is a long-established family company with 130 years of dental expertise. We are specialists in all dental manufacturing techniques and pioneers in CAD/CAM technology with more than 20 years of experience in the field of 3D printing. BEGO offers a wide range of 3D printing materials that enable you to produce a variety of restorations quickly, easily and cost-effectively – in your own laboratory, with absolute flexibility and unique precision.

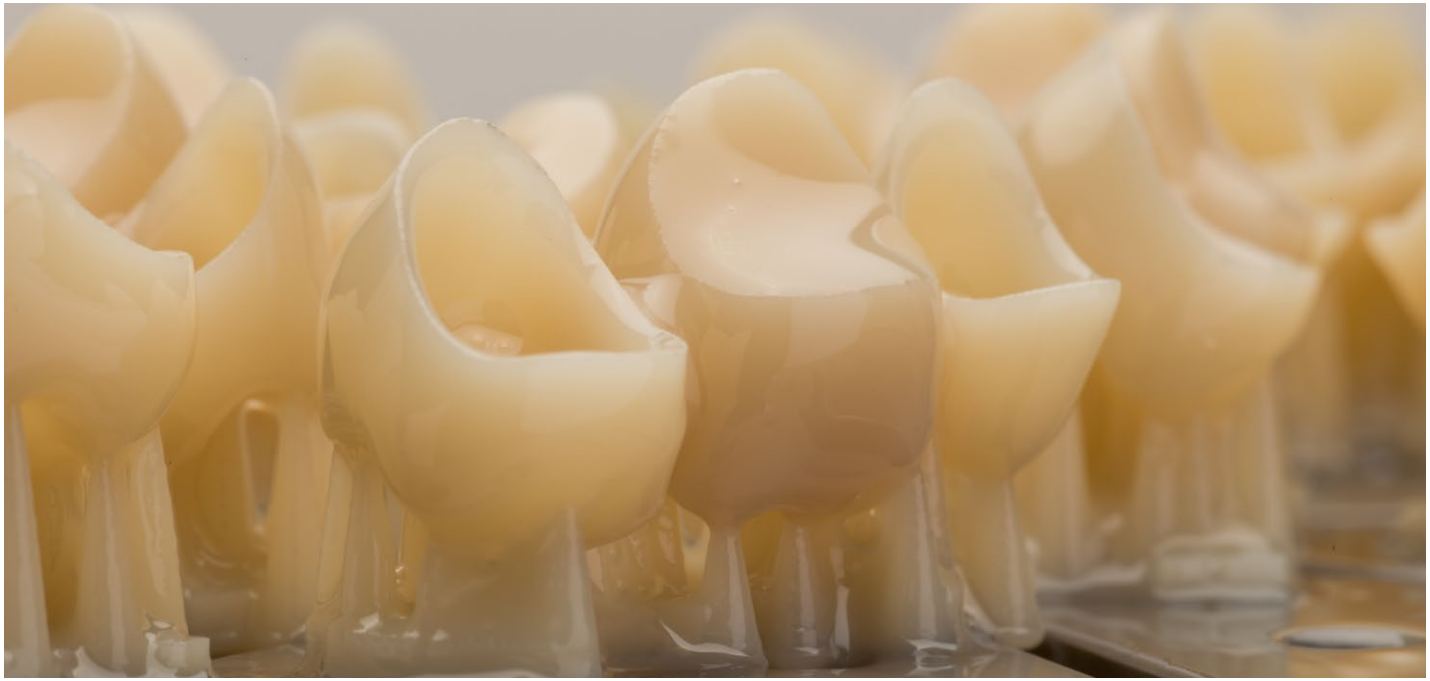
Contents

1

The Materials

2

The Investments



Detailed product information:

VarseoSmile Crown plus

The tooth-colored, ceramic filled hybrid material for 3D printing of permanent single crowns, inlays, onlays and veneers

Advantages for the laboratory

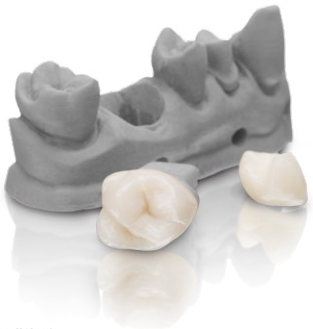
- Specially for the resin developed printing and processing parameters ensure an accurate fit and smooth production sequences with reproducible results at any time
- The chemical and mechanical properties of the material are specially adapted to dental applications
- Versatile use: as a single crown on natural tooth, as an inlay, onlay and veneer, and as a veneer on metal frameworks
- Objects already printed can be supplemented and repaired outside the patient's mouth with VarseoSmile Crown plus while maintaining stability – or will simply be reprinted due to low material costs
- Minimized resin sedimentation for easy handling, no mixing or shaking necessary with regular use
- Easy to grind and polish by using standard tools
- Seven shades according to the proven VITA* classical shades: A1, A2, A3, B1, B3, C2, D3
- Thanks to the full integration into the digital workflow and the low material costs, a fast supply option with an excellent price-performance ratio is made possible
- Validated on many 3D printers from well-known manufacturers
- Extensive scientific studies by renowned universities and institutes confirm the excellent features of the restorations made of VarseoSmile Crown plus

Advantages for the patient

- High aesthetics thanks to a balanced ratio of opacity and translucency
- Fluorescence of the printed objects resembles that of the natural tooth
- Low tendency to age and discolor thanks to very low water absorption
- Low plaque accumulation due to smooth surface
- High comfort thanks to low cold and heat sensitivity
- Antagonist-friendly material with mechanical buffering effect – ideal for implant-supported crowns
- Minimized formation of secondary caries thanks to a high adhesive bond with luting composites
- High biocompatibility due to very
- Certified biocompatibility

Individualization

The final polymerized objects can be customized using commercially available veneering composites and composite stains. The instructions for use of the material manufacturer must be observed.



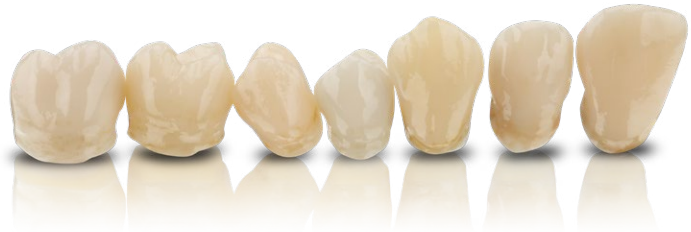
* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.
Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

Scientific studies:

Free 3D Printed VarseoSmile Crown plus Sample:

Note for practitioners

Permanent restorations made of VarseoSmile Crown plus can be attached with commercially available self-adhesive cements (e.g. RelyX Unicem*, 3M Espe*) or composite cements with primer (e.g. Variolink Esthetic DC* and Monobond Plus*, Ivoclar Vivadent*). Observe the instructions for use of the luting agent.



Technical specifications

Color	A1, A2, A3, B1, B3, C2, D3
Density	approx. 1.4 – 1.5 g/cm³
Viscosity	2,500 – 6,000 mPa·s
Flexural strength	116 – 150 MPa**
Flexural modulus	4,090 MPa
Hardness	≥ 90 Shore D
Water solubility	< 1 µg/mm³
Water sorption	< 12 µg/mm³
Layer thickness	50 µm
Wavelength	385 nm and 405 nm

Product details

Availability	Contents***	REF
VarseoSmile Crown plus A1	0.5 kg bottle	41107
VarseoSmile Crown plus A2	0.5 kg bottle	41108
VarseoSmile Crown plus A3	0.5 kg bottle	41109
VarseoSmile Crown plus B1	0.5 kg bottle	41110
VarseoSmile Crown plus B3	0.5 kg bottle	41111
VarseoSmile Crown plus C2	0.5 kg bottle	41112
VarseoSmile Crown plus D3	0.5 kg bottle	41113
VarseoSmile Crown plus A1	0.25 kg bottle	41117
VarseoSmile Crown plus A2	0.25 kg bottle	41118
VarseoSmile Crown plus A3	0.25 kg bottle	41119
VarseoSmile Crown plus B1	0.25 kg bottle	41120
VarseoSmile Crown plus B3	0.25 kg bottle	41121
VarseoSmile Crown plus C2	0.25 kg bottle	41122
VarseoSmile Crown plus D3	0.25 kg bottle	41123

* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.
** See study “Effects of additional UV light curing processes” under www.bego.com
*** For the varseo xs 3d-printer only 0.25 kg bottles are available/usable.
Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

Detailed product information:

VarseoSmile Temp

The tooth-colored resin for 3D printing of temporary crown and bridge restorations, inlays, onlays, and veneers

Advantages for the laboratory

- Specially for the resin developed printing and processing parameters ensure an accurate fit and smooth production sequences with reproducible results at any time
- Easy finishing due to smooth surfaces of the printed objects
- Objects already printed can be supplemented and repaired outside the patient's mouth with VarseoSmile Temp while maintaining stability – or will simply be reprinted due to low material costs
- Extremely short fabrication times and low material consumption equate to cost-efficient production in the laboratory
- Three shades according to the proven VITA* classical shades: A2, A3, C2

Advantages for the patient

- The finished restoration can be attached using conventional temporary cements
- Certified biocompatibility

Technical specifications

Color	A2, A3, C2
Density	approx. 1.4 – 1.5 g/cm³
Viscosity	2,500 – 6,000 mPa·s
Flexural strength	≥ 100 MPa
Layer thickness	50 µm
Wavelength	405 nm

Product details

Availability	Contents**	REF
VarseoSmile Temp A2	0.5 kg bottle	41022
VarseoSmile Temp A3	0.5 kg bottle	41023
VarseoSmile Temp C2	0.5 kg bottle	41024
VarseoSmile Temp A2	0.25 kg bottle	41102
VarseoSmile Temp A3	0.25 kg bottle	41103
VarseoSmile Temp C2	0.25 kg bottle	41104

* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.
** For the Varseo XS 3D-printer only 0.25 kg bottles are available/usable.
Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

VarseoSmile Teeth

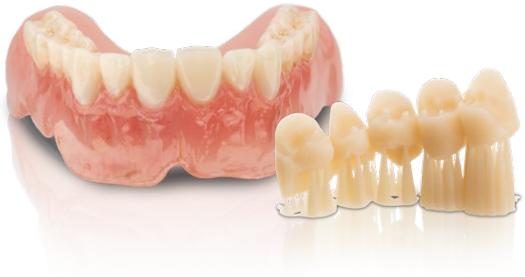
The tooth-colored resin for 3D printing of highly aesthetic teeth for full and partial dentures

Advantages for the laboratory

- Create customized denture teeth yourself with 3D printing
- Printing and processing parameters tailored for VarseoSmile Teeth resin ensure efficient production processes with reproducible results at all times
- Available in 5 VITA* colors
- Easy to grind and polish using standard tools
- Printed teeth can be supplemented with VarseoSmile Teeth resin if needed – or are simply reprinted due to the low material costs and fast workflow
- Less than 0.7% shape deviation due to the bonding process with the denture base guarantee fluid workflows and high-quality work results
- Physically stabilized resin – therefore no mixing required even after prolonged non-use
- Strong bond with 3D-printed denture bases and denture bases made of cold polymerisate
- Cost-effective and efficient fabrication of full and partial dentures in the digital workflow with VarseoSmile Teeth

Advantages for the patient

- High abrasion resistance of denture teeth printed from VarseoSmile Teeth
- Highly aesthetic denture teeth due to the very good ratio between opacity and translucency as well as the almost natural fluorescence
- For an even more natural look, the printed denture teeth can be customized with veneering and painting techniques



Technical specifications

Color	A1, A2, A3, B1, C2
Max. dimensional deviation by bonding	< 0,7 %
Density	approx. 1.4 – 1.5 g/cm³
Flexural strength	≥ 100 MPa
Layer thickness	50 µm
Wavelength	385 nm and 405 nm

Product details

Availability	Contents**	REF***
VarseoSmile Teeth A1	1 kg bottle	41144US
VarseoSmile Teeth A2	1 kg bottle	41145US
VarseoSmile Teeth A3	1 kg bottle	41146US
VarseoSmile Teeth B1	1 kg bottle	41147US
VarseoSmile Teeth C2	1 kg bottle	41148US
VarseoSmile Teeth A1	0.25 kg bottle	41154US
VarseoSmile Teeth A2	0.25 kg bottle	41155US
VarseoSmile Teeth A3	0.25 kg bottle	41156US
VarseoSmile Teeth B1	0.25 kg bottle	41157US
VarseoSmile Teeth C2	0.25 kg bottle	41158US

* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.
** For the Varseo XS 3D-Printer only 0.25 kg bottles are available/usable.
*** This product is currently only available in the United States.
Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

Detailed product information:

VarseoWax Tray

The resin for 3D printing of individual impression trays

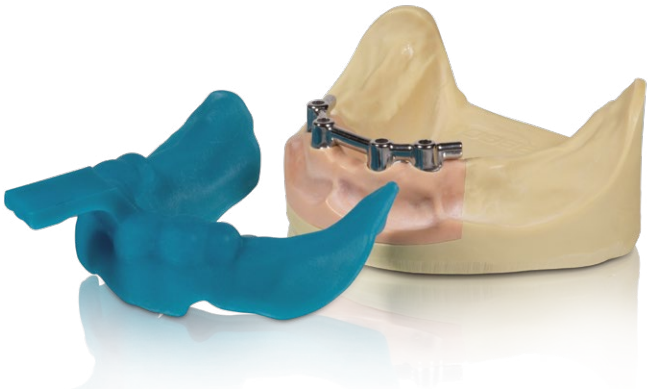
- Water- and solvent-resistant during processing
- Specially developed printing and processing parameters tailored for the resin ensure the rapid and economic production of impression trays
- Smooth surfaces of the printed objects form the basis for an excellent fit
- Outstanding dimensional stability and strength of the printed objects enable precise and deformation-free impressions to be taken on patients
- Thanks to the CAD wax-up, retention holes in the impression tray can be conveniently produced in one step – there is no need for additional drilling
- CAM production ensures evenly rounded edges – no time-consuming grinding of the margins necessary
- Printed objects can be universally used for all impression materials
- CE mark certifies security, efficiency and permanent monitoring of the resin and stands for excellent cross-batch quality standards of the product
- Biocompatibility confirmed by an independent institute means safety for patients

Technical specifications

Color	blue
Modulus of elasticity	≥ 1,500 MPa
Density	approx. 1.12 g/cm³
Viscosity	1,100 mPa·s
Notched impact strength	≥ 3 kJ/m²
Flexural strength	≥ 50 MPa
Layer thickness	100 µm
Wavelength	405 nm

Product details

Availability	Content	REF
VarseoWax Tray	1 kg bottle	41013



VarseoWax Surgical Guide

The resin for 3D printing of surgical guides and placement aids for implant prosthetics

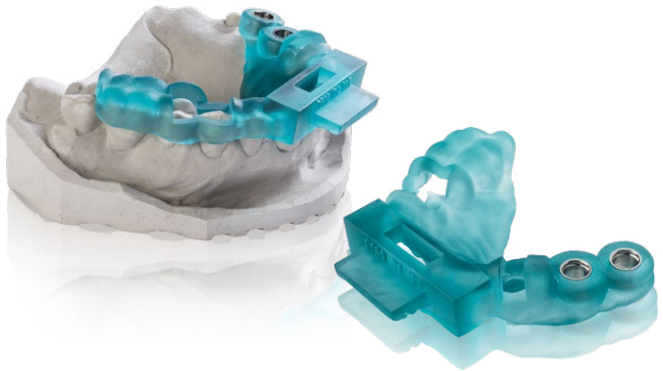
- Highly resistant to chemicals – the printed objects can be cleaned and disinfected both conveniently and easily
- Specially developed printing and processing parameters tailored for surgical guides ensure exact shaping in the area around the drill sleeves and, consequently, precise drill holes as well as optimal accuracy of fit during subsequent insertion in the patient's mouth
- Extremely short fabrication times and low material consumption equate to cost-efficient production in the laboratory
- CE mark certifies security, efficiency and permanent monitoring of the resin and stands for excellent cross-batch quality standards of the product
- Biocompatibility confirmed by an independent institute means safety for patients

Technical specifications

Color	blue – transparent
Modulus of elasticity	≥ 1,500 MPa
Density	approx. 1.12 g/cm³
Viscosity	1,100 mPa·s
Flexural strength	≥ 50 MPa
Layer thickness	100 µm
Wavelength	405 nm

Product details

Availability	Content	REF
VarseoWax Surgical Guide	1 kg bottle	41012



Detailed product information:

VarseoWax Model

The resin for 3D printing of dental models

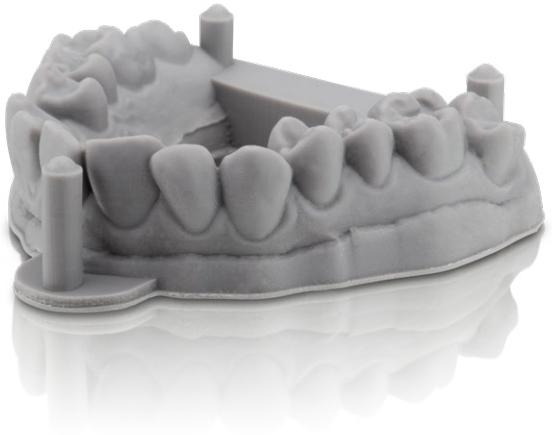
- Resin for solid or hollow 3D printing of dental full and partial models as well as models with removable dies
- Suitable for duplication with silicone or gel as well as for the fabrication of splints, aligners, etc. using the thermoforming technique
- Specially for the resin developed printing and processing parameters ensure smooth production sequences with reproducible results at any time
- The dimensional stability and the smooth and pore-free surfaces of the printed models are the ideal basis for the fabrication of high-precision restorations
- Can be insulated against adhesive wax, is resistant to moisture in order to facilitate problem-free cleaning and accordingly, its handling during processing is comparable to that of a conventional plaster model
- Optimal visibility of all model contours and preparation margins due to the opaque gray color of the models
- Suitable for processing in DLP 3D printers with a wavelength from 385 nm to 405 nm
- Easy and error-free to process – high physical stability minimizes sedimentation during storage and facilitates mixing

Technical specifications

Color	gray
Modulus of elasticity	≥ 2,500 MPa
Density	approx. 1.12 g/cm³
Viscosity	1,300 – 1,800 mPa·s
Flexural strength	≥ 80 MPa
Hardness	≥ 84 Shore D
Layer thickness	50 µm
Wavelength	385 nm to 405 nm

Product details

Availability	Content*	REF
VarseoWax Model	1 kg bottle	41140
VarseoWax Model	0.25 kg bottle	41141



* For the Varseo XS 3d-printer only 0.25 kg bottles are available/usable.

Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

VarseoWax CAD/Cast

The resin for the 3D printing of burnout objects

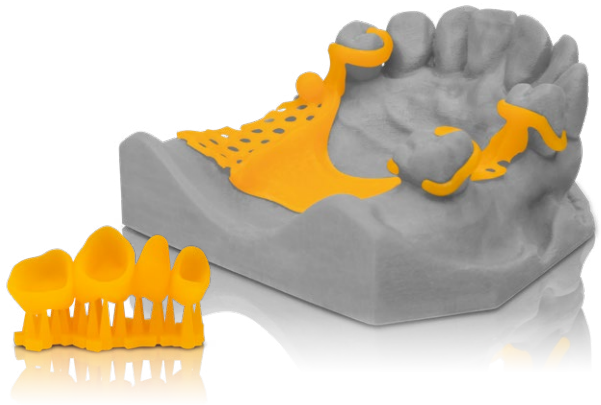
- Can be burned out without leaving any residue – provides optimal conditions for pore-free, smooth and precise partial dentures
- Specially for the resin developed printing and processing parameters ensure smooth production sequences with reproducible results at any time
- Further processing with the investment materials VarseoVest P plus and VarseoVest C&B, specially developed for shock-heat investing of 3D printed objects possible
- Excellent dimensional stability of the printed objects enables deformation-free investment and thus an excellent accuracy of fit of the casted objects

Technical specifications

Color	yellow
Modulus of elasticity	> 1,500 MPa
Viscosity	700–1,500 mPa·s
Density at 22 °C	approx. 1.10 g/cm³
Flexural strength	> 50 MPa
Residual ash content	< 0.1 % bei 700 °C
Layer thickness	50 µm
Wavelength	405 nm

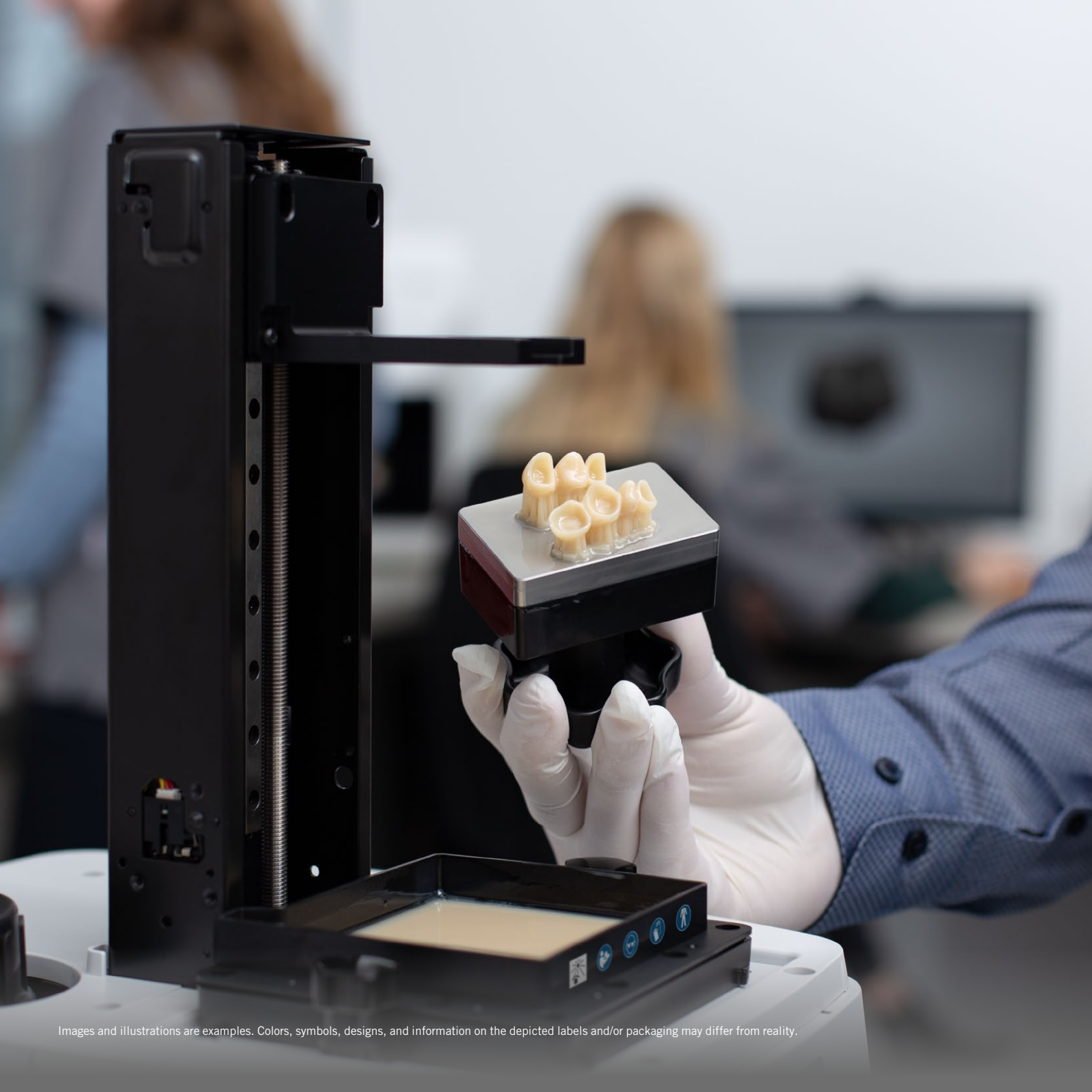
Product details

Availability	Content*	REF
VarseoWax CAD/Cast	0.25 kg bottle	41136
VarseoWax CAD/Cast	1 kg bottle	41137



BEGO Varseo 3D Printing Materials

Compatibility overview 3D printers and BEGO Varseo materials:
https://www.bego.com/3d-printing/materials/



Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

Detailed product information:

VarseoVest P plus

Phosphate-bonded, shock-heat precision investment material, especially for casting 3D printed partial denture frames

- Specially developed for the investing of 3D printed partial denture frames
- Creates an excellent fit and smooth surfaces of the cast objects – after each casting and even with pressureless investing
- Outstanding flow properties ensure easy investing even on slender object details; long working time of more than 4:40 min. enables fatigue-free processing
- The mould is inserted directly into the furnace, which is preheated to 900–950 °C, only 20 min. after investing – for a considerable reduction in the duration of the heating process
- Impressive strength of the investment material ensures that the moulds do not crack or tear as a result of the plastic expanding – which forms the basis for reliable further processing
- Despite its strength, an easy deflasking of the cast object is possible
- Unambiguous expansion control with the special mixing liquid BegoSol® K ensures reproducible fit results
- Easy application by a comparable processing method to partial denture investment materials

Product details

Physical data	
Mixing liquid	BegoSol® K
Working time at 21 °C	approx. 4:40 min.
Shelf life in an unopened bag	24 months

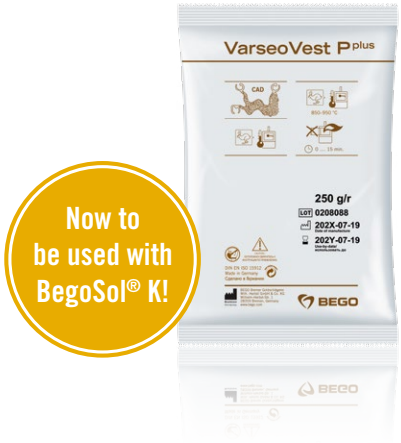
Key material values according to DIN EN ISO 15912	
Beginning of setting (Vicat time)	approx. 9:50 min.
Compressive strength	approx. 8 MPa
Linear thermal expansion	0.9 %
Flowability	145 mm

Accessories	Contents	REF
BegoSol® K mixing liquid*	1 l bottle	51120
BegoSol® K mixing liquid*	5 l canister	51121
Silicone mould former	1 set	54877

DIN EN ISO 15912

Product details

Availability	Contents	REF
VarseoVest P plus, 72 × 250 g bag	18 kg carton	54910
VarseoVest P plus, 60 × 300 g bag	18 kg carton	54911
VarseoVest P plus, 20 × 300 g bag	6 kg carton	54912
The packages do not contain any mixing liquid.		



* BegoSol® K is sensitive to freezing.

Images and illustrations are examples. Colors, symbols, designs, and information on the depicted labels and/or packaging may differ from reality.

VarseoVest C&B

Phosphate-bonded, shock-heat precision investment material, especially for casting 3D printed crown and bridge frameworks

- Specially developed for the investing of 3D printed crown and bridge frameworks
- Creates an excellent fit and smooth surfaces of the cast objects – after each casting and even with pressureless investing
- Outstanding flow properties ensure easy investing even on slender object details; long working time of more than 3:15 min. enables fatigue-free processing
- The mould is inserted directly into the furnace, which is preheated to 900 °C, only 20 min. after investing – for a considerable reduction in the duration of the heating process
- Impressive strength of the investment material ensures that the moulds do not crack or tear as a result of the plastic expanding – which forms the basis for reliable further processing
- Despite its strength, an easy deflasking of the cast object is possible
- Unambiguous expansion control with the special mixing liquid BegoSol® CC ensures reproducible fit results
- Easy application by a comparable processing method to crown and brigde investment materials

Product details

Physical data	
Mixing liquid	BegoSol® CC
Working time at 21 °C	approx. 3:15 min.
Shelf life in an unopened bag	24 months

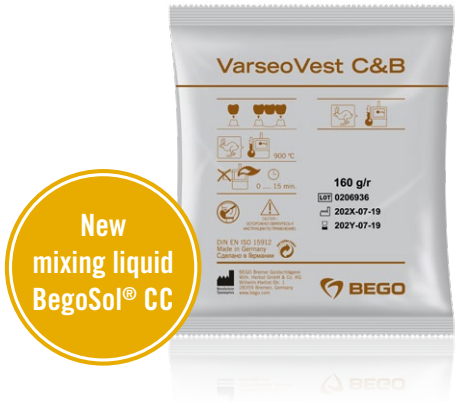
Key material values according to DIN EN ISO 15912	
Beginning of setting (Vicat time)	approx. 5:30 min.
Compressive strength	approx. 5 MPa
Linear thermal expansion	1.3 %
Flowability	140 mm

Accessories	Contents	REF
BegoSol® CC mixing liquid*	1 l bottle	54907
BegoSol® CC mixing liquid*	5 l canister	54908
Silicone mould former	1 set	54877

DIN EN ISO 15912

Product details

Availability	Contents	REF
VarseoVest C&B, 80 × 160 g bag	12.8 kg carton	54894
VarseoVest C&B, 30 × 160 g bag	4.8 kg carton	54895
Testset VarseoVest C&B incl. mixing liquids	1.6 kg set	54896
The packages do not contain any mixing liquid.		



* BegoSol® K is sensitive to freezing.
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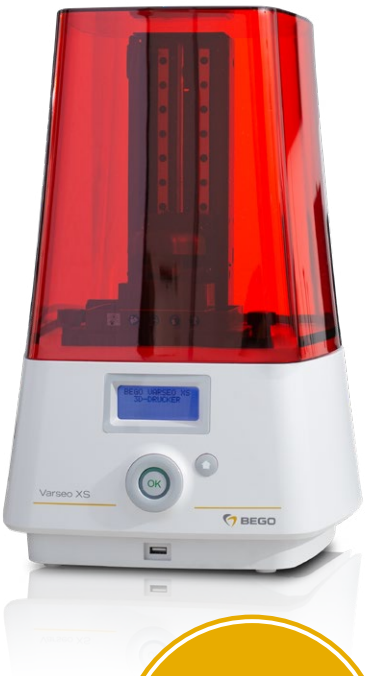

www.bego.com

Compatibility Overview
3D Printers and
BEGO Varseo Materials:

Overview BEGO
3D printing materials:

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