

VarseoSmile Crown ^{plus}

- de** Gebrauchsanweisung
- en** Instructions for use
- fr** Instructions d'utilisation
- es** Instrucciones de uso
- it** Istruzioni per l'uso
- ru** Инструкция по применению

VarseoSmile Crown^{plus}

Resin for 3D printing of permanent single crowns, inlays, onlays and veneers.

1. Intended use/Indication

VarseoSmile Crown^{plus} is a light-curing, free-flowing plastic based on methacrylic acid esters for the production of permanent single crowns, inlays, onlays and veneers.

2. Contraindications

Known allergy to one or more ingredients. In cases of doubt, the allergy should be clarified and ruled out based on a specific test prior to the application of this product. VarseoSmile Crown^{plus} should not be used for purposes other than the production of permanent single crowns, inlays, onlays and veneers. Any deviation from these instructions for use can have negative effects on the chemical and physical quality of plastics made from VarseoSmile Crown^{plus}.

3. Safety instructions

VarseoSmile Crown^{plus} is produced and tested according to the most stringent quality standards. In order to ensure optimum further processing, please read the information contained in the instructions for use carefully. The improper use of VarseoSmile Crown^{plus} and failure to follow information can have a detrimental effect on the quality of objects produced from VarseoSmile Crown^{plus} 3D resin. Nitrile gloves, safety goggles and a coat must be worn as a means of protection when handling the resin and the plastic that has not been post-cured. Conventional medical gloves do not offer any lasting protection against the sensitising effect of methacrylates. If the product comes into contact with the glove, take the glove off and discard it, wash your hands immediately with water and soap and put on a new glove. Consult a physician in the event of an allergic reaction.

The safety and care instructions set down in the VarseoSmile Crown^{plus} instructions for use and safety data sheet shall apply to the handling of liquid resin and printed objects that have not been post-cured (objects in the “green condition”). A dust mask must be worn too due to potential dust formation while the printed objects are being processed. It is prohibited to use plastic parts made of VarseoSmile Crown^{plus} as auxiliary equipment for food and drinks applications.

4. Side effects and precautions

Precautions/Protection

It is essential that protective clothing be worn when handling VarseoSmile Crown^{plus}. Safety goggles and nitrile gloves must be used. Further information on handling the product can be found in the safety data sheet and also downloaded from the BEGO Download Centre at www.bego.com. However, we cannot completely rule out the possibility of personal reactions to individual components in isolated cases. In such cases, the respective user should discontinue use of VarseoSmile Crown^{plus}. If intolerances or allergic reactions occur when it comes into contact with the patient, discontinue use of the material.



WARNING

Information on hazards as per MSDS

- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May cause long harmful effects to aquatic life.

Safety instructions as per MSDS

- Avoid breathing mist/vapours/spray.
- Avoid release to the environment.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Call a POISON CENTER/doctor if you feel unwell.
- If skin irritation or rash occurs: Get medical advice/attention.
- If eye irritation persists: Get medical advice/attention.
- Dispose of contents/container as per local and national regulations.

Contains:

Esterification products of 4,4'-isopropylidiphenol, ethoxylated and 2-methylprop-2enoic acid.
Silanized dental glass, methyl benzoylformate, diphenyl(2,4,6-trimethylbenzoyl)phosphine oxide.
Total content of inorganic fillers (particle size 0.7 µm) is 30–50% by mass.

5. General information on handling

Delivery

VarseoSmile Crown^{plus} is supplied in seven colours according to the VITA* classical shade system, in lightproof and sealed bottles.

Filling quantity:

- REF 41107 = 500 g, A1 Dentin
- REF 41117 = 250 g, A1 Dentin
- REF 41108 = 500 g, A2 Dentin
- REF 41118 = 250 g, A2 Dentin
- REF 41109 = 500 g, A3 Dentin
- REF 41119 = 250 g, A3 Dentin
- REF 41110 = 500 g, B1 Dentin
- REF 41120 = 250 g, B1 Dentin
- REF 41111 = 500 g, B3 Dentin
- REF 41121 = 250 g, B3 Dentin
- REF 41112 = 500 g, C2 Dentin
- REF 41122 = 250 g, C2 Dentin
- REF 41113 = 500 g, D3 Dentin
- REF 41123 = 250 g, D3 Dentin

Please check the following points on receipt of the goods:

- Integrity of the bottle/pack
- Quantity
- Shipping documents and designation

Storage

VarseoSmile Crown^{plus} must be stored in the original sealed bottle, or in the cartridge at room temperature (approx. 22 °C) in a dark, dry place. It must be ensured that the temperature does not drop below +4 °C and does not exceed +28 °C! The minimum shelf life date printed on the product must be observed. Perfect processing cannot be guaranteed if materials which have exceeded their minimum shelf life date are used.

6. Processing

VarseoSmile Crown^{plus} is one of the system components in the BEGO Varseo 3D print system and has been optimised for use in the Varseo 3D printer.

The printing settings can be found in the instructions for use for the equipment.

Note:

Single crowns, inlays, onlays and veneers

Minimum wall thicknesses anterior teeth	1.0 mm
Minimum wall thicknesses posterior teeth	1.0 mm
Minimal wall thickness, cervical	1,0 mm

* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.

The ideal working temperature of VarseoSmile Crown^{plus} is in the temperature range between 18 °C and 28 °C. **Before the first filling of VarseoSmile Crown^{plus} into the cartridge/resin tank, the material has to be shaken well!**

When decanting, make sure that the printing resin is exposed to daylight for as short a period of time as possible.

For further processing – selecting the resin, setting up the print job – as part of the printing process, follow the Varseo printer instructions for use. **Before starting each printing process, VarseoSmile Crown^{plus} does not need to be mixed, even after long periods, up to a month, of non-use, because solids (fillers) did not settle. Before each print, check for air bubbles between build platform and the bottom of the cartridge. Air bubbles can negatively affect the print result.**

When checking the anti-stick foil after each printing, blank cards from BEGO (REF 19551) or a silicone dough scraper can be used. Avoid sharp objects like a metal spatula, so as not to damage the foil!

Subsequent processing

On completion of printing, the print objects are released from the build platform using the spatula supplied. The print object should be cleaned in two steps with ethanol (96 %) using an ultrasonic bath.

Note: Never fill ethanol directly into the ultrasonic bath; place it in the recommended container (REF 19621) in the ultrasonic bath filled with water. Use an explosion-proof ultrasonic bath.

1. Clean the print object for **3 min** in a reusable ethanol solution (96 %) using an **unheated** ultrasonic bath.
2. The precleaned object must be cleaned thoroughly for **2 min** using a fresh ethanol (96 %) solution with the aid of an **unheated** ultrasonic bath. The print object is then removed from the ethanol bath and sprayed with additional ethanol (96 %) in order to fully rinse off any remaining resin residue.

Tip: Resin residues can also be removed using a brush soaked in ethanol (96 %).

The entire cleaning process should not take longer than 5 minutes as this could otherwise have a detrimental effect on the printed objects (swelling of the object with ethanol). After cleaning, the print object is dried using compressed air under an extraction unit. If there is liquid resin still adhering to the surface of the object, this can be completely removed by spraying again with ethanol (96 %) and re-drying.

Recommended steps for finishing and post-curing process:

1. Remove support structures. They can be removed using either a cutting wheel or side cutters.
2. Sandblast the surface of the objects carefully with Perlablast micro (REF 46092/54302) and at a maximum blasting pressure of 1.5 bar.
3. Check for fit and finish the objects completely. Finishing and contouring can be performed with carbide cutters or diamond grinding stones.
4. Post-curing of objects with BEGO Otoflash or HiLite Power* without model (see table below), followed by cooling time.
5. Optional step: individualization of the post-cured objects is possible with composite stains and is the responsibility of the user. It may affect the color result. Follow manufacturer's instructions.
If this step is not considered, follow the next point.
6. Polish the surface of the objects with pumice stone and polishing compound. Avoid overheating of the resin during polishing. Optimal surface quality is achieved by polishing after post-curing.

The final properties of the print object depend on the post-curing process. These are achieved by light polymerization with the **BEGO Otoflash (two xenon stroboscopic lamps, flash frequency 10 Hz, light spectrum 300–700 nm)** or with the **HiLite Power*, Fa. Heraeus Kulzer (a xenon stroboscope lamp, flash frequency 20 Hz, light spectrum 390–540 nm)**.

VarseoSmile Crown ^{plus}			
Post-curing device	BEGO Otoflash (with protective gas)	HiLite Power*	Comments
Flash	2 x 1,500	–	Turn object between the exposure cycles
Time [seconds]	–	2 x 90	

* This symbol is a commercial designation/registered trademark of a company which is not part of the BEGO company group.

Note: When employing the BEGO Otofash, use the protective gas function. This results in a further reduction of the already low remaining monomer content. To do so, set the protective gas function to switch position 1. Details can be found in the instruction manual for the post-curing device.

Note: The times given only apply to regularly maintained equipment that guarantees a corresponding light intensity.

7. Storage and transportation of printed objects

The completely cured print objects must be stored at room temperature and protected from sources of bright light.

8. Cleaning in the dental laboratory and dental practice

Fully cured objects made from VarseoSmile Crown^{plus} can be easily cleaned and disinfected. Steam cleaning (e. g., with Triton SLA) is possible. Disinfection in the immersion bath (e. g. ethanol 96 % or MD 520* impression disinfectant, Dürer Dental Co.) is also possible. Follow manufacturer's instructions.

9. Note for practitioners

Restorations can undergo high-gloss polishing with composite polishers commonly used in dental practice. The finished permanent restorations can be attached using self-adhesive cements (e. g. RelyX Unicem*, 3M Espe) or composite cement with a primer (e. g. Variolink Esthetic DC* and Monobond Plus*, Ivoclar Vivadent). Observe the instructions for use of the luting agent.

10. Disposal

The cured, separated material (base plate, support structure) can no longer be used. Cured material can be disposed of as domestic waste. Unused resin or ethanol used for cleaning with resin residues must be disposed of via the local waste disposal authority or a hazardous waste collection point stating the safety data sheet.

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11. Material properties and scope of delivery

Physical data			
Colour*, **	A1 Dentin, A2 Dentin, A3 Dentin, B1 Dentin, B2 Dentin, C2 Dentin, D3 Dentin	Flexural strength**	≥ 116 MPa
Density*	ca. 1,4–1,5 g/cm ³	Layer thickness when printing	50 µm
Viscosity*	2.500–6.000 mPa*s	Wavelength 3D-printer	405 nm

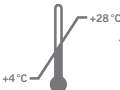
* applies to liquid resin ** applies to cured plastic

Delivery form					
	Contents	Presentation	Qty	REF	
VarseoSmile Crown ^{plus} , A1 Dentin	500 g	bottle	1	41107	
VarseoSmile Crown ^{plus} , A1 Dentin	250 g	bottle	1	41117	
VarseoSmile Crown ^{plus} , A2 Dentin	500 g	bottle	1	41108	
VarseoSmile Crown ^{plus} , A2 Dentin	250 g	bottle	1	41118	
VarseoSmile Crown ^{plus} , A3 Dentin	500 g	bottle	1	41109	
VarseoSmile Crown ^{plus} , A3 Dentin	250 g	bottle	1	41119	
VarseoSmile Crown ^{plus} , B1 Dentin	500 g	bottle	1	41110	
VarseoSmile Crown ^{plus} , B1 Dentin	250 g	bottle	1	41120	
VarseoSmile Crown ^{plus} , B3 Dentin	500 g	bottle	1	41111	
VarseoSmile Crown ^{plus} , B3 Dentin	250 g	bottle	1	41121	
VarseoSmile Crown ^{plus} , C2 Dentin	500 g	bottle	1	41112	
VarseoSmile Crown ^{plus} , C2 Dentin	250 g	bottle	1	41122	
VarseoSmile Crown ^{plus} , D3 Dentin	500 g	bottle	1	41113	
VarseoSmile Crown ^{plus} , D3 Dentin	250 g	bottle	1	41123	

12. Equipment

VarseoSmile Crown^{plus} has been designed for use in the Varseo printers from BEGO Bremer Goldschlägerei Wilhelm-Herbst GmbH & Co KG.

13. Label symbols

	Manufacturer		Consult instructions for use
	Batch code		Use by date
	Catalogue number		Caution
	Keep away from sunlight		Temperatur limit
	CE mark		For professional use only

www.bego.com



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