en VarseoSmile Temp

Instructions for use

VarseoSmile Temp
Resin for 3D printing of temporary crown and bridge restorations, inlays, onlays and veneers.

1. Intended purpose / Indication
VarseoSmile Temp resin is indicated for the fabrication of temporary dental restorations in conjunction with extra-oral light-curing equipment.

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 device.

VarseoSmile Temp should not be used for purposes other than temporary crown and bridge work. Any deviation from these instructions for use can have negative effects on the chemical and physical quality of plastics manufactured from VarseoSmile Temp.

3. Safety instructions
VarseoSmile Temp is manufactured 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 Temp and failure to follow information can have a detrimental effect on the quality of plastics manufactured from VarseoSmile Temp 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 device 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 doctor in the event of an allergic reaction.

The safety and care instructions set down in the VarseoSmile Temp 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 "green condition"). A dust mask must be worn too due to potential dust formation while the printed objects are being processed.

The use of plastic parts made of VarseoSmile Temp as auxiliary equipment for food and drink applications is prohibited.

4. Side effects and precautions
Precautions / Protection
It is essential that protective clothing be worn when handling VarseoSmile Temp. 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 Temp. If intolerances or allergic reactions occur when it comes into contact with the patient, discontinue use of the material.



DANGER

Information on hazards as per MSDS
- Causes skin irritation.
- May cause an allergic skin reaction.
- Causes serious eye irritation.
- May cause respiratory irritation.
- May damage fertility or the unborn child.



DANGER

Safety instructions as per MSDS
Prevention
- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Avoid breathing dust.
- Wash thoroughly after handling.
- Use only outdoors or in a well-ventilated area.
- Contaminated work clothing must not be allowed out of the workplace.
- Wear protective gloves / protective clothing / eye protection / face protection.

Response
- If on skin: Wash with plenty of water and soap.
- If inhaled: Remove person to fresh air and keep comfortable for breathing.
- If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- If exposed or concerned: Get medical advice / attention.
- Call a poison center / doctor if you feel unwell.
- Specific treatment (see first aid instruction on this label).
- If skin irritation occurs: Get medical advice / attention.
- Take off contaminated clothing and wash it before reuse.
- Wash contaminated clothing before reuse.

Storage
- Store in a well-ventilated place. Keep container tightly closed.
- Store locked up.

Disposal
- Dispose of contents / container to a facility in accordance with local and national regulations.

Contains:
Esterification products of 4,4'-Isopropylidiphenol, ethoxylated and 2-methylprop-2enoic acid, silanized dental glass, methylbenzoylformate, diphenyl(2,4,6-trimethylbenzoyl) phosphine oxide.
Overall share of inorganic Fillers (particle size 0.7 µm) totals 30–50% by mass.

5. General information on handling
Supply
VarseoSmile Temp is supplied in the shades A2 Dentin, A3 Dentin, C2 Dentin as per the VITA* classical shade system and one BEGO Bleach Shade, in lightproof and sealed bottles.

Filling quatity:
- REF 41102US = 250 g, A2 Dentin
- REF 41022US = 500 g, A2 Dentin
- REF 41103US = 250 g, A3 Dentin
- REF 41023US = 500 g, A3 Dentin
- REF 41104US = 250 g, C2 Dentin
- REF 41024US = 500 g, C2 Dentin
- REF 41106US = 250 g, BL Dentin
- REF 41026US = 500 g, BL Dentin

Note: The availability of individual product variants may vary from region to region. The latest product information can be found on the BEGO website.

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

CAUTION: Expected results cannot be guaranteed if materials which have exceeded their minimum shelf life date are used or if storage instructions are not followed.

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

6. Processing requirements
1. Design
- Digital crown, bridge, inlay, onlay and veneer file: STL file format

Note:
- Life time of printed restorations is limited for 12 month.
- Max. construction length for bridges 7 units.
- Pontic max. one molar width!
- Observe minimal wall thicknesses for crowns and connectors cross-sectional areas for finished restorations:

Crowns, inlays, onlays and veneers

Minimum wall thicknesses anterior teeth	1.0 mm
Minimum wall thicknesses posterior teeth	1.0 mm

Bridges

Anterior teeth area	Minimum wall thicknesses crown	1.0 mm
	Minimum cross sectional area of the connector	12 mm²
Posterior teeth area	Minimum wall thicknesses crown	1.5 mm
	Minimum cross sectional area of the connector	16 mm²

2. Nesting & preparation for printing
- Import STL file
- Manual / Automatic rotation and placement
- Optimal orientation: horizontal, occlusal plane facing the build platform
- Manual / Automatic generation of supports

3. Printing
VarseoSmile Temp has been verified and validated in combination with various system components (3D printers, cleaning devices and post-curing devices). We are constantly working on further qualifications. You can find these compatible system components on our website
https://usa.bego.com/3d-printing/compatibility-overview/
Please pay special attention to the build platform and resin tank materials as noted in the compatibility matrix.

An example list of compatible 3D additive manufacturing printers and their operation software:

Compatible 3D Printers

3D Printer Model	Wave-length	Printer Firmware	Nesting Software	Provider
Varseo	405 nm	1.14 or higher	BEGO CAMCreator Print Version 1.14 or higher	BEGO
Varseo L	405 nm	1.02 or higher		
Varseo S	405 nm	1.14 or higher		
Varseo XS	405 nm	2.6.8.24 or higher		
ASIGA MAX UV	385 nm	2018-09-03	ASIGA Composer	ASIGA

WARNING: This material is suitable for manufacturing highly reliable dental products only when using BEGO approved compatible systems including the material parameters. If unapproved components or material parameters are used, there is a high risk of unreliable and / or unusable products which may endanger the safety of the user.

CAUTION: It is important to follow the instructions for use and maintenance instructions provided by the manufacturer for all system components.

4. Necessary tools, equipment and materials for post-processing
- Stainless steel spatula
- Unheated ultrasonic bath
- Ethanol solution 96 %
- Spray bottle with 96 % ethanol solution
- Cutting wheel or side cutters (for support structure removal)
- Sandblaster 1.5 bar
- Glass bead blasting material 50 µm (e. g. Perlablast® micro, REF 46092 / 54302)

7. Processing
The following instructions contain details of a validated workflow for the 3D printing process with a compatible 3D printer.

VarseoSmile Temp's ideal working temperature is in the temperature range between 18 °C and 28 °C.

Before use, the resin must be homogeneous. Before the first use, the material has to be shaken well about 2 min. When decanting, make sure that the printing resin is exposed to daylight for as short a period of time as possible. Mix the resin in the cartridge / resin tank if a transparent layer is visible on the surface.

For further processing – selecting the resin, material parameter, setting up the print job – as part of the printing process, follow the respective printer instructions for use.

Cleaning and preparation for post-curing
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. For additional cleaning devices and methods refer to
https://usa.bego.com/3d-printing/compatibility-overview/

CAUTION: 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 %).

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CAUTION: 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.

Preparation for post-curing

- Remove the support structure with the help of a cutting wheel or side cutters.
- Remove the white layer using a glass bead blasting material 50 µm (e. g. Perlablast® micro, REF 46092 / 54302) at a maximum blasting pressure of 1.5 bar.
- Check for fit and finish the objects completely. Finishing and countouring can be performed using carbide cutter or diamond grinding stones.

Post-curing process

The final properties of the printed object depend on the post-curing process. Please note the assignment of the light curing device to the 3D printer of the approved system components.

The post-curing of the object is done without use of a model, then allow to cool for 3–5 minutes or until the object feels cool.

VarseoSmile Temp has been verified and validated in combination with various system components (3D printers, cleaning devices and post-curing devices). You can find these compatible system components on our website
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An example list of compatible post-curing devices:

Post-curing

3D Printer	Light-curing Device	Exposure Cycles	Additional Information
BEGO Varseo	BEGO-Otoflash	2 x 1,500 flashes	Turn object between the exposure cycles
BEGO Varseo L			
BEGO Varseo S	HiLite-Power*	2 x 90 seconds	
BEGO Varseo XS			
ASIGA MAX UV			

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

CAUTION: If there is an interruption or failure in the post-curing device cycle, the printed object should not be used until it has cured under a full cycle. Check the post-curing device manual for use for how to properly resolve the post-curing device condition and then repeat the post-curing cycle with the printed objects.

Supplementing / Repairing of printed objects
Defects (e. g. missing contact points, fractures, etc.) can be supplemented with the resin.

- Blast the areas to be supplemented with aluminum oxide (e. g. Korox® 110, BEGO) – pressure 1.5 bar and particle size 110 µm (e. g. Korox® 110, BEGO).
- Put some liquid VarseoSmile Temp on the object.
- Put it under light for a short time (e. g. 5 flashes) in the BEGO Otoflash.
- If more material has to be applied, put additional liquid VarseoSmile Temp on the last layer and then put it again under light for a short time (e. g. 5 flashes) in the BEGO Otoflash.
- Follow the instructions in the section “post-curing process” for final curing of the objects.

CAUTION: The dental object may only be repaired or supplemented outside the patient’s mouth and by a dental professional.

Polish

Polish the surface of the objects with pumice stone and polishing compound. Avoid overheating of the restorations during polishing. Optimal surface quality is achieved by polishing after post-curing.

Tip: Optionally, the surface of the objects can be coated with light-curing glaze (e. g. Vita ENAMIC GLAZE*, Vita Zahnfabrik or GC OPTIGLAZE*, GC). Pay attention to the manufacturer`s instructions for use.

8. Cleaning in the dental laboratory and dental practice

Fully cured crowns and bridges made from VarseoSmile Temp 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, Dürr Dental Co.) is also possible.

Follow manufacturer’s instructions.

9. Notice for polishing and luting

- The temporary restoration can undergo high-gloss polishing with composite polishers commonly used in dental practice.
- The finished restoration can be attached using conventional temporary cements (e. g. Temp Bond NE*, Kerr Co.).
- If the subsequent temporary restoration is to be attached using methacrylate-based composite cement, the use of eugenol-free temporary cements is recommended.
- Observe the instructions for use of the luting agent. It is not required to etch the restoration before attaching.
- Additional exposure to curing lights after attachment will not affect the properties of the finished Object.

10. Disposal

The cured, separated material (base plate, support structure) can no longer be used. Cured material can be disposed of as domestic waste.

11. Material properties and scope of delivery

Physical data

Colour*, **	A2 Dentin, A3 Dentin, C2 Dentin, BL Dentin	Flexural strength**	≥ 100 MPa
Density	approx. 1.4–1.5 g/cm³	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

12. Label symbols

Manufacturer	Use-by date
Date of manufacture	Caution
LOT Batch code	Temperature limit
REF Catalogue number	Rx ONLY For professional use only
Keep away from sunlight	MR MR Safe
Consult instructions for use	Contains hazardous substances

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