www.bego.com

VarseoWax CAD/Cast

GEBRAUCHSANWEISUNG
INSTRUCTIONS FOR USE
INSTRUCTIONS D'UTILISATION
INSTRUCCIONES DE USO
ISTRUZIONI PER L'USO
ИНСТРУКЦИЯ ПО ПРИМЕНЕНИЮ

Partners in Progress

BEGO

VarseoWax CAD/Cast

Resin for the 3D printing of burnout partial denture and crown and bridge frames.

1. Intended use / Indication

VarseoWax CAD/Cast is a resin for the 3D printing of burnout objects. It is restricted to use in dental applications and may only be used by dental staff.

2. Contraindications

VarseoWax CAD/Cast is intended exclusively for creating burnout objects within the scope of dental frame production. VarseoWax CAD/Cast is not approved for any other indications. VarseoWax CAD/Cast is **not** a medical device as defined by Directive 93/42/EEC; it must **not** be brought into direct contact with patients (e.g., trial fitting in patient's mouth)!
Please contact a practitioner / doctor if an allergic reaction or intolerance occurs.

3. Safety instructions

VarseoWax CAD/Cast 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. Improper use and failure to observe the information can have a detrimental effect on the quality. Nitrile gloves, goggles and a coat must be worn as a means of protection.

Instructions on how to handle plastic parts made of VarseoWax CAD/Cast
The safety instructions and precautions set down in the VarseoWax CAD/Cast instructions for use and safety data sheet shall apply to the handling of liquid resin and 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 VarseoWax CAD/Cast as auxiliary equipment for food and drinks applications.

Depending on the furnace temperature, combustion gases that are harmful to health may form while the invested objects are being preheated and burnt out. A sufficiently high temperature in the preheating furnace helps the cured plastic to combust completely to carbon dioxide, water and nitrogen oxides. At temperatures of 700 °C or more, the residual ash content is less than 0.1 % by weight and satisfies the specifications set down in ISO 15854 (casting and baseplate waxes). It is advisable to position the preheating furnace used for burning-out purposes beneath an extraction hood with sufficient performance.

4. Side effects and precautions

Inhalation
Irritates the respiratory organs. High concentrations can lead to irritation of the respiratory passages, dizziness, headaches and loss of consciousness.

Skin contact
Sensitisation or irritation are possible from contact with the skin. Repeated and/or extended skin contact can cause inflammations.

Eye contact
High air concentrations can lead to eye irritations.

Swallowing
Low oral toxicity; ingestion can, however, lead to irritation of the gastrointestinal tract.

Precautions/Protection
It is essential that protective clothing be worn when handling VarseoWax CAD/Cast. 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 user should discontinue use of VarseoWax CAD/Cast.

DANGER

Information on hazards as per MSDS

- Causes severe skin burns and eye damage.
- May cause an allergic skin reaction.
- May damage fertility or the unborn child.
- Toxic to aquatic life with long lasting effects.
- Contains Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane, 2-propenoate; Poly[oxy (methyl-1,2 ethanediyl)], .alpha.,.alpha.',.alpha.''-1,2,3 propanetriyltris[.omega.-[(1-oxo-2-propenyl)oxy]-. May produce an allergic reaction.

Safety instructions as per MSDS

- Obtain special instructions before use.
- Do not breathe dust/fume/gas/mist/vapours/spray.
- Wash skin thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.
- IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
- 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.
- Immediately call a POISON CENTER/doctor.
- Collect spillage.

"Restricted to professional users"

Contains:
7,7,9(or 7,9,9)-trimethyl-4,13-dioxo-3,14-dioxa-5,12-diazahexadecane 1,16-diyl bismethacrylate; tetrahydrofurfuryl-acrylate; phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

5. General information on handling

Delivery

VarseoWax CAD/Cast is supplied in light-tight, sealed bottles.
Filling quantity:

- REF 41000 = 1 kg
- REF 41105 = 250 g

Please check the following points on receipt of the goods:
- Integrity of the bottle/pack
- Quantity
- Shipping documents and designation

Storage
VarseoWax CAD/Cast must be stored in the original sealed bottle at room temperature (approx. 22 °C) in a dark, dry place. It must be ensured that the temperature does not drop below +5 °C and does not exceed +35 °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

VarseoWax CAD/Cast 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 respective equipment.
Please wear protective gloves (nitrile gloves), protective clothing, goggles and/or face protection during processing!
The ideal working temperature range for VarseoWax CAD/Cast is between 20 and 30 °C. **The material must be shaken thoroughly for approx. 5 min before being poured into the clean Varseo container.** 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 respective Varseo printer instructions for use. Before starting any printing procedure, VarseoWax CAD/Cast must be mixed so as to form a homogeneous mixture. Insufficient mixing can lead to deviations in the colour of the printing resin.

Subsequent processing
On completion of printing, the print objects are detached from the build platform by actuating the ejector* and/or 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.

* Varseo and Varseo L cartridges

1. Clean the print object for 3 min in a reusable ethanol solution (96 %) in an **unheated** ultrasonic bath.
2. Then fully clean the object for 2 minutes in a fresh ethanol solution (96 %). Remove the print object from the ethanol bath and spray it with additional ethanol (96 %) to rinse off any remaining resin residue completely.
   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 objects. After cleaning, the print object is dried using compressed air, if possible under suction. If there is liquid resin still adhering to the print object, this can be completely removed by spraying again with ethanol (96 %) and re-drying.

Finishing
Remove support structure using either a cutting wheel or side cutters. It must be ensured that the printed object is not deformed!
The completely cleaned print objects must be post-cured to attain the required material properties. The final properties of the print object depend on the post-curing process. The final material properties are achieved using light polymerisation units with the following performance data: two xenon stroboscopic lamps, flash frequency 10 Hz, light spectrum 360–700 nm (e.g., BEGO Otoflash) or one xenon stroboscopic lamp, flash frequency 20 Hz, light spectrum 390-540 nm (e.g., HiLite Power, Heraeus Kulzer).

VarseoWax CAD/Cast			
Post-curing device	BEGO Otoflash	HiLite Power	Note
Flash	1 x 500	–	Post-curing on the model
Time [seconds]	–	1 x 90	

Alternatively, the necessary strength can also be achieved with a unit with the following performance data: four 18 W/71 lamps (Dulux L Blue); and four 18 W/78 lamps (Dulux blue UV-A). The determined time is based on the UVA lamp performance.

Intensity / post-curing conversion table				
	Time [min]	Wavelength [nm]	UV-A output [W]	Intensity
VarseoWax CAD/Cast	10	315–400	72	43.2 kJ [W x sec = J]
Conversion for equipment with different UV-A lamp outputs				
VarseoWax CAD/Cast	20	315–400	36	
VarseoWax CAD/Cast	30	315–400	24	
VarseoWax CAD/Cast	40	315–400	18	

Note: Post-curing is strongly recommended in the case of extended storage and transport periods!

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

7. Storage and transportation of printed objects

Post-curing is strongly recommended prior to extended storage and transport periods!
The fully cured print objects are ideally stored at room temperature away from light and transported in a suitable, light-tight transport box!

8. Cleaning and preparing the cast object

Grinding dust can easily be completely removed from fully cured VarseoWax CAD/Cast objects before they are invested for casting purposes either by holding them under running water or by spraying them with ethanol and blowing them off again.
Please prepare the created cast object for casting as per the dental casting technology specifications. Within the context of further processing, please follow the instructions for use and the safety instructions for the investment material used*, as well as the setting recommendations for the mixer, furnace and casting unit used.

9. 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.

* Partial denture: Investing with VarseoVest P^{plus}. Crown & Bridges: investing with VarseoVest C&B.
VarseoVest P^{plus} and VarseoVest C&B are the phosphate-bonded shock-heat precision investment materials that has been specially developed and coordinated to casting 3D-printed objects.

10. Material properties and scope of delivery

Material parameters			
Colour	opaque yellow	Flexural modulus	≥ 1,500 MPa
Viscosity	600–900 mPa*s	Shore hardness	79–83 D
Density at 22 °C	1.08 g/cm³	Thermal stability	55°C at 1.8 MPa
Flexural strength	≥ 50 MPa	Residual ash content	≤ 0.1 % at 700 °C
Wavelength	405 nm		

Delivery form	Contents	Presentation	Qty	REF
VarseoWax CAD/Cast	1 kg	bottle	1	41000
VarseoWax CAD/Cast	250 g	bottle	1	41105

11. Equipment

VarseoWax CAD/Cast has been designed for use in the Varseo printers from BEGO Bremer Goldschlägerei Wilhelm-Herbst GmbH & Co KG.

12. Label symbols


Manufacturer

Batch code

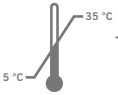
Catalogue number


Keep away from sunlight


Consult instructions for use


Use by date


Caution



Temperatur limit

For professional use only

www.bego.com

Manufacturer

BEGO Bremer Goldschlägerei Wilh. Herbst GmbH & Co. KG
Wilhelm-Herbst-Str. 1 · 28359 Bremen, Germany
Tel. +49 421 20 28-0 · Fax +49 421 20 28-100
www.bego.com · E-Mail: info@bego.com

REF 19575/04 · D4M18068 · © 2019 by BEGO · 20190206