

## INSTRUCTIONS FOR USE

Phosphate-bonded chrome casting investment

### 1. Indication

Chrome casting investment for gel and silicone duplication using the traditional heating process, silicone duplication for speed casting as well as light-curing wax technique using the traditional heating process.

### 2. General indications

Even tiny residues on the working tools - even from cleaning agents - can have a negative effect on the casting result. Please use the respective spatula and mixing bowl exclusively for processing phosphate-bonded investment material and always leave the mixing bowl filled with water after use and cleaning.

### 3. Safety instructions

Attention! Investment materials contain quartz! Do not inhale dust. Danger of lung diseases (silicosis or cancer). Wear dust mask! Please use a fine dust mask when weighing and mixing the powder and devesting the investment ring.

### 4. General recommendations

#### SHERAMUFFELFORMER

We recommend the use of SHERAMUFFELFORMERS to ensure open pores in the investment material.

SHERAMUFFELFORMERS consist of a thermoelastic and heat-insulating material. This supports the chemical reaction of the investment material, as the "thermos flask effect" results in a better temperature curve with an even and undisturbed expansion.

#### SHERARELAXA

To relax the surface of waxes and to improve the flow properties of investment materials, we recommend SHERARELAXA. If necessary, spray the wax-up very thinly with SHERARELAXA and invest directly without allowing the film to dry.

#### Duplication

Make the silicone mould from a soft silicone. We recommend DUOSIL H (Shore hardness A 17) for this purpose. Please use a duplicating flask without stabilising frame for duplicating. To make the investment model, place the silicone mould without the flask on the flask base and pour it out.

### 5. Technical data

Working temperature: 20 - 23°C powder and liquid.  
(ideally 21°C in the temperature cabinet, 24 - 25°C for gel duplication)

SHERALIQUID is an expansion liquid for all SHERA investments. SHERALIQUID is mixed with distilled water according to the mixing ratios below.

Mixing tables are available at [www.shera.de](http://www.shera.de) under each product.

#### Mixing ratio

	Pulver	Gesamt-flüssigkeit	davon SHERALIQUID	davon entmineralisiertes Wasser
Geldublierung	100 g	19 ml	13,3 ml (70%)	5,7 ml (30%)
Slikondublierung	100 g	21 ml	16,8 ml (80%)	4,2 ml (20%)
Überbettung	100 g	21 ml	10,5 ml (50%)	10,5 ml (50%)
	400 g	84 ml	42 ml (50%)	42 ml (50%)
Lichtwachs (siehe Pkt. 9 )	100 g	21 ml	16,8 ml (80%)	4,2 ml (20%)
	600 g	126 ml	101 ml (80%)	25 ml (20%)

#### Recommendations and indications regarding expansion

By adjusting the ratio / proportion of the liquids, the expansion can be changed:

more SHERALIQUID = higher expansion

less SHERALIQUID = lower expansion.

Our recommendations are based on test results from our laboratory and are guidelines. Various factors on site such as room temperature, humidity or the settings of the vacuum mixer can influence the results.

### 6. Processing

#### Model production when duplicating with silicone

- Processing time: 4 - 6 minutes
- Fill powder into mixing cup and weigh out.
- Add the mixed liquid. (Start timing from 20 minutes!)
- Mix well by hand for 15 seconds.
- Stir for 45 seconds under vacuum;
- Stirring speed 350 rpm.
- Pour the investment material evenly into the mould from one side at a low vibration level.
- The thinnest part of the model should be at least 1 cm.
- Remove the model from the mould after 20 minutes and then dry at 100°C for 20 minutes.
- Modeling the parcial frame.
- Attach casting channels and cones

#### Model production when duplicating with gel

- The gel form should be dry and lulkewarm before pouring.
- Put the powder into stirring cup and weigh.
- Add the mixed liquid. (Start timing from 30 minutes!)
- Mix well by hand for 15 seconds.
- Stir for 60 seconds under vacuum;
- Stirring speed 350 rpm.
- Pour the investment material evenly into the mould from one side at a low vibration level.
- The thinnest part of the model should be at least 1 cm.
- Demould the model after 30 minutes and then dry at 180°C for 30 minutes.
- Submerge in immersion hardener (SHERAPOR-L or SHERAPORAL) for 2 seconds.
- Modeling the parcial frame.
- Attach casting channels and cones.

## INSTRUCTIONS FOR USE

### Muffle filling

- Place the model on the open hole of the muffle bottom of the SHERAMUFFELFORMER MG. (Figure 1)
- Fix the model edge on the muffle base with adhesive wax (higher melting point) without any gaps. (Figure 2)
- Place the thin side of the ring of the SHERAMUFFELFORMER MG in the base of the ring. (Figure 3)
- Mix investment material for filling the muffle. (Start time measurement of 20 minutes!)
- Allow the investment material to run in without vibrating.
- Place the investment ring after 20 minutes for speed casting.



Figure 1

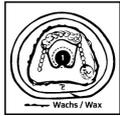


Figure 2

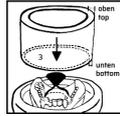


Figure 3

## 7. Heating up / Pre-heating Vorwärmen

### General information

- Break edges of the muffle with a clean knife before placing, make sure that nothing falls into the cone. Muffle should not be trimmed (plaster residues / water absorption of the muffle).
- Place the muffle in the furnace with the cone to one side on a perforated or grooved ceramic base plate.

### Konventional heating

- After 20 minutes at the earliest - counting from the beginning of the mixing process - place the muffle in a cold furnace.
- Heating rate: at up to 20°C/min. (holding stages are not required, except for light-curing wax technique).
- Hold final temperature (according to alloy) for at least 45 minutes. For SHERA alloys, a final temperature of 850°C applies.

### Speed casting

- After 20 minutes - counting from the beginning of the mixing process - place the muffle in a furnace at a maximum temperature of 850°C for at least 45 minutes. If necessary, continue heating to final temperature. For SHERA alloys, a final temperature of 850°C is sufficient.

## 8. Casting

- After a holding time of at least 45 minutes at the final temperature, casting can be carried out according to the alloy manufacturer's instructions.
- If several muffles are preheated in the furnace, the holding time per muffle must be extended by 10 minutes.
- Our recommendation is a final temperature of the muffle of 850°C.
- Melt the alloy according to the manufacturer's instructions.

## 9. Cooling

Cool the muffle to room temperature. Do not quench with water.

## 10. Demoulding

Remove the investment material as usual. Suck the dust and do not hit the object or the cone.

## 11. Specifics of light-curing wax technique

- Wet the surface of the light-curing wax with a relaxing agent (SHERARELAXA) shortly before filling in the investment.
- Filling in the investment (see table).
- Conventional heating (see point 6.1).
- Holding temperature: 30 minutes at 350°C.
- Final temperature: 850°C (hold for at least 45 min).

## 12. Storage

Store powder and liquid in a dry place, the processing temperature is between 20 - 23°C (ideally 21°C in a temperature cabinet).

SHERALIQUID is sensitive to cold. If stored or transported below +5°C, the liquid will be damaged and should no longer be used. It is therefore often not possible to ship the liquid during the winter months. Please build up a winter stock in good time.

Store the investment material and its tools separately from the plaster processing equipment, as they have a negative effect on each other.

## 13. Information / Feedback:

Further information, mixing tables and safety data sheets are available at [www.shera.de](http://www.shera.de) under each product.

If you have any questions, please contact our service team at +49 (0) 5443 9933 0.

Please always state the batch designation when giving feedback on the product.

## 14. Guarantee

SHERA Werkstoff-Technologie GmbH & Co. KG is DIN EN ISO 13485 certified and guarantees excellent product quality using a comprehensive quality assurance process. Our user recommendations are based on the benchmark values obtained at our test laboratory. These values can only be guaranteed when adhering to the listed processing phases. The user assumes the responsibility for the processing of the product. We assume no liability for incorrect results as SHERA has no influence over how the product is processed after manufacture. Possible compensation claims are limited solely to the value of our product.