

# SHERAVEST RP

## INSTRUCTION MANUAL

Special investment material for 3D-printed resin objects

### 1. Indication

Phosphate-bonded special investment material for the fabrication of casting moulds for 3D-printed resin objects, such as crowns, bridges or chrome castings. The investment is suitable for the following alloys: palladium-based, silver-palladium, nickel-chromium, and cobalt-chromium alloys.

### 2. Contraindication

Not suitable for:

- Titanium or titanium alloys  
We recommend [SHERATITAN-EASY](#) for this purpose
- Gold-containing alloys
- Press ceramics

Even tiny residues on the tools, including plaster or cleaning agents, can have a negative effect on the casting result.

Please use the respective spatula and mixing cup exclusively for processing phosphate-bonded investment material and always leave the mixing cup filled with water after use and cleaning.

### 3. Safety instructions

Attention! Investment materials contain quartz! Do not inhale dust. Risk of lung diseases (silicosis or cancer). Wear a fine dust mask!

Please use a fine dust mask when weighing and mixing the powder and devesting the mould.

### 4. Preparatory & general recommendations

#### 4.1. Storage & processing temperature

- Store powder and liquid in a dry place
- The processing temperature is between 20 - 23°C (ideally 21°C in the 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 make a winter stock in good time.

#### 4.2. SHERAMUFFLEFORMER

We recommend the use of [SHERAMUFFELFORMERS](#) to ensure that the investment material is open-pored. SHERAMUFFELFORMERS are made of a thermoelastic and heat-insulating material. This supports the chemical reaction of the investment, as the "thermos flask effect" results in a better temperature curve with uniform and undisturbed expansion.

#### 4.3. SHERARELAXA

We recommend [SHERARELAXA](#) as a surface relaxant, e.g. for waxes, resins and to improve the flow properties of investment materials.

Mist the modelling very thinly with SHERARELAXA and fill-in the investment directly without allowing the film to dry.

#### 4.4. Preparation of the cast object

- Clean and sanitise the object in accordance with the processing instructions for your material, e.g. SHERAprint-cast & press.
- Check the fit and correct it, if necessary.
- Attach wax sprues and casting funnels to the object, possibly stabilising it with a support bar already in the design so that it is not deformed when the investment material flows in.
- OK chrome castings should be placed at an angle in the mould so that the air can escape better under the base plate during filling. Large base plates should also not separate the mould horizontally, as this can lead to predetermined breaking points.
- The distance from the casting object to the casting object and the mould wall should not be less than 1 cm.
- For large-volume objects such as bridge elements, ensure sufficient investment wall thicknesses.
- Overall, the volume of resin per mould should not be too large.

#### 4.5. Notes on the expansion liquids

[SHERALIQUID](#) is an expansion liquid for all SHERA investment materials. SHERALIQUID is mixed with distilled water according to the following mixing ratios.

#### 4.6. Recommendations and tips for expansion

The expansion can be changed by adjusting the ratio / proportion of liquids:

- more SHERALIQUID = more expansion
- less SHERALIQUID = less expansion.

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



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### 5. Production

#### 5.1. Mixing table

(Example for cobalt-chromium alloys)

Mixing ratio 100g : 20 ml

|   |             |      |       |
|---|-------------|------|-------|
| 3x muffle<br>180 g / 36 ml of total liquid            | SHERALIQUID | 70 % | 25 ml |
|   | dist. water | 30 % | 11 ml |
| 6x muffle<br>320 g / 72 ml of total liquid            | SHERALIQUID | 70 % | 50 ml |
|   | dist. water | 30 % | 22 ml |
| 9x muffle<br>500 g / 100 ml of total liquid           | SHERALIQUID | 70 % | 70 ml |
|   | dist. water | 30 % | 30 ml |
| Chrome cast. muffle<br>600 g / 120 ml of total liquid | SHERALIQUID | 70 % | 84 ml |
|   | dist. water | 30 % | 36 ml |

#### 5.2. Processing time

- Processing time: 4 - 6 minutes
- The processing time is reduced at warmer temperatures.

#### 5.3. Mixing under vacuum

- Pour the powder into a dry vacuum mixing bowl and weigh out.
- Add the mixed liquid. (Start timing, 20 minutes!)
- By hand, mix powder with liquid homogeneously for approx. 15 seconds.
- Start stirring programme (stirring time 60 seconds, 80% vacuum, 350 revolutions/minute)
- After 20 minutes (for speed casting), the mould must be placed on top.
- Only pour in the investment at the lowest vibration level.
- Do not shake the muffle after filling.

### 6. Heating up / preheating

#### 6.1. General information

- Break the edges of the investment ring with a clean knife before placing it, making sure that nothing falls into the casting funnel. The mould should not be trimmed (plaster residue / water absorption of the mould)
- Place the muffle in the furnace with the casting funnel to one side on a perforated or ribbed base plate.

#### 6.2. Speedguss (our recommendation)

- After 20 minutes from the start of the mixing process, place the moulds in a maximum 850°C oven.
- If necessary, depending on the alloy requirements, heating can be continued after 20 minutes, up to a maximum preheating temperature of 980°C.
- Maintain the final temperature for at least 60 minutes.

#### 6.3. Conventional heating

- After at least 20 minutes from the start of the mixing process, place the moulds in the furnace when they have cooled to room temperature.
- We recommend a preheating/casting temperature of the mould of 850°C.
- If necessary, depending on the alloy requirements, heating can be continued after 20 minutes up to a maximum preheating temperature of 980°C.
- Hold the final temperature for at least 60 minutes.

### 7. Pouring

- If several muffles are preheated in the oven, the holding time per muffle must be extended by 10 minutes.
- Hold the final temperature for at least 60 minutes.
- We recommend a final temperature of 850°C for the muffle.
- Melt the alloy according to the manufacturer's instructions.

### 8. Cooling down

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

### 9. Demoulding

Remove the investment as usual. Vacuum off dust and do not hit the object or casting taper. Carefully sandblast the inner surfaces of the crowns during subsequent sandblasting. The fit can also be blasted larger by sandblasting.

### 10. 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 on +49 (0) 5443 9933 0.

When giving feedback on the product, please always state the batch number.

### 11. Waste disposal

Dispose of residues in accordance with local regulations.

### 12. Guarantee

SHERA Werkstoff-Technologie GmbH is certified in accordance with EN ISO 13485 and guarantees flawless quality for its products thanks to an elaborate quality assurance system. Our user recommendations are based on so-called guide values determined in our test laboratory. These values can only be guaranteed if the specified process steps are adhered to. The user is responsible for the processing of the products. SHERA is not liable for faulty results, as SHERA has no influence on further processing. Any claims for damages that may nevertheless arise relate exclusively to the value of our products.

