1. Area of application

Special investment for casting of 3D printed constructions which have been produced in the rapid prototyping procedure, e.g. by a printer of the SHERAeco-print range.
The investment is suitable for the following type of alloys:
Palladium based, silver palladium, nickel chrome and cobalt chrome alloys.

2. Technical data

Working time: 4 to 6 minutes
Working temperature: 20 to 23°C (powder and liquid)
Mixing ratio: 100 g of investment, 20 ml of total liquid

3. Preparing the casting object

- Clean the object according to the instructions for us of the material in use, e.g. SHERAprint-cast.
- Control the fitting and adjust it, if applicable.
- Fix casting sprues and cone at the object that is supposed to be cast. Make sure to possibly stabilize the object with a supporting bar already during designing in order to avoid any deformation while pouring the investment.
- It is very important that the inside of the muffle is open-porous. This is provided by either using SHERAMUFFELFORMER or SHERACASTINGRINGLINERS.
- When using SHERAMUFFELFORMER MG fix the casting object precisely and without any gap with the cone face down onto the muffle base using adhesive wax.
- Place the side of the muffle of the SHERAMUFFELFORMER MG which has a thinner frame onto the muffle base.
- The SHERAMUFFELFORMERs 3x, 6x, 9x provide a cone former on which you can fix your object with the sprues by using wax.
- UJ chrome castings should be placed inclined in the muffle thus enabling the air to escape easier under the base plate which enters, while filling up the muffle. Bigger base plates should not separate the muffle horizontally as this may lead to predetermined breaking points.
- The distance between the casting object and the wall should not be less than 1 cm.
- Fix air escape vents of 1 mm thickness at several areas of the chrome casting, like e.g. clasps and retentions and direct them to the bottom of the muffle. These serve as a pipe during burning out and before casting they help to blow out possible residues.

4. Processing SHERAVEST RP

- Weigh the needed quantity of SHERAVEST RP in a dry vacuum mixing bowl.
- Add the mixed up total liquid in the corresponding concentration and start timing.

Example for non-precious alloys:
Quantities according to the different muffle sizes
3x = 160g = 32ml of total liquid at 66% = 21ml of SHERALIQUID and 11ml of distilled water
6x = 300g = 60ml of total liquid at 66% = 40ml of SHERALIQUID and 20ml of distilled water
9x = 500g = 100ml of total liquid at 66% = 66ml of SHERALIQUID and 34ml of distilled water
MG = 600g = 120 ml of total liquid at 66% = 79ml of SHERALIQUID and 41ml of distilled water

If you change the mixing ratio, you can control the expansion.
The more SHERALIQUID, the higher is the expansion, the more water, the less is the expansion.

- Mix by hand for 15 seconds until the mixture is homogeneous.
- Mix under vacuum for 45 seconds (approx. 80 %); mixing speed of 250 U/min.
- Slightly fog the surface of the casting object with the surface tension release agent (e.g. SHERARELAXA).
- Fill in the investment evenly from one side only at low vibration level (preferably without any vibration).
- Deflask the muffle after 20 minutes.

5. Heating up / preheating

Speed casting:

After 20 minutes – counting from the beginning of the mixing process – place the muffle into the furnace as follows:

- Place the muffle horizontally on its convex side in the front part of the furnace (in order to keep the contact surface as small as possible).
- The cone is directed to the inside of the furnace.
- After approx. 25 minutes the muffle can be moved to the centre of the furnace.
- End temperature: 850°C (hold for at least 45 minutes)

Traditional heating process:

- After 20 minutes – counting from the beginning of the mixing process – place the muffle in the centre of the cold furnace.
- Heating rate: 9°C/min.
- End temperature: 850°C (hold for at least 45 minutes)

6. Casting

- We recommend blowing out the muffle through the cone using the above described air escape vents 15 minutes before casting.
- Afterwards you can cast the muffle as normal.

7. Cooling down

Cool down the muffle slowly to room temperature.

8. Health warning

Attention! Investments contain quartz! Do not breathe dust. Risk of lung diseases (silicosis or cancer). Wear find dust mask!

Please use a fine dust mask when weighing the powder and deflasking the muffle.

Warranty

SHERA Werkstoff-Technologie GmbH & Co. KG is DIN EN ISO13485 certificated and guarantees, due to a throrough quality control system, a flawless quality of its products. All instructions for use are based on the results of our test laboratories. The technical data given can only be guaranteed if the processing is carried out as mentioned. The user is self-responsible for processing of the products. We are not liable for faulty results as SHERA has no influence on the processing. Should any claims arise they are valid for the value of products only.

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