

Perfection through precision

With investments from SHERA you have definitely made a good choice. In order to make sure that you easily achieve perfect results, please follow the below indicated working details, times and temperature specifications *precisely*.

Clean affair

Even tiny little residues on the working equipment – including cleaning agents – might have a negative effect on the casting result. For working with investments please always use a separate spatula and mixing bowl which should be filled up with water after each use.

All equipment items should be kept separately from the instruments used for stone and plaster works.

Furthermore we recommend also thinking to yourself and use a fine dust mask while weighing the powder and devesting the mould.

1. Application

Precision investment for

- crown and bridges as well as for implant technique
- pressable ceramic
- all dental alloys for the conventional heating process and for the rapid burn out

2. Technical data

- Working time: 6 - 7 minutes
- Working temperature: 20 - 23°C powder and liquid
(ideally at 21°C in a temperature chamber)
- Mixing ratio: 160 g powder : 38 ml liquid
100 g powder : 24 ml liquid
60 g powder : 14 ml liquid

3. Overview for the mixing ratio (160 g)

Alloy	Dowel abutment Inlays		Wax crowns		Telescopic crowns <small>Modeled in acrylic: (Please note point 8)</small>		Tapered crowns <small>Modeled in acrylic: (Please note point 8)</small>	
	Alloy with a high gold content 70 % - 80 % Au	16 ml SHERALIQUID	42 %	18 ml SHERALIQUID	47 %	23 ml SHERALIQUID	60 %	22 ml SHERALIQUID
	22 ml distilled water	58 %	20 ml distilled water	53 %	15 ml distilled water	40 %	16 ml distilled water	42 %
Gold reduced alloy 55 % - 65 % Au	17 ml SHERALIQUID	44 %	19 ml SHERALIQUID	50 %	26 ml SHERALIQUID	68 %	25 ml SHERALIQUID	65 %
	21 ml distilled water	56 %	19 ml distilled water	50 %	12 ml distilled water	32 %	13 ml distilled water	35 %
Palladium based alloy	25 ml SHERALIQUID	65 %	26 ml SHERALIQUID	68 %	32 ml SHERALIQUID	84 %	30 ml SHERALIQUID	79 %
	13 ml distilled water	35 %	12 ml distilled water	32 %	6 ml distilled water	16 %	8 ml distilled water	21 %
Non precious alloy	30 ml SHERALIQUID	80 %	34 ml SHERALIQUID	90 %	Reduced total liquid to 34 ml or 34 ml SHERALIQUID 4 ml SHERALIQUID EXTRA	100 %		
	8 ml distilled water	20 %	4 ml distilled water	10 %		90 %		
						10 %		

Pressable ceramic: mixing ratio 100 g : 22 ml

Pressable ceramic	Inlays:		Crowns, veneers:		
	12 ml SHERALIQUID	53 %	13 ml SHERALIQUID	60 %	
	10 ml distilled water	47 %	9 ml distilled water	40 %	

Please always observe the current information of the instructions for use and remember that variations in processing will lead to different results. In case of any technical question, we will be pleased to assist you. Our recommendations are guide lines and are based on results of tests which have been made in our laboratory. Several in-site factors like e.g. room temperature, air humidity or adjustment of the mixer can influence the results.

You will find this table in different languages on www.shera.de under service/downloads.

4. Recommendations and tips regarding expansion

4.1. General information

- A deviation of the liquid ratios lead to a difference in expansion:
 - more SHERALIQUID = bigger expansion
 - more distilled water = less expansion.
- The expansion can slightly be influenced by changing the amount of total liquid (up to 4 ml):
 - thicker mix = bigger expansion (wider castings)
 - thinner mix = lower expansion (tighter castings).
- SHERALIQUID-EXTRA may only be used as an additive to SHERALIQUID – e.g. for alloys with very high shrinking values (max. 30% of SHERALIQUID-EXTRA).

4.2. Telescopic crowns and implant works

- In case of for example delicate dies or thin-walled implant abutments we recommend using less total liquid, i.e. that the mixture of liquid and investment powder should be slightly thicker in order to even increase the stability of the investment.
- Due to the fact that - as mentioned above - a thicker paste of the mixture liquid and investment powder results in a bigger expansion, the part of the SHERALIQUID has to be reduced in order to maintain the fitting.

5. Preparation

- Fix the casting sprues according to the general common guidelines.
- If needed, a thin layer of the surface tension release agent SHERARELAXA can be sprayed on the wax-up. You can directly start investing without letting it dry.
- We recommend using the SHERAMUFFELFORMER thus having the guarantee of an open porosity. The heat insulating effect of the mould formers facilitates an ideal setting expansion.

6. Processing

- For a small quantity of powder select a corresponding small mixing bowl.
- Put the powder into the mixing bowl and weigh.
- Add the mixed up total liquid (start measuring the time! After 20 minutes the mould can be placed into the furnace for rapid burn out).
- Mix vigorously by hand for 15 seconds.
- Mix under vacuum for 60 seconds; mixing speed approx. 250 rev./min.
- After mixing leave the mixing bowl under vacuum for 10 seconds.
- Fill in the investment only at lowest vibration level.
- After having filled up the mould, do not go on vibrating.

7. Pressable ceramic

- For increasing the open porosity of the mould surface and preventing cracks it is recommendable using casting ring liner for the mould preparation.
- It is advisable to produce the plunger yourself by using the investment in order to obtain the same expansion as the one of the mould. For this purpose just duplicate the original plunger and fill up the duplicating form with the same investment as the one for the mould.
- Mix up the paste (mixture investment powder and total liquid) thicker (see overview table).
- Mix vigorously by hand for 15 seconds.
- Mix up under vacuum for 60 - 90 seconds, mixing speed 250 rev./min.
- Before starting the pressing process hold the temperature inside the furnace for approx. 5 minutes longer, so that the ceramic can reach the plastic phase.

8. Modeling resin

- After hardening please place the modeling resin for 10 minutes at 45 to 55°C in a pressure pot for further polymerisation.
- After 20 minutes place the invested mould into a preheated furnace at 360°C in order to burn out the resin. Holding time: 30 minutes.
- Heat up without further holding times until the requested end temperature (according to the alloy used) is reached (see point 9.1) or you can place the mould into another furnace directly at end temperature.

9. Heating process / preheating

Place the mould into the preheating furnace with the cone face down onto a punched or a coarse milledplate made of ceramic.

9.1. Conventional heating process

- Place the mould into the cold furnace, soonest after 20 minutes – counted from the beginning of the mixing process.
- Heating rate: up to 20°C/min. (holding times are not necessary, unless you are using modeling resin, see chapter 8).
- Keep end temperature (according to the alloy used) at least for 45 minutes. For SHERA-alloys the end temperature is 850°C.

9.2. Rapid burn out

After 20 minutes – counted from the beginning of the mixing process - place the mould for at least 45 minutes into the furnace at a maximum temperature of 850°C. If needed, you can heat up higher to the requested end temperature. For SHERA-alloys the end temperature of 850°C is sufficient.

10. Casting

After a holding time of at least 45 minutes at end temperature, the casting can be started according to the instructions for us of the alloy manufacturer. If several moulds are going to be heated up in the furnace, the holding time has to be extended by 10 minutes per mould.

11. Cooling down

Cool mould down slowly to room temperature.

12. Health warning

Investments contain quartz! Do not breathe dust. Danger of lung diseases (silicosis or cancer).
Use a dust mask!

Warranty

SHERA Werkstoff-Technologie GmbH & Co. KG is certified according to DIN EN ISO13485 and guarantees for the products, due to a thorough quality control system, a flawless quality of its products. Our instructions for use are based on the results of our test laboratory. 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 SHREA has no influence on the processing. Nevertheless possibly arising claims for damages relate to the value of the products only.

