

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 for processing investments 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

Chrome investment for

- gel and silicone duplication for the traditional heating process
- silicone duplication for rapid burn out
- light cure wax technique for the traditional heating process

2. Technical data

Working time: 4 - 6 minutes

Working temperature: 20 - 23°C powder and liquid
(ideally at 21°C in a temperature chamber, in case of gel duplication 24 - 25°C)

3. Mixing ratio:

	powder	total liquid	thereof SHERALIQUID	thereof demineralized water
gel duplication	100 g	19 ml	13.3 ml (70%)	5.7 ml (30%)
silikon duplication	100 g	21 ml	16.8 ml (80%)	4.2 ml (20%)
imbedding	100 g	21 ml	10.5 ml (50%)	10.5 ml (50%)
	400 g	84 ml	42 ml (50%)	42 ml (50%)
light cure wax (see point 9)	100 g	21 ml	16.8 ml (80%)	4.2 ml (20%)
	600 g	126 ml	101 ml (80%)	25 ml (20%)

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

- A deviation of the liquid ratios lead to a change 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).

5. Processing

Recommendation: A silicone mould with a shore hardness of 17 to 22 should be used without stabilization or adhesive sleeve thus enabling the investment to expand freely.

5.1 Model preparation using silicone duplication

- Put the powder into the mixing bowl and weigh. (100 g = 21 ml)
- Add the mixed up total liquid. (Start measuring the time of 20 minutes!)
- Mix vigorously by hand for 15 seconds.
- Mix under vacuum for 45 seconds; mixing speed 250 rev/min.
- Fill in the investment evenly from one side only at low vibration level.
- The thinnest part of the model should be at least 1 cm thick.
- Demould the model after 20 minutes and afterwards dry it at 140°C for 20 minutes.
- Do the wax up.
- Fix sprues and cone.
- Mix the investment for imbedding, start timing.
- Pour the investment in without vibrating.
- After 20 minutes put the mould into the furnace for rapid burn out.

5.2 Model preparation using gel duplication

- The gel mould should be dry and lukewarm before pouring in the investment.
- Put the powder into the mixing bowl and weigh. (100 g = 19 ml)
- Add the mixed up total liquid. (Start measuring the time of 30 minutes!)
- Mix vigorously by hand for 15 seconds.
- Mix under vacuum for 60 seconds; mixing speed 250 rev/min.
- Fill in the investment evenly from one side only at low vibration level.
- The thinnest part of the model should be at least 1 cm thick.
- Demould the model after 30 minutes and afterwards dry it at 180°C for 30 minutes.
- Dip for 2 seconds into the dipping hardener (SHERAPOR-L or SHERAPORAL)
- Do the wax up.
- Fix sprues and cone.

5.3 Overbedding

- Place the model onto the open whole on the mould bottom of SHERAMUFFELFORMER MG. (illustration 1)
- Fix the model completely around the border with adhesive wax (higher melting point) to the mould bottom with wax. (illustration 2)
- Place the thinner side of the mould ring on the mould bottom of SHERAMUFFELFORMER MG. (illustration 3)
- Mix the investment for imbedding. (Start timing of 20 minutes!)
- Pour the investment into the mould without vibrating.
- Place the mould for the rapid burn out after 20 minutes.



illustration 1

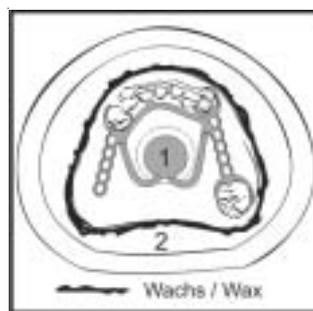


illustration 2

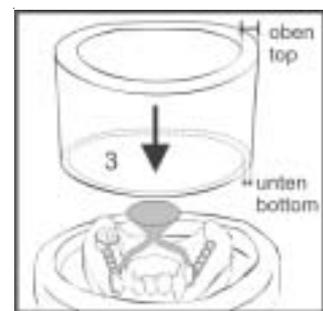


illustration 3

6. Heating-up / Preheating

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

In case of gel duplication we recommend using the traditional heating process.

6.1 Traditional 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, except for the light curing technique).
- End temperature (according to the alloy used) hold for at least 45 minutes. SHERA alloys have an end temperature of 850°C.

6.2 Rapid burn out

Place the mould into the hot furnace after 20 minutes – counted from the beginning of the mixing process – at a maximum temperature of 850°C for at least 45 minutes. If necessary, you can heat up until end temperature. For SHERA alloys the end temperature of 850°C is sufficient.

7. Casting

After a holding time of at least 45 minutes at end temperature the casting can be started according to the instructions for use 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.

8. Cooling down

Cool down mould slowly to room temperature.

9. Special considerations of the light curing technique

- Humidify the light curing wax surface with the surface tension release agent (SHERARELAXA) before pouring in the investment.
- Imbedding (see table).
- Traditional heating process (see point 6.1).
- Holding time: 30 minutes at 350°C.
- End temperature: 850°C (hold for at least 45 minutes)

10. 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.

