

SHERAREFRACT

INSTRUCTIONS FOR USE

Please read the entire instructions for use.

1. Indication

Compound for producing refractory dies on which veneers, onlays and inlays are individually layered and fired with dental ceramic materials.

2. Contraindication

- All work beyond the indication field

Even tiny residues on the working tools - even from plaster or 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! Refractory masses contain quartz! Do not inhale dust. Danger of lung diseases (silicosis or cancer). Wear fine dust mask!

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

4. Processing information

4.1. Storage

All components should be stored dry and protected from light. The optimum processing temperature for investment material, liquid and duplicating silicone is 20 - 23 °C.

- Ideally store the investment at 21°C in a temperature cabinet.
- Polymerisation may be disturbed, if the duplicating silicone is used at temperatures below 20°C.
- SHERALIQUID is sensitive to cold. If stored or transported below +5°C, the liquid will be damaged and should not 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

4.2. Preparation of dies for duplicaiton

When making the model, make sure that the model dies are as small as possible.

We recommend using the **SHERADUBLIER-SET**

System for duplicating refractory dies

- provides space for up to 6 dies
- easy demoulding of the silicone from the muffle ring
- with flat surfaces, for easy, vertical fixation of the stone or printed dies with wax (Duplicating base printed in SHERAprint-model desert)
- light-coloured bottom for better visual control of the residual die position
- re-usable

For the duplication of the prepared (printed or stone) dies, they must first be attached to the duplicating base with a distance of about one centimetre from the wall and from each other by using a bit of wax.

Silicone processing

We recommend using DUOSIL H, a duplicating silicone with a Shore hardness of 17 based on high-quality vinyl silicones.

Mix components A and B in a ratio of 1:1 (in g or ml). Pour into the duplicating mould from a height of 10 - 20 cm, always to the same point.

Do not interchange closures of the containers after use (risk of mutual contamination which may lead to premature curing).

Curing in pressure pot

Cure the duplicating mould with the model dies in the pressure pot at 2 to 6 bar. When fabricating the refractory dies later, ensure the same pressure in the pressure pot.

Devesting the model dies

After approx. 20 minutes, the dies can be removed. After removing the dies, the silicone mould should rest for approx. 15 minutes (resilience). In combination with our refractory material, you will achieve absolutely perfect precision.

4.3. Mixing procedure of the investment

Vacuum mixer (parameter)

Program a programme with the following parameters:

- stirring time 60 seconds,
- 80% vacuum,
- 350 rpm

Checking the vacuum of your stirring device:

Program a programme with the following parameters:

- evacuate for 60 seconds
- 100% vacuum
- fill the mixing bowl half full with cold water
- Maximum vacuum (100%) without stirring, after 30 sec. at the latest you should see small bubbles in the beaker and on the stirrer, which will bead off over time and new ones will form/come up.
- If this is not the case, the filter may be clogged and the appliance/filter should be cleaned. The sealing ring on the cup should also be checked.

Under the link you will find a [SHERA TECH HACK](#) for the vacuum.



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Information on use of expansion liquids

SHERALIQUID is an expansion liquid for all SHERA investments. SHERALIQUID is mixed with distilled water.

Recommendations and tips regarding expansion

- 33 g of powder: 6 ml of total liquid
- We recommend using at least 33g to achieve evenly consistent results.

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

- more SHERALIQUID = more expansion
- less SHERALIQUID = less 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 stirrer can influence the results.

Mixing ratios / mixing under vacuum

- fill in powder in small mixing bowl and weigh.
- add mixed liquid (start timing!)
- Recommendations:
for veneers, onlays:

| | |
|-----------------|------|
| SHERALIQUID | 4 ml |
| Distilled water | 2 ml |
- for inlays:

| | |
|-----------------|------|
| SHERALIQUID | 2 ml |
| Distilled water | 4 ml |
- processing time: approx. 5 minutes
- mixing by hand, mix powder and liquid homogeneously.
- start mixing programme.

4.4. Pouring SHERAREFRACT into the silicone mould

- Place a larger quantity of SHERAREFRACT in the hollow in the centre of the duplicating mould.
- Using a wax knife, push the refractory mass towards the recess in the dies. Make sure that the outside of the recess remains open at first to allow air to escape.
- Fill in at the lowest vibration level.
- then leave to harden in the pressure pot for at least 30 minutes at the same pressure as when making the duplicating mould!
- after another 30 minutes, the dies can be removed from the mould.

5. Degassing and sintering

- Degassing should take place soon after demoulding
- directly at 700°C in the preheating furnace or conventional heating
- hold at 700°C in the preheating furnace for 20 minutes, then sinter at 1050°C in the ceramic furnace for 5 minutes

6. Tips on ceramic firing

- Before applying the first layer (connector / wash fire), only moisten the veneering surface with distilled water until the water reaches the opposite side. Then apply the ceramic mixed with distilled water as moist as possible and allow it to soak into the die, if necessary, re-moisten slightly with distilled water. Before placing in the ceramic furnace, soak up the moisture on the opposite side of the veneering surface with a paper towel.

- This allows ceramic particles to diffuse into the die and create a good bond.
- The ceramic masses are applied and fired according to the instructions of the ceramic manufacturer.

We recommend the following programming of the ceramic furnace:

- stand-by temperature of 400°C
- dry for at least 7 minutes
- close for 9 minutes
- preheating for 7 minutes
- climbing rate of 30 – 35°C/minute
- to compensate for poor thermal conductivity, increase the final temperature if necessary. (empirical value 10 – 15°C)
- long-term cooling in a closed oven up to 500°C
- For further firings, the die can be watered or moistened with a brush to achieve and maintain the desired moisture level.

Tip on finalising the ceramic

- When finishing the ceramic in the edge area, water the die beforehand!

7. Sandblasting

- Glass beads of 50 µm at 1 bar

8. Information / Feedback:

Further information, mixing tables and safety data sheets are available at 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 number when giving feedback on the product.

9. Disposal

Dispose of contents/container in accordance with local regulations.

10. Guarantee

SHERA Werkstoff-Technologie GmbH is certified according to 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.

