








With duplicating gels, there is almost complete setting expansion. If you were to select the same mixing ratio for a gel duplication as for a silicone duplication, the cast would be much too big. The casting dimensions would only be right with 40% mixture concentrate and 60% water.

Because the model surface and seating accuracy are better with a different mixing concentrate, we offer you the StarVest-MG mixing concentrate for gel duplications.

A good gel duplication is more difficult to achieve than a duplication with silicone, especially in milling and attachment work.

Please observe the following points:

-  Prepare the model well and block out all uneven areas that are not required.
-  Soak the model with metal parts in hot water (about 50°C).
-  Dab the model dry with a highly absorbent lint-free cloth. You may also need to blow it out a little so that metal parts will not cool too quickly.
-  Apply liquid duplicating gel to the metal parts with a preheated point or brush and quickly pour the duplicating mould in the flask.
-  The duplicating gel must be left to cool in fresh air (reduced solidification shrinkage).
-  We recommend that you use transparent glass or plastic flasks. You can detect air pockets by repositioning the duplicating mould in the flask.
-  Or you can leave the mould in the flask, cut gel away from around the model base and carefully try to remove the plaster model from the mould without the gel mould coming away from the flask. Use one hand to maintain the duplicating mould in a U-shape at the edge of the flask.

Mixing Ratio for Duplicating Gel

Use the ready-made transparent StarVest-MG mixing liquid.

Expansion is controlled exclusively by reducing (more expansion) or increasing (less expansion) the amount of liquid while keeping the powder quantity the same.

For example:	13ml of liquid	=> high expansion	with 100g of powder
	15ml of liquid	=> less expansion	with 100g of powder

We recommend 14.5-14ml of StarVest-MG mixing liquid, transparent, for 100g of powder.

Use duplicating gels with low shrinkage values.

With other brands, it may be necessary to choose other mixing ratios.

Harden the investment model with hardening wax or a solvent-free cold hardener. Never use solvent-based cold hardeners, as this would result in a poor casting surface.

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StarVest®-M







Model Cast Investment for the Silicone,
Polyether Rubber and Gel Duplication Technique.

Vers. 3.4

We thank you for your interest in our product. We make every endeavour to win your confidence through products of the very best and most consistent quality, and have produced this investment with the greatest of care. We know you'll be impressed by the low viscosity when you're pouring out a duplicating mould, not to mention the excellent quality of the fit and extremely smooth surface composition of the cast. Please get in touch with us if you have any questions or comments.

The following points are crucial for consistently precise casts:

-  The quantity of powder must be weighed exactly to the gram with accurate (electronic) scales (if necessary, check and readjust the scales).
-  The mixing liquid (concentrate and distilled water) must be measured out exactly in the measuring cylinder provided. Make sure that all the liquid is poured out of the measuring cylinder.
-  A consistent temperature for storing or processing powder and liquid is 18-20°C.
-  With regard to the processing temperature, the mixing time is crucial for the quality of the casting surface. The same is true for the speed of the mixer; a high speed (from 400 RPMs) is required for the best casting surfaces, while a low speed (250 RPMs or less) means a poor casting surface.

Use During Silicone or Polyether Duplication

1. Use medium-hard to hard silicones. Use a generous amount of silicone with closed flasks (plastic, metal or glass flasks). The silicone should be at least 7mm thick around the model base, and at least 10mm thick around the vestibular part of the tooth crown, because otherwise the setting expansion would not be wide enough. A good economy flask to use is Girrbach's Neosil flask.
2. Fabricate the silicone duplication and investment **without pressure**. Pressure would cause a considerably reduced setting expansion in the silicone mould. This results in casts that are much too narrow.
3. Use a pneumatic gun with metal barrel such as our pneumatic gun with order number 80590 to blow out the model in the closed flask.
4. If possible, leave the silicone mould for several hours for complete elastic recovery. But allow at least 30 minutes. Softer silicones have a longer elastic recovery time.
5. Use a suitable silicone surfactant if necessary.

6. Store or process the investment and liquid at a constant temperature of 14-20°C. Do not expose the investment and liquid to any varying temperature fluctuations.

7. Mixing Ratio

Mix with blue StarVest concentrate. Model and pour the cylinder at the same time.

15ml Total Liquid on 100g of Powder

Standard or neutral expansion for combination work or clasp model cast:

9ml of concentrate = 60% of the total liquid => 60% mixing ratio

6ml of distilled water = 40% of the total liquid

Higher expansion for male parts in telescopic restorations:

14-14.5ml of concentrate, no water on 100g of powder

Increase expansion further by reducing the total liquid quantity.

Maximum expansion: 13ml of concentrate, no water on 100g of powder

If you want to use the one-piece cast method to fabricate a telescopic restoration, you must pour out the male parts, i.e. only the pins in the silicone mould with investment from higher to maximum expansion (you need an overexpansion for telescopes) and pour out the rest of the model with neutral expansion (as for combination work).

You must mix the investment in two mixing cups, using the second immediately after the first, so that it can easily be joined together.

8. Processing time: 4 minutes at 18°C
9. Dry the mixing cup for phosphate investment by rubbing or blowing it. Do not use a vulcanite mixing cup, as it may react with the investment, resulting in beads on the casting surface.
10. Precisely measure out the concentrate and distilled water into the measuring cylinder separately (but together is better). Pour it all into the mixing cup and mix the cup by rotating it. Rinse out the measuring cylinder immediately after use and let it drain.
11. Place the cup on electronic scales (our digital scales are very accurate up to 2000g), press the Tare key, add the powder amount exactly to the gram with the measuring shovel, stir well and evacuate. **After maximum vacuum has been reached, mix immediately for 60-90 seconds under vacuum**, then invest.
12. The investment model can be blown out of the mould with compressed air after a 30-minute setting time.
13. Spray the model with an adhesive spray. It makes modelling with finished wax parts and plastic flexseal patterns easier. Do not harden the investment model **or use a cold hardener**.
14. Attach 2 3-3.5mm sprues in the flow direction of the fused material in the centrifuge. The sprues should be horizontal at the connection point and steadily ascend to the funnel.
15. Supply lines measuring 2-2.5mm should be attached to all cast parts that are undersupplied due to transverse contraction and to each brace support (better fit) in such a way that they can ascend from the funnel back to the cast part in the deepest, longest curve possible. An additional 3 or 4 vertical venting lines, 15mm long, 1mm thick and also joined horizontally, should be attached.

16. Trim the investment model so that it is dry, round and conical to the model base. Make sure that the investment thickness is about 2cm at the thinnest part to the model base (better fit). Pour the cylinder as normal.

You can also grind the model parallel and box it directly adjacently with a coated paper or silicone cuff (such as a Siladent, Heraeus, Neoform or other brand of model cast system). However, this method is only recommended for models with existing teeth or jaws that still offer sufficient retention for pouring the cylinder. It is not recommended for strongly blocked out models and total plates.

17. Remove the sprue former if the muffle is still hot.

Gold Model Casting

Of critical importance to the fit are pressure duplication and pressure investment, i.e. letting the silicone and investment model cure under identical pressure of 2-2.5 bars. As a mixing ratio for the model, take 11ml of concentrate and 4ml of water on 100g of powder for a high-quality yellow gold alloy. For a reduced yellow gold alloy or palladium alloy, take 12ml of concentrate and 3ml of water on 100g of powder.

Grind the investment model to its base, making it slightly conical and completely pour the model from the cylinder. For pouring the cylinder, take 50% concentrate and 50% water (this makes divestment much easier).

The most appropriate preheating temperature for a gold alloy is 700-750°C.

When you use our silicone, you will achieve sensational fits in your combination work with a one-piece cast (no soldering), regardless of whether you're using telescope, bar, channel-shoulder etc.

Preheating

Place the muffle in the furnace with the funnel pointing downwards.

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| 1. Holding time / temperature | 60 minutes | at | 300°C |
| 2. Holding time / temperature | 30 minutes | at | 600°C |
| | Final temperature | 40 minutes | at 950°C (for gold alloy, e.g. 750°C) |

Heat increase max. 9°C per minute (linear)

Alternative Processing with Reversible Duplicating Gels on an Agar-Agar Base

Don't feel like you're back in the Stone Age if you still use duplicating gel for your model casting today. In developing this investment with duplicating gels, we have found in many comparative casts that duplicating gel gives better seating accuracy than silicone in certain kinds of appliances.

Without a doubt, silicone is the most accurate elastic impression material along with polyether rubber. Shrinkage, edge sharpness and texture, elasticity, elastic recoverability and the surface quality of the investment model are better. However, silicone offers tremendous resistance to an investment for an unhindered and steady setting expansion, which means that part of the setting expansion is lost (it simply vanishes).