

Preheating in general

You can start the conventional or speed preheating process after 25 minutes at the earliest, and at any later time. Lower set-up temperatures, longer standing until setting up or conventional preheating do not alter the expansion of the investment

Do not preheat implant abutments and resin telescopic and tapered crowns with speed casting. Set up at a maximum of 300 °C with a hold time of 60 minutes. Coat Straumann resin implants with a wax layer as far as the edge.

Preheating casting muffles as quickly as possible

Speed casting procedure only with metal rings. You can put the muffles into the hot furnace but note the temperatures for the corresponding muffle sizes:

size 3 muffles up to 850 °C ü 45 min hold time. Max. 700 °C with high proportion of concentrate as with NPM

size 6 muffles up to 700 °C ü 60 min hold time. Max. 600 °C with high proportion of concentrate as with NPM

at higher casting temperatures, set up muffles at the above temperatures and

hold size 3 muffles for 30 minutes, then preheat the furnace to the final temperature hold 30 min.

hold size 6 muffles for 45 minutes, then preheat the furnace to the final temperature hold 45 min.

Set up muffles without a metal ring 100 °C lower during preheating.

Preheating pressed muffles as quickly as possible

You can put the muffles into the hot furnace but note the temperatures for the corresponding muffle sizes:

100 g muffles up to 850 °C hold for 80 min

200 g muffles up to 700 °C hold for 60 min

Lower set-up temperatures or conventional preheating do not alter the expansion of the investment.

Preheating casting and pressed muffles conventionally

Muffle size	1x / 100g	3 x / 200g	6 x	9 x
Climb time	6° - 9° C per minute (starting in cold furnace)			
1 st hold time 300 °C	40 min.	50 min..	60 min.	70 min.
Final temperature 650° - 1000°C	30 min.	50 min.	50 min.	60 min.
or with pressed ceramic ~ 850°C	40 min.	60 min.		

If the furnace is full, the hold times should be extended by 10 minutes. **If only one hold time can be programmed, the 2nd hold time at 600 °C can be omitted.**

Special features and tips

Casting the muffle is not possible (defect in casting machine, no metal etc.): if casting is possible within the next 3 hours, continue to keep the muffle at the end temperature. If this is not the case, switch the furnace off immediately and let the muffle cool in the furnace. Do not remove the muffle from the hot furnace ü Muffle cracks! Store the muffle in a dry place and preheat and cast again conventionally. On no account wet the muffle beforehand.

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StarVest[®]-SPEED

Graphite-free, phosphate-bound speed casting investment material for the entire crown, bridge and inlay technique.



Vers. 3.1

Please follow all the other instructions for consistent precise casting in the general instructions on **StarVest processing**.

Areas of use: crowns, bridges, inlays, telescopes, tapered crowns, bar, bolts of all precious metals. Only recommended for NPM alloys to a limited degree as expansion is too low.

Also suitable for pressed ceramic technique.

Muffle systems: Investment without a muffle ring is also possible. In the speed casting method, we recommend use only with metal rings. Only use muffle systems that allow curing expansion of the investment. In our experience, you will get the best and most constant fit with metal rings and fleece. Use 1 mm thick mineral fleece. Use two fleece liners with muffle sizes 6+9. Do not moisten the fleece. Do not use size 1 muffles! tighter crown fit!

Caution when spraying the base mould / rings with mould release agents incompatibility.

Storage and processing temperature: Ideally 20-22 °C. Can be processed in the range 19-25 °C. Do not process below 19 °C. poorer cast surfaces and the investment does not cure correctly. With a processing temperature over 25°C there is a large increase in curing expansion. The mix concentrate is sensitive to frost.

Storage instructions: the investment powder is very hygroscopic. Squeeze as much air as possible out of the bag of investment material immediately after investment and seal with the bag sealing strip. Use the investment powder within 3 weeks at the most, as otherwise casting defects and muffle cracks can occur in the speed casting technique. If this is the case or the bag was accidentally not sealed one day, only preheat conventionally or discard the remainder.

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Pressed ceramic: Use StarVest concentrate blue for pressed muffles also.

Mixing: Use a separate gypsum-free and clean mixing beaker for phosphate investment material. Place this beaker on an electronic scale, press tare, add the powder with the measuring scoop weighed exactly to the gramme, **mix well with a spatula and mix immediately in a vacuum**, then invest.

Mixing time: mix for 3 minutes in a vacuum at a processing temperature of 22 °C. Mixing time at 20 °C 3.5 minutes. **The best and most consistent results are obtained with a constant storage temperature of 20 - 24 °C for powder and liquids.** See also: StarVest processing mixing time, speed, casting surface.

Filling: set the vibrator to the lowest setting and fill the muffle ring with investment material. Do not shake any further.

Processing range: approx. 6 minutes at 20 °C.

Pressure investment: Possible. We recommend pressureless investment. With pressure investment at 0.5 to 2 bar the expansion is unchanged. With higher pressure (4-8 bar) the curing expansion is reduced ➔ tighter casting. Hold pressure for at least 30 minutes. Shorter ➔ casting defects, muffle cracks.

Curing time: 25 minutes. Place the muffle in a vibration-free place and do not touch, move etc. during the curing period.

Demoulding the muffle and setting up: remove the muffle mould and silicone ring, if applicable, only after the entire curing time. Remove the muffle mould with a slight rotating movement. **Start cutting with the muffle top dry or roughen it with a knife.** Very important with speed casting, otherwise parts of the muffle top chip off.

Do not let the muffle come in contact with water.

Preheating: Always place the muffle with the casting funnel facing downward and in the middle of the ribbed base plate. (Base plates in all sizes can be obtained from us.) No direct contact with the furnace wall.

Other: important for casting metal parts: investment material contains no chlorides

Mixing values for pressed ceramics with StarVest®-SPEED

Figures for 200 g powder and 42 ml total liquid (100g muffle x ½)

High fusing pressed ceramics (pressing temperature approx. 1050-1180°C)

Only ^{IPS}EMPRESS® 2 = use 2ml more concentrate and 2ml less water.

Low fusing pressed ceramics (pressing temperature approx. 920-980°C)

such as evopress®, Authentic™, Cergo, Finesse, Carrara Press

crowns 18 ml conc. + 24 ml water

3-fl. inlays, veneers 16 ml conc. + 26 ml water

2/1-fl. inlays 14 ml conc. + 28 ml water

Do not employ pressure investment with pressed ceramic!

Trade marks of other companies: ^{IPS}EMPRESS® Ivostar AG, Fl-Schaan. evopress® Wegold, Wendelstein. Authentic™ ceramay, Stuttgart. ^{Optic}OPL® Jenec Pentron Deutschland, Kusterdingen. Cergo DeguDent GmbH, Hanau. Finesse DENTSPLY DeTrey GmbH, Dreieich. Carrara Press Elephant B.V., NL-Hoorn. Creation CP Creation Willi Geller AG, CH-Baar.

Mixing values for the casting technique with StarVest®-SPEED



Note: 150 g powder are mixed with 32 ml liquid (concentrate blue / dem. water).

All figures for size 3 muffle with 150 g powder and 20 °C processing temperature.

Expansion is controlled by the ratio of mix concentrate to demineralised water. more concentrate = greater expansion / less concentrate = lower expansion

Expansion can be increased further by reducing the total volume of liquid to up to 29ml concentrate (without water) (e.g. for NPM crowns).

Expansion can also be increased further when there is a high proportion of concentrate if you mix larger quantities of investment material, e.g. 300g for a size muffle or use a size 6 muffle. (max. expansion 300g powder and 58ml concentrate)

Objects  Alloys employed: Metalor and DeguDent	Wax crowns Wax-dipped dies (2 + 3-fl. inlay)	Telescopic crowns Parallel abutments		Tapered crowns 6 degree abutments in resin
		in resin	in wax	
Investment type  Alloy type	with or without pressure	without pressure	with/without pressure	without pressure
High gold content yellow gold alloy. (70-76% Au) e.g. Pontor MPF, Deugunorm	14 (13) ml conc. 18 (19) ml water	16 ml conc. 16 ml water	12 ml conc. 20 ml water	7 ml conc. 25 ml water
Slightly reduced yellow gold alloy (55-65% Au) e.g. Solrao 3, Stabilor NF IV	15 (14) ml conc. 17 (18) ml water	17 ml conc. 15 ml water	13 ml conc. 19 ml water	8 ml conc. 24 ml water
High gold content silver- coloured burn-on alloy (70-80% Au) e.g. V-92, Degudent-U	16 (15) ml conc. 16 (17) ml water	18 ml conc. 14 ml water	15 ml conc. 17 ml water	11 ml conc. 21 ml water
High gold content yellow- coloured burn-on alloy (approx. 85% Au, 11% Pt) e.g. V-Gnathos Plus, BiOccolus 4	16 ml conc. 16 ml water	18 ml conc. 14 ml water	15 ml conc. 17 ml water	11 ml conc. 21 ml water
Reduced burn-on alloy. (50-60% AU) e.g. V Delta SF, Deva 4	15 ml conc. 17 ml water	17 ml conc. 15 ml water	14 ml conc. 18 ml water	9 ml conc. 23 ml water
Palladium base alloy e.g. Cerapall 2+6, Degupal	15 ml conc. 17 ml water	17 ml conc. 15 ml water	14 ml conc. 18 ml water	8 ml conc. 24 ml water
NPM alloy (Cr.-Co / Cr-Ni leg.)	22 ml conc. 10 ml water	24 ml conc. 8 ml water	20 ml conc. 12 ml water	17 ml conc. 15 ml water
NPM alloy (Cr-Co with 5-10% Wolfram)	25 ml conc. 7 ml water	27 ml conc. 5 ml water	23 ml conc. 9 ml water	19 ml conc. 13 ml water

The figures in this table are recommended values, which we have established by many tests. Different results can arise when the material is processed differently, or other accessory materials or equipment (e.g. muffle ring insert, surfactants, waxes, mixers, casting alloys etc.) is used. All of the listed brand names and registered trademarks are the property of the respective supplier.

Safety instructions: Investment materials contain quartz. Avoid production of dust and do not inhale dust. Use wet methods of dust removal or an approved extractor. Ammonia escapes during preheating, divert furnace gases to the open air. Do not open the furnace doors during preheating as the waxes can burn unexpectedly and produce flames. Particularly with speed casting, never open the furnace doors for the first 15 minutes.