

## Mixing values for pressable ceramics with StarVest®-ULTIMA

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

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

such as IPS<sup>®</sup>EMPRESS<sup>®</sup>, Optec<sup>®</sup> OPC, Creation<sup>®</sup> CP

Crowns 12 ml conc. + 30 ml water

3-fl. inlays, veneers 11 ml conc + 31 ml water

2/1-fl. inlays 9 ml conc + 33 ml water

IPS<sup>®</sup>EMPRESS<sup>®</sup> 2 = use 2ml more concentrate and 2ml less water.

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

such as evopress<sup>®</sup>, Authentic<sup>™</sup>, Cergo, Finesse, Carrara Press

Kronen 15 ml conc + 27 ml water

3-fl. inlays, veneers 13 ml conc + 29 ml water

2/1-fl. inlays 9 ml conc + 33 ml water

Trade marks of other companies: **IPSEMPRESS** Ivoclar AG, FL-Schaan. **Evopress** Wegold, Wendelstein. **Authentic** ceramay, Stuttgart. **Optec OPC** Jeneric 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.

## 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 ➔ Muffle cracks! Store the muffle in a dry place and preheat and cast again as normal. On no account wer the muffle beforehand.

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## StarVest<sup>®</sup>-ULTIMA

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

Vers. 2.3

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 and particularly also for all NPM alloys.  
Also suitable for the pressed ceramic technique.

**Muffle systems:** Investment without a muffle ring is also possible. 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:** 18-23 °C. The mix concentrate is sensitive to frost.

**Mixing values:** See table for casting technique and pressed ceramic  
Measure StarVest concentrate red and demineralised water individually or ideally together in the measuring cylinder exactly and add completely to the mixing beaker. Mix by swivelling the beaker in a circular movement.

**Blue concentrate and expansion with NPM:** Use only the red concentrate! With the blue concentrate, the casts are markedly narrower, particularly with telescopic workpieces in NPM and batch tolerances have a three times greater effect.

**Pressed ceramic:** For pressed muffles use StarVest concentrate blue, if available, as the thermal stability of the investment is increased with this ➔ muffles become less susceptible to cracks. Or reduce the total liquid volume to 40 ml with 200g powder.

**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 18-20 °C

Mix for 4 minutes in a vacuum at a storage/processing temperature of 16 °C.

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. 8 minutes at 18 °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:** 35 minutes. Place the muffle in a vibration-free place and do not touch, move etc. during the curing time.

**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.

Do not let the muffle come in contact with water!

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

If resin parts are invested in the muffle, select the lowest recommended heat climb and keep to the temperature steps

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




**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.

## Mixing values for the casting technique with StarVest®-ULTIMA

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

All figures for size 3 muffle with 150 g powder and 18 °C processing temperature.

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

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	11 (10) ml conc. 21 (22) ml water	10 ml conc. 22 ml water	8 ml conc. 24 ml water	2 ml conc. 30 ml water
Slightly reduced yellow gold alloy (55-65% Au) e.g. Solrao 3, Stabilor NF IV	12 (11) ml conc. 20 (21) ml water	11 ml conc. 21 ml water	9 ml conc. 23 ml water	3 ml conc. 29 ml water
High gold content silver- coloured burn-on alloy (70-80% Au) e.g. V-92, Degudent-U	14 ml conc. 18 ml water	14 ml conc. 18 ml water	12 ml conc. 20 ml water	6 ml conc. 26 ml water
High gold content yellow- coloured burn-on alloy (approx. 85% Au, 11% Pt) e.g. V-Gnathos Plus, BiOculus 4	14 ml conc. 18 ml water	13 ml conc. 19 ml water	11 ml conc. 21 ml water	6 ml conc. 26 ml water
Reduced burn-on alloy. (50-60% AU) e.g. V Delta SF, Deva 4	14 ml conc. 18 ml water	13 ml conc. 19 ml water	11 ml conc. 21 ml water	5 ml conc. 27 ml water
Palladium base alloy e.g. Cerapall 2+6, Degupal	12 ml conc. 20 ml water	12 ml conc. 20 ml water	9 ml conc. 23 ml water	3 ml conc. 29 ml water
NPM alloy (Cr-Co / Cr-Ni leg.)	19 ml conc. 13 ml water	21 ml conc. 11 ml water	18 ml conc. 14 ml water	14 ml conc. 18 ml water
NPM alloy (Cr-Co with 5-10% Wolfram)	21 ml conc. 11 ml water	24 ml conc. 8 ml water	20 ml conc. 12 ml water	16 ml conc. 16 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.

## Preheating casting and pressed muffles

Muffle size	1x / 100g	3 x / 200g	6 x	9 x
Climb time	6° - 9° C per minute (starting in cold furnace)			
1 <sup>st</sup> hold time 300 °C	40 min.	50 min.	60 min.	70 min.
2 <sup>nd</sup> hold time 600 °C	20 min.	30 min.	40 min.	50 min.
Final temperature 650° - 1000°C	20 min.	30 min.	40 min.	50 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 2<sup>nd</sup> hold time at 600 °C can be omitted.**

**Preheating a size 3 muffle with metal ring as fast as possible:**

**Cold furnace:** to final temperature with a climb time of 9°C / min.

**Hot furnace (max 400°C):** hold temp. for 30 min., then to final temperature with a climb time of 9°C / min..