

Firing charts Triceram[®] ceramics on titanium



HOTLINE: +49 7231 / 803-440

Standard program:

| | Base Temperature* | Drying time | Heat rate/ min. | Vacuum start | Vacuum end | Final temperature | Holding time | Cooling time |
|---|-----------------------|-------------|----------------------|-----------------------|------------------------|----------------------------|------------------------|--------------|
| Powder bonder bake | 500°C 932°F | 4 min. | 65°C 149°F | 500°C 932°F | 795°C 1463°F | 795°C 1463°F | 1 min. under vacuum | 0 min. |
| Paste bonder bake | 500°C 932°F | 6 min. | 65°C 149°F | 500°C 932°F | 795°C 1463°F | 795°C 1463°F | 1 min. under vacuum | 0 min. |
| Opaque bake 1 + 2 | 500°C 932°F | 4 min. | 65°C 149°F | 500°C 932°F | 795°C 1463°F | 795°C 1463°F | 1 min. under vacuum | 0 min. |
| Shoulder bake | 500°C 932°F | 6 min. | 55°C 131°F | 500°C 932°F | 785°C 1445°F | 785°C 1445°F | 1 min. under vacuum | 0 min. |
| Dentin bake 1 (with liquid LV univ.) ** | 500°C 932°F | 6 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |
| Dentin bake 2 (with liquid LV univ.) ** | 500°C 932°F | 4 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |
| Glaze bake | 500°C 932°F | 2 min. | 55°C 131°F | **** | **** | 755°C *** 1391°F | 1 min. **** | 0 min. |
| Correction material | 500°C 932°F | 4 min. | 55°C 131°F | 500°C 932°F | 715°C 1319°F | 715°C 1319°F | 1 min. under vacuum | 0 min. |
| Gingival material | 500°C 932°F | 6 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |

The data shown is valid for fine-silver calibrated furnaces.

* Positioning of objects only at correct standby temperatures.

** When using modelling liquid MV universal, observe different bake sequence.

*** By reducing (adjusting) the firing temperature, variation in glaze can be achieved.

**** The glaze bake can be carried out under or without vacuum. The grade of glaze can be increased by prolonging the holding time.

For standard modelling liquid LV universal:

| | Base temperature | Drying time | Holding time at base temp. | Heat rate/ min. | Vacuum start | Vacuum end | Final temperature | Holding time | Cooling time |
|---|-----------------------|-------------|----------------------------|----------------------|-----------------------|------------------------|------------------------|------------------------|--------------|
| Dentin bake 1 (with liquid LV univ.) ** | 500°C 932°F | 6 min. | 0 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |
| Dentin bake 2 (with liquid LV univ.) ** | 500°C 932°F | 4 min. | 0 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |

For modelling liquid MV universal:

| | Base temperature | Drying time | Holding time at base temp. | Heat rate/ min. | Vacuum start | Vacuum end | Final temperature | Holding time | Cooling time |
|--------------------------------------|-----------------------|-------------|----------------------------|----------------------|-----------------------|------------------------|------------------------|------------------------|--------------|
| Dentin bake 1 (with liquid MV univ.) | 500°C 932°F | 4 min. | 4 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |
| Dentin bake 2 (with liquid MV univ.) | 500°C 932°F | 3 min. | 3 min. | 55°C 131°F | 500°C 932°F | 755°C 1391°F | 755°C 1391°F | 1 min. under vacuum | 0 min. |

Important:

When using modelling liquid MV universal, note the differences in bake sequence from modelling liquid LV universal (see firing chart above).

Do not mix the universal liquids LV and MV as this may cause bubbles!

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| Austromat M | | | | | | | | | | | |
|--|-----------------------|---|---|---|-----------|----------------------|------------------------|----------------------|------|--------|--------|
| | START | □ | ↑ | → | VAC LEVEL | °C/°F ↑ min. | END | → min. | (V) | ↓ 1 | ↓ 2 |
| Powder bonder bake | 500°C 932°F | 1 | 3 | 0 | 9 | 65°C 149°F | 795°C 1463°F | 1:00 under vacuum | d | 0 | 0 |
| Paste bonder bake | 500°C 932°F | 1 | 5 | 0 | 9 | 65°C 149°F | 795°C 1463°F | 1:00 under vacuum | d | 0 | 0 |
| Opaque bake 1 + 2 | 500°C 932°F | 1 | 3 | 0 | 9 | 65°C 149°F | 795°C 1463°F | 1:00 under vacuum | d | 0 | 0 |
| Shoulder bake | 500°C 932°F | 1 | 6 | 0 | 9 | 55°C 131°F | 785°C 1445°F | 1:00 under vacuum | d | 0 | 0 |
| Dentin bake 1 (with liquid LV universal) ** | 500°C 932°F | 1 | 6 | 0 | 9 | 55°C 131°F | 755°C 1391°F | 1:00 under vacuum | d | 0 | 0 |
| Dentin bake 2 (with liquid LV universal) ** | 500°C 932°F | 1 | 4 | 0 | 9 | 55°C 131°F | 755°C 1391°F | 1:00 under vacuum | d | 0 | 0 |
| Glaze bake | 500°C 932°F | 1 | 2 | 0 | **** | 55°C 131°F | 755°C 1391°F | 1:00 **** | **** | 0 | 0 |
| Correction material | 500°C 932°F | 1 | 4 | 0 | 9 | 55°C 131°F | 715°C 1319°F | 1:00 under vacuum | d | 0 | 0 |
| Gingival material | 500°C 932°F | 1 | 6 | 0 | 9 | 55°C 131°F | 755°C 1391°F | 1:00 under vacuum | d | 0 | 0 |

| Austromat 3001 | |
|--|--|
| Powder bonder bake | C500 T60 T180 · L9 V9 TO65 · C795 T60 V0 CO LO T2 C500 |
| Paste bonder bake | C500 T60 T300 · L9 V9 TO65 · C795 T60 V0 CO LO T2 C500 |
| Opaque bake 1 + 2 | C500 T60 T180 · L9 V9 TO65 · C795 T60 V0 CO LO T2 C500 |
| Shoulder bake | C500 T60 T360 · L9 V9 TO55 · C785 T60 V0 CO LO T2 C500 |
| Dentin bake 1 (with liquid LV universal) ** | C500 T60 T360 · L9 V9 TO55 · C755 T60 V0 CO LO T2 C500 |
| Dentin bake 2 (with liquid LV universal) ** | C500 T60 T240 · L9 V9 TO55 · C755 T60 V0 CO LO T2 C500 |
| Glaze bake | C500 T60 T120 · L9 TO55 · C755 T60 CO LO T2 C500 |
| Correction material | C500 T60 T240 · L9 V9 TO55 · C715 T60 V0 CO LO T2 C500 |
| Gingival material | C500 T60 T360 · L9 V9 TO55 · C755 T60 V0 CO LO T2 C500 |

****The glaze bake can be carried out under or without vacuum. The grade of glaze can be increased by prolonging the holding time.

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| Multimat MCII (Mach1/Mach2) | | | | | | | | |
|---|------------------------|---------------|-------------------|---------------|--------------------|------------------------|----------------------|------------------|
| | Preheating temperature | Drying (min.) | Preheating (min.) | Vacuum (min.) | Firing time (min.) | Firing temperature | Heat rate/min. | Vacuum |
| Powder bonder bake | 500°C 932°F | 3 | 1 | 1,0 | 2,0 | 815°C 1499°F | 65°C 149°F | 50 122 |
| Paste bonder bake | 500°C 932°F | 5 | 1 | 1,0 | 2,0 | 815°C 1499°F | 65°C 149°F | 50 122 |
| Opaque bake 1 + 2 | 500°C 932°F | 3 | 1 | 1,0 | 2,0 | 815°C 1499°F | 65°C 149°F | 50 122 |
| Shoulder bake | 500°C 932°F | 4 | 2 | 1,0 | 2,0 | 805°C 1481°F | 55°C 131°F | 50 122 |
| Dentin bake 1 (with liquid LV universal) ** | 500°C 932°F | 5 | 2 | 1,0 | 2,0 | 775°C 1427°F | 55°C 131°F | 50 122 |
| Dentin bake 2 (with liquid LV universal) ** | 500°C 932°F | 4 | 2 | 1,0 | 2,0 | 775°C 1427°F | 55°C 131°F | 50 122 |
| Glaze bake | 500°C 932°F | 2 | 2 | **** | 1,5 | 775°C 1427°F | 55°C 131°F | **** |
| Correction material | 500°C 932°F | 4 | 2 | 1,0 | 2,0 | 735°C 1355°F | 55°C 131°F | 50 122 |
| Gingival material | 500°C 932°F | 4 | 2 | 1,0 | 2,0 | 775°C 1427°F | 55°C 131°F | 50 122 |

| P90/P95 | | | | | | | |
|--|-----------------------|----------------------|------------------------|---------------------|------------------------|-----------------------|------------------------|
| | Base temperature | Heat rate/min. | Firing temperature | Closing time (min.) | Holding time | Vacuum ON | Vacuum OFF |
| Powder bonder bake | 500°C 932°F | 65°C 149°F | 795°C 1463°F | 4 | 1 min. under vacuum | 500°C 932°F | 795°C 1463°F |
| Paste bonder bake | 500°C 932°F | 65°C 149°F | 795°C 1463°F | 6 | 1 min. under vacuum | 500°C 932°F | 795°C 1463°F |
| Opaque bake 1 + 2 | 500°C 932°F | 65°C 149°F | 795°C 1463°F | 4 | 1 min. under vacuum | 500°C 932°F | 795°C 1463°F |
| Shoulder bake | 500°C 932°F | 55°C 131°F | 785°C 1445°F | 6 | 1 min. under vacuum | 500°C 932°F | 785°C 1445°F |
| Dentin bake 1 (with liquid LV universal) ** | 500°C 932°F | 55°C 131°F | 755°C 1391°F | 6 | 1 min. under vacuum | 500°C 932°F | 755°C 1391°F |
| Dentin bake 2 (with liquid LV universal) ** | 500°C 932°F | 55°C 131°F | 755°C 1391°F | 4 | 1 min. under vacuum | 500°C 932°F | 755°C 1391°F |
| Glaze bake | 500°C 932°F | 55°C 131°F | 755°C 1391°F | 2 | 1 min. **** | **** | — |
| Correction material | 500°C 932°F | 55°C 131°F | 715°C 1319°F | 6 | 1 min. under vacuum | 500°C 932°F | 715°C 1319°F |
| Gingival material | 500°C 932°F | 55°C 131°F | 755°C 1391°F | 6 | 1 min. under vacuum | 500°C 932°F | 755°C 1391°F |

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Vacumat 100/200/50

| | Final temperature | Predrying time (min.) | Heat rate (min.) | Holding time | Vacuum (min.) | Cooling |
|--|------------------------|-----------------------|------------------|------------------------|---------------|---------|
| Powder bonder bake | 795°C 1463°F | 4 | 5 | 1 min. under vacuum | 6 | — |
| Paste bonder bake | 795°C 1463°F | 6 | 5 | 1 min. under vacuum | 6 | — |
| Opaque bake 1 + 2 | 795°C 1463°F | 4 | 5 | 1 min. under vacuum | 6 | — |
| Shoulder bake | 785°C 1445°F | 6 | 5 | 1 min. under vacuum | 6 | — |
| Dentin bake 1 (with liquid LV universal) ** | 755°C 1391°F | 6 | 5 | 1 min. under vacuum | 6 | — |
| Dentin bake 2 (with liquid LV universal) ** | 755°C 1391°F | 4 | 5 | 1 min. under vacuum | 6 | — |
| Glaze bake | 755°C 1391°F | 2 | 5 | 1 min. **** | **** | — |
| Correction material | 715°C 1319°F | 6 | 5 | 1 min. under vacuum | 6 | — |
| Gingival material | 755°C 1391°F | 6 | 5 | 1 min. under vacuum | 6 | — |

****The glaze bake can be carried out under or without vacuum. The grade of glaze can be increased by prolonging the holding time.

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Remarks:

The Triceram[®] system does not require glaze material. In general, additional glaze can be obtained by extending the holding time. Do not increase the temperature!

▲ Furnace check:

When different alloys are fired in the same furnace, it is necessary to make frequent purge firings to the furnace according to the manufacturer's instructions. This prevents the contamination of the frames with unspecific alloy components and avoids the occurrence of unintentional impurity.

▲ Triceram[®] firing temperature control:

In order to adjust the firing temperature of your furnace, we recommend a firing test, as this is the only way to judge the correct bake sequence.

For that purpose, use NT-material (neutral transparent) mixed with modelling liquid LV universal and fire at the following temperatures:

- base temperature 500°C/932°F
- drying time 6 minutes
- heat rate 55°C/131°F per min.
- vacuum start 500°C/932°F
- vacuum end at final temperature 755°C/1391°F
- holding time 1 minute under vacuum

Put the bake specimen on platinum foil, not on firing cotton, as this may cause dulling.

The temperature of the furnace is correct when the specimen is clear and translucent with sharp edges. If the final temperature is too high, the specimen has a glossy appearance and the edges are not sharply defined. If the final temperature is too low, the specimen appears milky white. According to your result, please raise or lower the final temperature in steps of 10°C/50°F and fire a new specimen.

Important:

Maintain furnace always closed. Close furnace after use or switch to night modus to prevent up-take of humidity.

Please note:

The values given are only guidelines and should be adjusted individually depending on the respective situation, age and manufacturer of the furnace.

The firing charts are based on newly fine-silver calibrated furnaces.

All data have been compiled with due care, however, they cannot be guaranteed.