

Firing charts Triceram[®] ceramics on zirconium dioxide



HOTLINE: +49 7231 / 803-440

Standard program:

	Base temperature *	Drying time	Heat rate/ min.	Vacuum start	Vacuum end	Final temperature	Holding time	Cooling time
Liner bake 1 + 2	500°C 932°F	4 min.	65°C 149°F	500°C 932°F	800°C 1472°F	800°C 1472°F	1 min. under vacuum	0 min.
Shoulder bake	500°C 932°F	6 min.	55°C 131°F	500°C 932°F	790°C 1454°F	790°C 1454°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	760°C 1400°F	760°C 1400°F	1,5-2 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	760°C 1400°F	760°C 1400°F	1,5-2 min. under vacuum	0 min.
Glaze bake	500°C 932°F	2 min.	55°C 131°F	****	****	760°C *** 1400°F	1 min. ****	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	760°C 1400°F	760°C 1400°F	1,5-2 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	760°C 1400°F	760°C 1400°F	1,5-2 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	760°C 1400°F	760°C 1400°F	1,5-2 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	760°C 1400°F	760°C 1400°F	1,5-2 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 ↓
Liner bake 1 + 2	500°C 932°F	1	3	0	9	65°C 149°F	800°C 1472°F	1:00 under vacuum	d	0	0
Shoulder bake	500°C 932°F	1	6	0	9	55°C 131°F	790°C 1454°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	760°C 1400°F	1:30-2:00 under vacuum	d	0	0
Dentin bake 2 (with liquid LV universal) **	500°C 932°F	1	4	0	9	55°C 131°F	760°C 1400°F	1:30-2:00 under vacuum	d	0	0
Glaze bake	500°C 932°F	1	2	0	****	55°C 131°F	760°C 1400°F	1:00 ****	****	0	0

Austromat 3001

Liner bake 1 + 2	C500 T60 T180 · L9 V9 TO65 · C800 T60 V0 CO LO T2 C500
Shoulder bake	C500 T60 T360 · L9 V9 TO65 · C790 T60 V0 CO LO T2 C500
Dentin bake 1 (with liquid LV universal) **	C500 T60 T360 · L9 V9 TO55 · C760 T90-120 V0 CO LO T2 C500
Dentin bake 2 (with liquid LV universal) **	C500 T60 T240 · L9 V9 TO55 · C760 T90-120 V0 CO LO T2 C500
Glaze bake	C500 T60 T120 · L9 TO55 · C760 T60 CO LO T2 C500
	The holding time for dentin and correction bake should be between 90 and 120 seconds.

**** 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
Liner bake 1 + 2	500°C 932°F	3	1	1,0	2,0	820°C 1508°F	65°C 149°F	50 122
Shoulder bake	500°C 932°F	4	2	1,0	2,0	810°C 1490°F	55°C 131°F	50 122
Dentin bake 1 (with liquid LV universal) **	500°C 932°F	4	2	1,0	2,5 - 3,0	780°C 1436°F	55°C 131°F	50 122
Dentin bake 2 (with liquid LV universal) **	500°C 932°F	4	2	1,0	2,5 - 3,0	780°C 1436°F	55°C 131°F	50 122
Glaze bake	500°C 932°F	2	2	****	1,5	780°C 1436°F	55°C 131°F	****

P90/P95

	Base temperature	Heat rate/min.	Firing temperature	Closing time (min.)	Holding time	Vacuum ON	Vacuum OFF
Liner bake 1 + 2	500°C 932°F	65°C 149°F	800°C 1472°F	4	1 min. under vacuum	500°C 932°F	795°C 1463°F
Shoulder bake	500°C 932°F	55°C 131°F	790°C 1454°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	760°C 1400°F	6	1,5-2 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	760°C 1400°F	4	1,5-2 min. under vacuum	500°C 932°F	755°C 1391°F
Glaze bake	500°C 932°F	55°C 131°F	760°C 1400°F	2	1 min. ****	****	—

Vacumat 100/200/50

	Final temperature	Predrying time (min.)	Heat rate (min.)	Holding time	Vacuum (min.)	Cooling
Liner bake 1 + 2	800°C 1472°F	4	5	1 min. under vacuum	6	—
Shoulder bake	790°C 1454°F	6	5	1 min. under vacuum	6	—
Dentin bake 1 (with liquid LV universal) **	760°C 1400°F	6	5	1,5-2 min. under vacuum	6,5-7,0	—
Dentin bake 2 (with liquid LV universal) **	760°C 1400°F	4	5	1,5-2 min. under vacuum	6,5-7,0	—
Glaze bake	760°C 1400°F	2	5	1 min. ****	****	—

**** 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 8 minutes
- heat rate 50 °C / 122 °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.