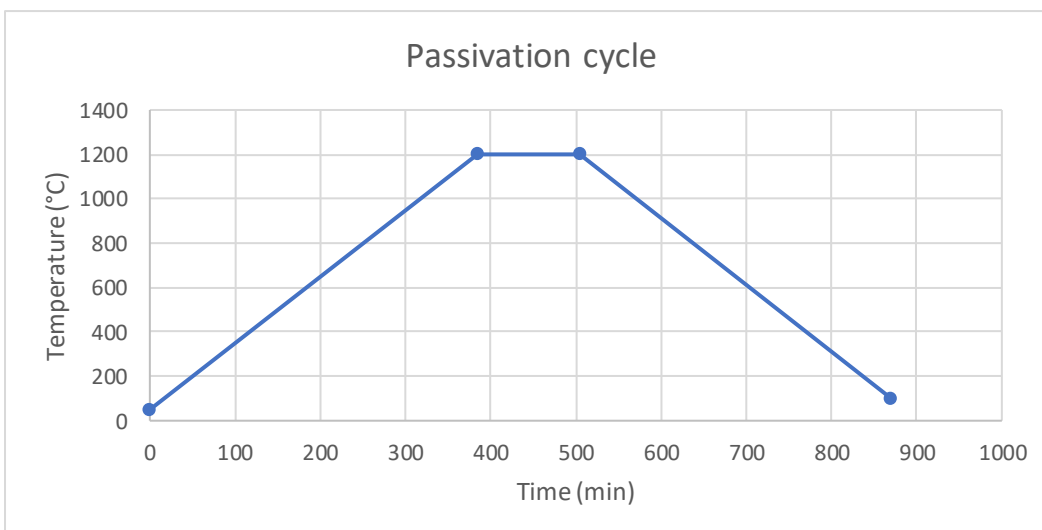
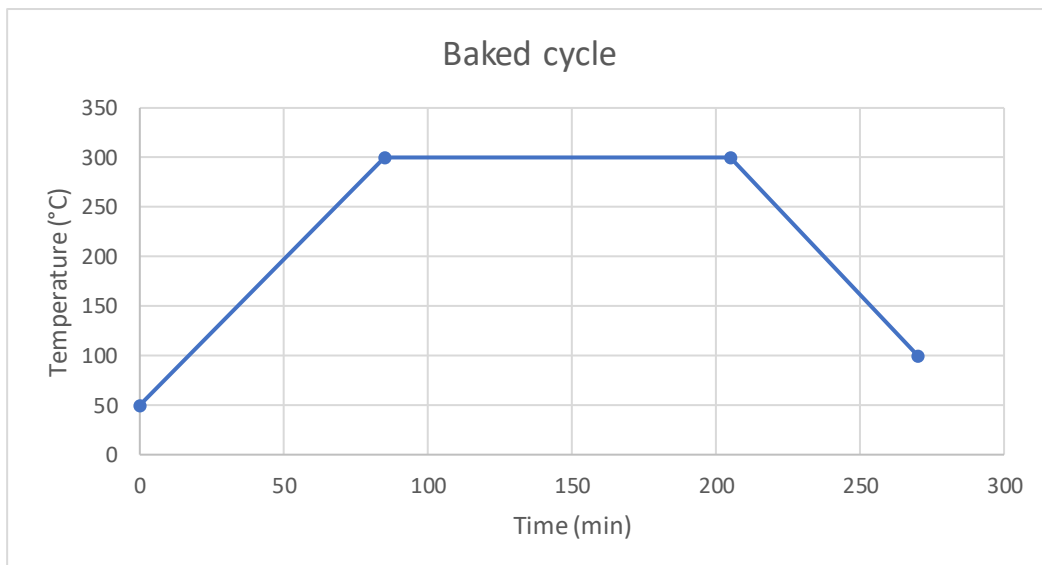


## Initial cycles

Before using your furnace for the first time, two cycles are necessary to “bake” and passivate it. Run these cycles with the refractory blocks on both sides of the tube but with an empty oven.

Initial cycles			
Cycle	Code	Ramps	Duration
« Baked cycle »	C01=50 ; t01=85 ; C02=300 ; t02=120 ; C03=300 ; t03=65 ; C04=100 ; t04=-121	176°C/h to 300°C 2 hours hold 200°C/h to 100°C	4h30
« Passivation Cycle »	C01=50 ; t01=385 ; C02=1200 ; t02=120 ; C03=1200 ; t03=365 ; C04=100 ; t04=-121	179°C/h to 1200°C 2 hours hold 181°C/h to 100°C	14h30



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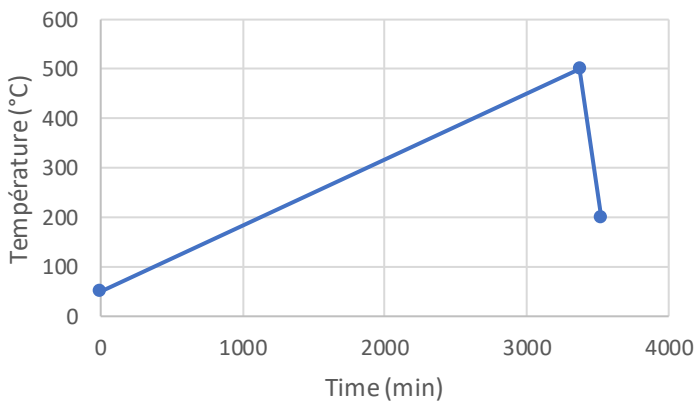
## Black/White Zirconia

For ceramics, place the refractory blocks on both sides of the tube. **Do not close the flanges.**

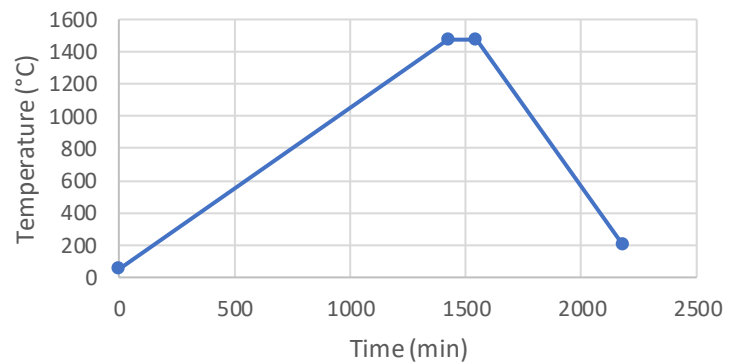
## Black/White Zirconia

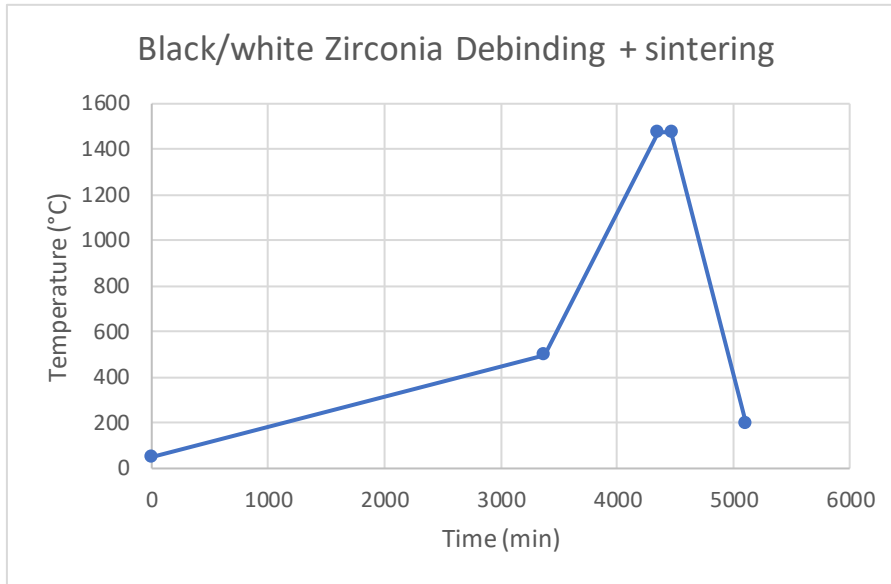
Cycle	Code	Ramps	Duration
Debinding	C01 = 50 ; t01 = 3375 ; C02 = 500 ; t02 = 150 ; C03 = 200 ; t03 = -121	8°C/h to 500°C 120°C/h to 200°C	58h45
Sintering	C01 = 50 ; t01= 1425 ; C02= 1475 ; t02=120 ; C03=1475 ; t03= 637 ; C04= 200 ; t04= -121	60°C/h to 1475°C 2 hours hold 120°C/h to 200°C	36h20
Debinding + sintering	C01 = 50 ; t01 = 3375 ; C02 = 500 ; t02=975 ; C03=1475 ; t03=120 ; C04=1475 ; t04=637 ; C05=200 ; t05=-121	8°C/h to 500°C 60°C/h to 1475°C 2 hours hold 120°C/h to 200°C	85h10

Black/white Zirconia Debinding



Black/white Zirconia Sintering

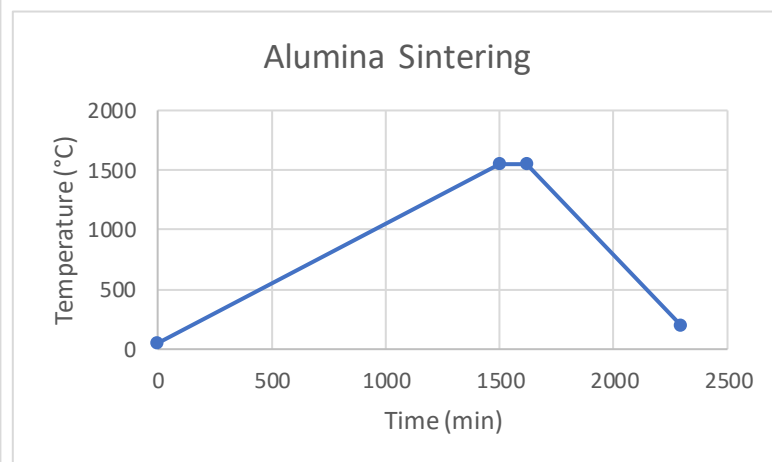
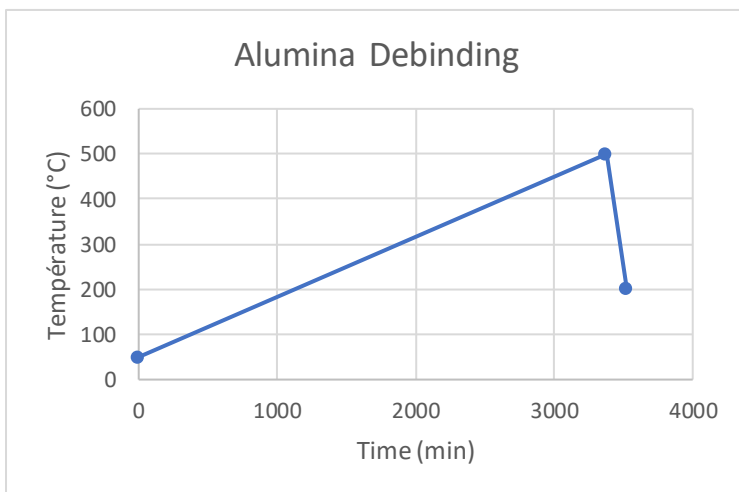


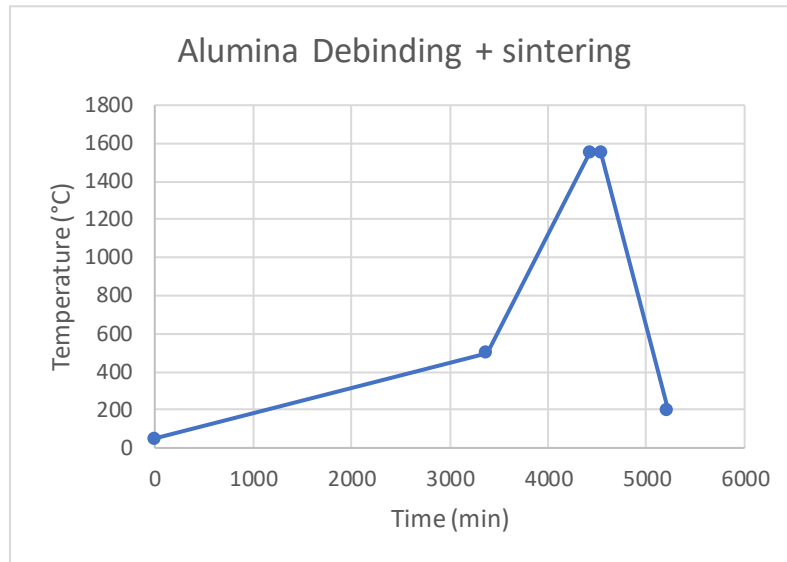


## Alumina

For ceramics, place the refractory blocks on both sides of the tube. **Do not close the flanges.**

Alumina			
Cycle	Code	Ramps	Duration
Debinding	C01 = 50 ; t01 = 3375 ; C02 = 500 ; t02 = 150 ; C03 = 200 ; t03 = -121	8°C/h to 500°C 120°C/h to 200°C	58h45
Sintering	C01 = 50 ; t01= 1500 ; C02= 1550 ; t02=120 ; C03=1550 ; t03= 675 ; C04= 200 ; t04= -121	60°C/h to 1550°C 2 hours hold 120°C/h to 200°C	38h15
Debinding + sintering	C01 = 50 ; t01 = 3375 ; C02 = 500 ; t02= 1050 ; C03=1550 ; t03=120 ; C04=1550 ; t04=675 ; C05=200 ; t05=-121	8°C/h to 500°C 60°C/h to 1550°C 2 hours hold 120°C/h to 200°C	87h00





## Metal 316L and H13

316L and H13 cycles are performed in an argon mixture with 2.5% hydrogen atmosphere.

For metals, place the refractory blocks on both sides of the tube and **close the flanges**.

The flow and the pressure must be adjusted.

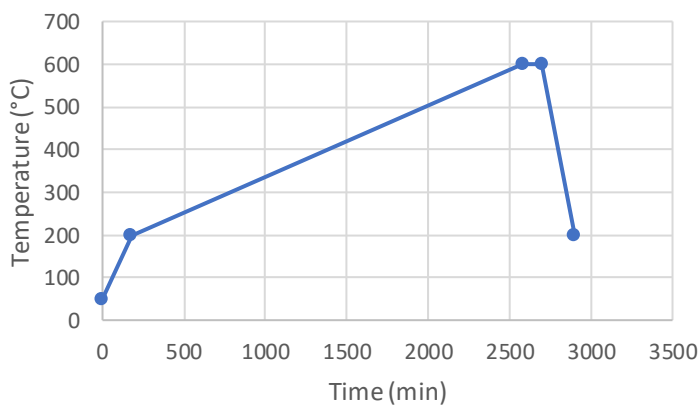
- Flow: 0.4 – 0.6 LPM (0.5 LPM recommended)
- Pressure: 0.2 bar

See the manual of the tubular furnace for more details.

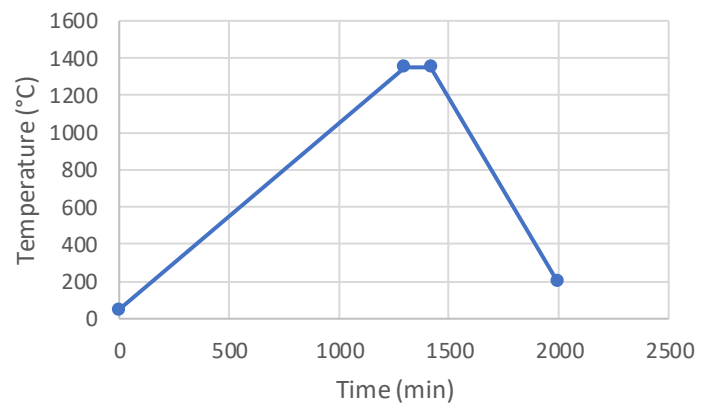
## 316L and H13

Cycle	Code	Ramps	Duration
Debinding	C01 = 50 ; t01 = 180 ; C02 = 200 ; t02 = 2400 ; C03 = 600 ; t03 = 120 ; C04 = 600 ; t04 = 200 ; C05 = 200 ; t05 = -121	50°C/h to 200°C 10°C/h to 600°C 120°C/h to 200°C	48h15
Sintering	C01 = 50 ; t01=1300 ; C02= 1350 ; t02=120 ; C03=1350 ; t03= 575 ; C04= 200 ; t04= -121	60°C/h to 1350°C 2 hours hold 120°C/h to 200°C	33h15
Debinding + sintering (recommended)	C01 = 50 ; t01= 180 ; C02= 200 ; t02=2400 ; C03=600 ; t03= 450 ; C04= 1350 ; t04= 120 ; C05 = 1350 ; t05 = 575 ; C06 = 200 ; t06 = - 121	50°C/h to 200°C 10°C/h to 600°C 100°C/h to 1350°C 2 hours hold 120°C/h to 200°C	62h00

316L/H13 Debinding



316L/H13 Sintering



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