Zetasinter : Facility Guide

The set-up instructions and safety regulations must be followed, otherwise the furnace will be deemed to have been used improperly, effectively cancelling any claims against Nanoe.

1. Shipping and unloading

Suspended loads are dangerous. Working beneath a suspended load is prohibited. There is a risk of fatal injury. Safety and accident prevention guidelines applicable for forklift, stacker and work bench must be followed.

- A standard pallet truck or forklift (forks width 685 mm) is recommended to unload the crate.
- Pay attention to doors width for delivery (1300 mm minimum).
- An aera of at least 3000x2000x2500 (LxWxH) mm is recommended to uncrate the furnace.

Crate dimension (LxWxH)	1200x800x1500 mm
Crate weight	≈200 kg
Contents of the crate	o A Zetasinter furnace o A specific box with an alumina tube o Another box with spare parts

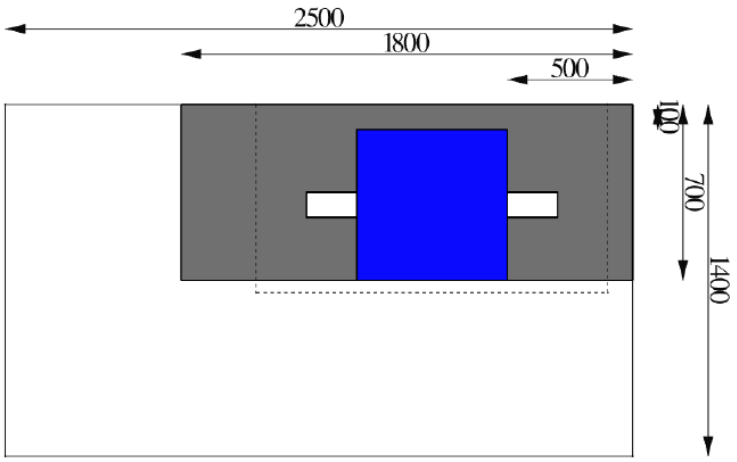
2. Moving and operating space

- The furnace has four wheels with brakes, however the using of a stacker is recommended to lift and lift down the furnace from the crate to the operating space.

Furance dimension (LxWxH)	600x600x770 mm (without tube)	
Weight	112 kg	
Stacker Recommended		Capacity : 250 kg Fork length : 800 mm Fork Width : 300 mm

- Zetasinter Operating area (mm) :

contact@nanoe.com | +33.9.81.98.33.64
6 rue des Frênes 91160 Ballainvilliers France
www.nanoe.com



- For comfortable using experience it is recommended to install the Zetasinter furnace :
  - in a 2500x1400 mm operating space
  - on a work bench
  - under an venting hood (cf. Environmental requirement)

Operating space surface (LxW)	2500 x 1400 mm
Operating space Height (H)	2000 mm without working bench 2500 mm min. with working bench
Work bench recommended	 Material : Not flammable (stainless steel) Capacity : 500 kg LxWxH : 1800x800(700) mm

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3. Environmental requirement

Note :
This product does **not** comply with the ATEX Directive and may **not** be used in ignitable atmospheres.

- Laboratory/Factory environment without dust is recommended :

Room Temperature	5-35°C
Humidity	<70% (non-condensing)

- During thermal treatment the Zetasinter furnace released heat.
- The working area must be ventilated with a non-recycling venting system of 500 m3/h (300 CFM).

Laboratory hood recommended for laboratory environment		Size : 1730x800x1430 mm With controller Max flow : 2000 m^3/h
Canopy hood recommended for factory environment		Size : 1400x700mm With controller Max flow : 1400 m^3/h

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4. Electrical supply

This product does **not** have IP rate electrical plug. The connection to a 200-240V electric power supply is dangerous.
- Electric connection must be carried out by qualified personnel.
- The equipment must be connected to a safe and reliable power supply according to local norms.

- The power supply must be reliable :

Power supply	Single-phase with Earth (ground)
	200-240V~ 50-60Hz Phase-Neutral (or Live-Live)

- The circuit from power supply to furnace must be a dedicated branch circuit :

Circuit breaker	32A
Power cable	3G (3 Core) >4 mm² (<11 AWG) Range – According to cable length
Power Connection	32A SP+N switch fuse-disconnector  Or 32A 3 Pole non fused isolator switch  Or 32A 2P+E power plug and socket 

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- The electric connection must be carried out by qualified personnel :

Connection Details	Furnace cables colour	Supply cables	
		Phase-Neutral 200-240V	Live-Live 200-240V
	Brown	P	L1
	Blue	N	L2
	Green/ Yellow	E (ground)	

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5. Gas supply (for steel filaments only)

Working at a positive relative pressure is not recommended for this product. Gaz supply relative pressure must not exceed 0.2 bar and the flanges must be well fitted.

Inert gaz such as Argon are dangerous due to the asphyxiation hazard.
The working area must be ventilated with an adequate venting system.
Using of an oxygen gaz monitor is recommended.

Note :
This product does **not** comply with the ATEX Directive and may **not** be used with flammable gases.

- Sintering parts are sintered under reducing atmosphere using a mix Argon-Hydrogen gas with 3.0% maximum of hydrogen gaz.
- A minimum gas capacity of minimum 2,5 m^3(stp) is necessary to perform a sintering cycle.
- Supply gaz relative pressure must be set at 0.2 bar.

Gas specification	Ar + H2 2,9 %max *(Linde ADDvance© sinter 250, Airliquide Arcal™ R1-2 or equivalent)*
Cylinder requirement	200 bar /50L/10.5 m3
Pressure reducer for connection to a 200 bar cylinder	 Double stage Inlet max pressure : 200 bar (3000 psig) Outlet pressure : 0.05-1.00 bar (0-25 psig) Inlet fitting : Contact local gas cylinder supplier. Outlet fitting : OD 6 mm

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