



# Bilby 3D

## **MATERIAL DATA SAFETY SHEET**

Issued in Australia by Bilby 3D Pty Ltd.

The attached Material Data Safety Sheet has been prepared by the manufacturer outside Australia.

In accordance with Australia WHS regulations the following Australian contact details apply

### **Section 1: AUSTRALIAN COMPANY DETAILS**

In Australia the product is imported and distributed by:  
Bilby 3D Pty Ltd

Mailing Address :

Kingsgrove Business Centre, 7/192 Kingsgrove Rd, Kingsgrove NSW 2208

Head Office Address :

Kingsgrove Business Centre, 7/192 Kingsgrove Rd, Kingsgrove NSW 2208

Contact Phone: 1800 847 333

### **Section 2: AUSTRALIAN EMERGENCY CONTACT**

#### **Emergency Contact**

In the event of an emergency please contact:

Poisons Information Centre 24 hour Telephone Advice Line on 13 11 26

### **Section 3: AUSTRALIAN ISSUE DATA**

**Date of Issue** : 1 March 2020

## Zetasinter : Facility Guide

### 1. Shipping and unloading

- 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 area of at least 3000x2000x2500 (LxWxH) mm is recommended to uncrate the furnace.

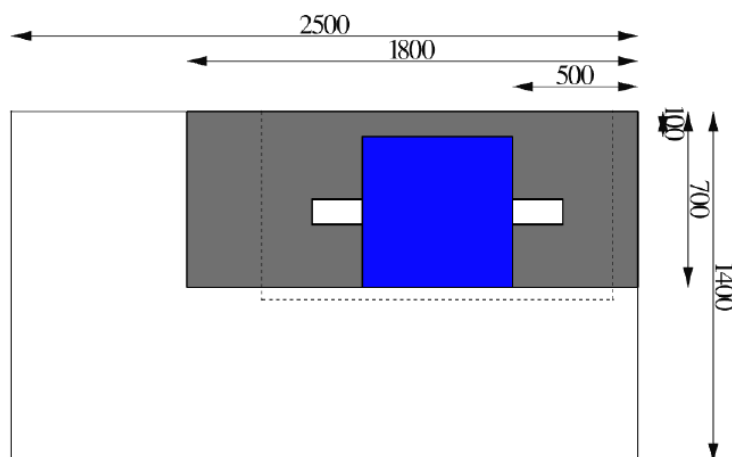
Crate dimension (LxWxH)	1200x1000x940 mm
Crate weight	≈200 kg
Contents of the crate	<ul style="list-style-type: none"> <li>o A Zetasinter furnace</li> <li>o A specific box with an alumina tube</li> <li>o Another box with spare parts</li> </ul>

### 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.


Furnace dimension (LxWxH)	600x600x770 mm (without tube)
Weight	112 kg
Stacker Recommended	 <ul style="list-style-type: none"> <li>Capacity : 250 kg</li> <li>Fork length : 800 mm</li> <li>Fork Width : 300 mm</li> </ul>

- Zetasinter Operating area (mm) :



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- For comfortable using experience it is recommended to install the Zetasinter furnace :
  - o in a 2500x1400 mm operating space
  - o on a work bench
  - o 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

### 3. Environmental requirement

- Laboratory/Factory environment without dust is recommended :

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

- During thermal treatment the Zetasinter furnace released heat.
- A non-recycling venting system of 500 m<sup>3</sup>/h (300 CFM) is recommended.




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

## 4. Electrical supply

- 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 mm <sup>2</sup> (<11 AWG) Range – According to cable length
Power Connection	<p>32A SP+N switch fuse-disconnector</p>  <p>Or</p> <p>32A 3 Pole non fused isolator switch</p>  <p>Or</p> <p>32A 2P+E power plug and socket</p> 

- 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)	




## 5. Crucible

- 1700°C alumina crucible is recommended.

Crucible with 1 mm alumina media balls		Material : Alumina Max width : 77 mm Max Height : 27 mm
Tubular furnace alumina plate		Material : Alumina Size : 200x88 mm or 200x75 mm

## 6. Gas supply (for steel filament only)

- 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<sup>3</sup> is necessary to perform a sintering cycle.
- Supply gaz pressure must be at 2 bar;
- Supply gas flow must be at 0.1-1.0 L/min.

Gas specification	Ar + H2 2,9 %max	
Cylinder requirement	200 bar /50L/10.5 m3	
Pressure reducer for connection to a 200 bar cylinder		<p>Double stage</p> <p>Inlet max pressure : 200 bar</p> <p>Outlet pressure : 0.1-3.0 bar</p> <p>Inlet fitting : Contact local gaz cylinder supplier</p> <p>Outlet fitting : 1/4"NPT</p>
Pressure regulator for connection to an 8-10 bar gas circuit		<p>Inlet max pressure : 8 bar min</p> <p>Outlet pressure : 0.3-4.0 bar</p> <p>Outlet fitting : 1/4"</p>
Flowmeter		<p>Gaz : air</p> <p>Min flow rate : 0.1 LPM</p> <p>Max flow rate : 1.0 LPM</p> <p>Outlet/inlet fitting : 1/8"</p>