GVB SOLUTIONS IN GLASS

SN10 Square Sintered Quartz Crucible for Poly Crystalline Silicon Growth for Solar Cell

Square sintered quartz crucible type SN10 is of white color and ceramic appearance.
Generally, there are two kinds of crucible forming techniques, slipcasting and gel casting technology. Slipcasting is a traditional technology, which is currently used from different manufacturers. That is molding the fused silica slurry in plaster moulds which can absorb moisture of the slurry and help to form an unburned crucible. Gel casting technology is to add a kind of organic monomer in the fused silica slurry and form the slurry in stainless steel mould and directly solidify it to be an unburned crucible. Our special gel casting production technology guaranties the crucible a high quality and narrow dimensional tolerance. Furthermore, large size and complex shape can be produced with stable quality. The crucible is of high purity and resistant to thermal shock. It is an ideal crucible for poly crystalline silicon crystal growing for solar cell production.

1. Chemical Composition **unit: ppm**

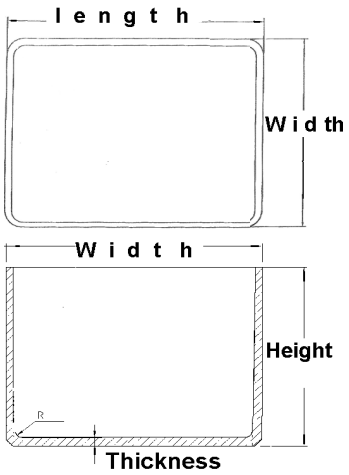
Al	Ti	Fe	Ca	Cu	K	Li	Mg	Na	Zr
600	10	15	30	0,1	18	1	10	10	3
Mn	P	B	Ba	Ni	Cr	SiO_2			
0,4	0.2	0.1	1,5	<0,1	<0,1	99,9%			

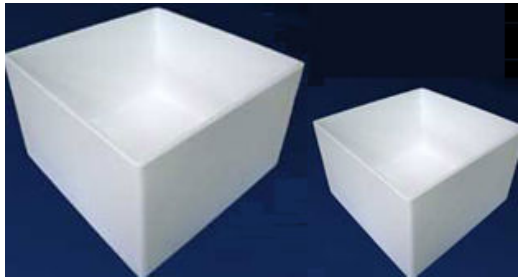
2. Physical Properties

Maximum Temperature (°C)	1650
Bulk Density (g/cm^3)	1.78
Apparent Porosity (%)	15.0
Compressive Strength (Mpa) at 20°C	50
Bending Strength (Mpa) at 20°C	20
Thermal Expansion ($10^{-6}/^0c$)	0,9
Thermal Conductivity (W/m x k (RT 1000°C)	0,6 - 1,7
Crystallinity (vol. %)	1

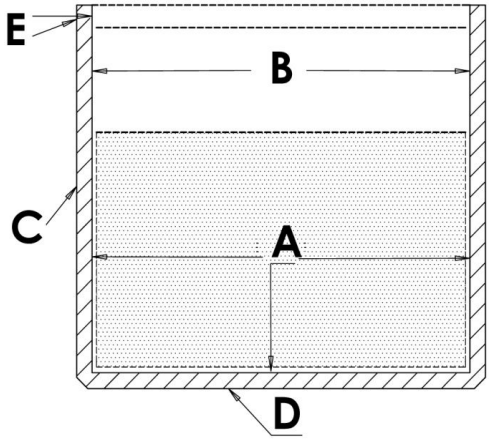
3. Available Sizes

Size (mm) (L × W × H)	Dimension
722×722×420	720
878x878x420	900
878x878x480	900





4. Visual Criteria



Zone A	crystallization zone--the inner surface of 2/3 distance from crucible bottom
Zone B	fusion zone--the inner surface of 1/3 distance from crucible mouth
Zone C	the outer surface of crucible wall
Zone D	the outer surface of crucible bottom
Zone E	mouth--the inner & outer surface of 20mm depth from crucible mouth

Unit: mm

Visual Defect	Check Method	Zone A	Zone B	Zone C	Zone D	Zone E
chip	by naked eyes	not allowed				≤ 25 x 15 x 5
deformation		inner corners deformation shall not affect the thickness		shall not exceed more than 2mm and shall not affect the thickness		shall not affect thickness by more than 2mm
pit		L x W x H ≤ 3 x 3 x 2 mm, total no more than 4pcs, ≤ 3pcs per face		L x W x H ≤ 3 x 3 x 2 mm, ≤ 4pcs per face		
hole		not allowed				
crack	solvent coating naked eyes	not allowed				
foreign inclusion	by naked eyes	not allowed				

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