

Heraeus



**Heraeus CZ Crucibles  
for Solar Mono Wafer**

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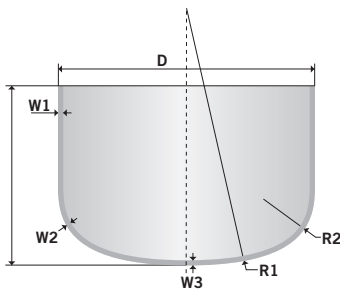
Heraeus produces quartz glass crucibles for CZ crystal growing for customers in the photovoltaic industry. In close cooperation with our customers we develop crucibles that are tailored to the processes of our customers. Our product portfolio covers quartz glass crucibles with diameters from 22" to 36" made from natural as well as synthetic and Ba-doped quartz glass qualities. These are designed according to the requirements and cost structure of the solar industry.

Heraeus quartz glass crucibles are available in 22", 24", 28", 32" and 36" sizes. All crucibles have a typical clear layer fraction of 40% – 60% with low bubble content and an opaque outside layer made of high purity natural quartz. The specifications are tailored to the needs of every single customer in order to find an individual optimum in Cost of Ownership (CoO).

Heraeus Quarzglas can provide a wide range of inner layer materials e.g. high purity natural quartz, ultra high purity synthetic quartz glass, and Barium doped quartz.

## Dimensions

(mm)	crucible	22"	22"	24"	24"	28"	32"	36"
D	outer diameter	559 ± 3	559 ± 3	613 ± 3	610 ± 3	706 ± 3	812 ± 3	910 ± 5
H	height (tolerance ± 2)	up to 470	up to 470	up to 470	up to 470	up to 530	up to 530	up to 530
W1	wall thickness 1	10 ± 3	10 ± 3	11 ± 3	11 ± 3	13 ± 4	16 ± 4	16 ± 5
W2	wall thickness 2	12 ± 3	12 ± 3	12 ± 3	12 ± 3	17 ± 3	24 ± 5	26 ± 5
W3	wall thickness 3	9.5 ± 3	11 ± 3	11 ± 3	11 ± 3	13 ± 4	14 ± 4	17 ± 5
R1	radius 1	558	558	610	610	708	810	914
R2	radius 2	110	90	127	120	140	170	180



## Used Materials

### Natural Quartz raw materials

Various natural quartz sands are used for the production of our crucibles. The used raw materials are optimized for the customer application. All different quartz sand qualities are purified and controlled at Heraeus, in order to ensure a constantly high level of quality and purity.

### Synthetic Quartz raw materials

Heraeus is one of the largest producers of synthetic quartz glass. Our crucibles can be made with doped or undoped inner layers of synthetic quartz glass with customized properties.

### Ba-doped Quartz raw material

For special applications like Multi-Pulling or heavy doped wafers Heraeus can also provide crucibles with a special patented Ba-doped inner layer.