



MOMENTIVE

performance materials

Quartz Crucibles

In the manufacture of silicon ingots, polysilicon starting materials are placed in fused quartz crucibles, heated to high temperatures and pulled from the melt as a single crystal.

Fused quartz is one of the few materials that can combine the high purity and thermal resistance properties required.

A Variety of Compositions

To keep pace with the increasingly stringent purity requirements, Momentive Performance Materials offers a variety of compositions in its quartz crucibles. Each type is designed to address specific microcontamination concerns.



Momentive Quartz Crucible Products	
Type	Description
530	Bubble composite with a virtually bubble free 1mm to 3mm inner layer, standard chemsity
532	Bubble composite with a virtually bubble free 1mm to 3mm inner layer, low aluminum, low boron
541	Synthetic inner layer
587	Bubble composite with a virtually bubble free 1mm to 3mm inner layer, low alkali
588	Bubble composite with a virtually bubble free 1mm to 3mm inner layer, low alkali, low aluminum, low boron

Why Low Aluminum, Boron?

When growing high resistivity crystals, some boron impurity can dissolve into the melt. Boron is a group III element and as such a dopant that lowers the resistivity of the silicon. Certain applications such as discrete devices require high resistivity silicon wafers. For high resistivity crystals/wafers, a low boron type crucible is recommended.

Typical Viscosity Data	For Type 530 Crucibles
Log ₁₀ Viscosity @ 1100°C	14.7
1200°C	13.0
1300°C	11.5
Annealing Pt. °C	1200

Typical Sizes and Tolerances for Fused Quartz Crucibles

(Dimensions and Tolerances in Inches)

Crucible Sizes	Typical Diameter	Typical Height	Wall 1	Wall 2	Wall 3	Nominal Radius		Maximum Gap
						R1	R2	
12"	12.000±.075	9.500±.125	.300±.050	.300±.075	.300±.075	12.0	3.0	0.125
13"	13.000±.080	9.500±.125	.300±.080	.300±.080	.300±.080	12.0	3.0	0.188
14"	14.000±.100	11.000±.125	.300±.100	.300±.100	.300±.100	15.0	3.5	0.188
15"	15.000±.100	12.000±.118	.310±.100	.310±.100	.310±.100	15.0	3.0	0.188
16"	16.000±.100	12.000±.118	.380±.100	.380±.100	.380±.100	16.0	3.5	0.188
18"	18.000±.118	14.000±.118	.350±.118	.350±.118	.350±.118	18.0	3.5	0.188
20"	20.000±.118	15.000±.118	.400±.118	.400±.118	.400±.118	20.0	3.5	0.188
22"	22.000±.185	17.000±.125	.400±.118	.400±.118	.400±.118	22.0	3.5	0.188
24"	24.000±.185	15.000±.125	.400±.118	.400±.118	.400±.118	24.0	3.5	0.188

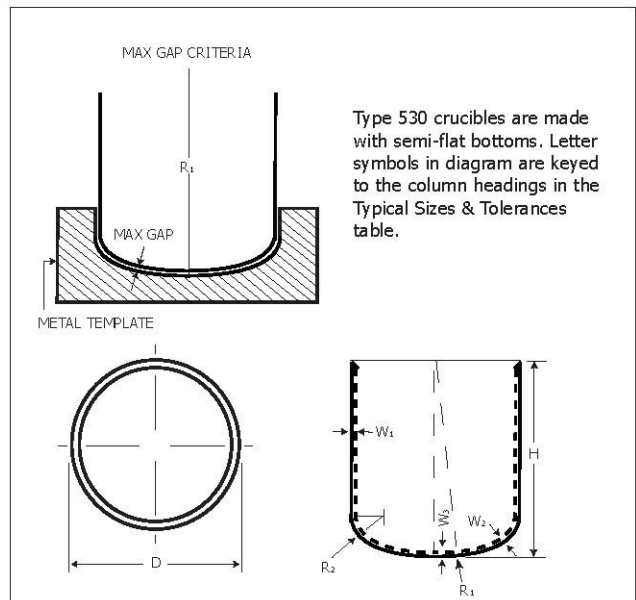
Momentive Quartz Crucibles are designed for your specific application. Call Momentive to discuss your requirements.

Patented Coating Technology

Momentive's patented barium coating technology reduces corrosion of quartz by silicon melt, extending the life of the crucible and improving single crystal yield.



Momentive quartz crucibles are available in a range of standard sizes from 12 to 32 inches in diameter, and in custom-made sizes.



Engineered to Your Specifications

In addition to the available compositions, Momentive's Crucible Team is prepared to work with you on your specific crucible designs. Our engineers can work with you to develop the product needed for your applications.

Let us know your requirements.

www.momentive.com

SALES OFFICES

USA

T: 440.878.5700

F: 440.878.5928

E: cs-na.ceramics@momentive.com

GERMANY

T: 49.4152.938.300

F: 49.4152.938.303

E: cs-eur.ceramics@momentive.com

JAPAN

T: 81.3.5114.3774

F: 81.3.5114.3779

E: cs-jp.ceramics@momentive.com

CHINA

T: 86.21.3860.4500

F: 86.21.5079.3736

E: cs-asia.ceramics@momentive.com

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