

EMPOWERING

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# Roiceram™-HS

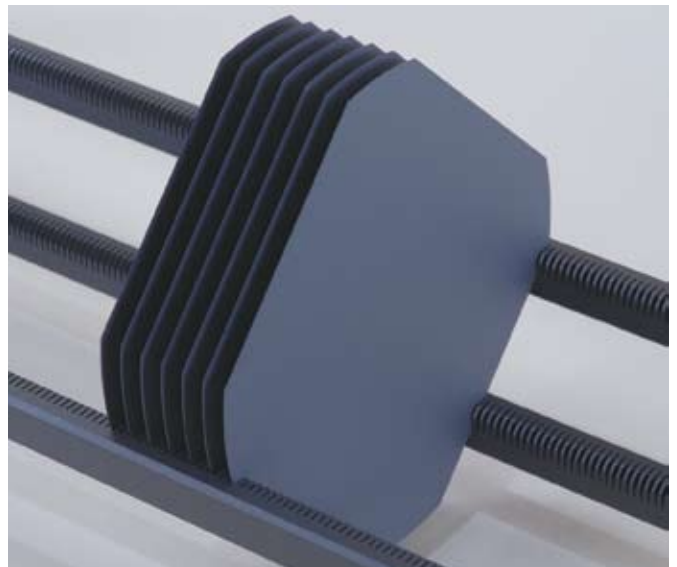
Roiceram-HS is High purity SiC components for solar cells. Roiceram-HS has high thermal conductivity, high-strength, high-corrosion resistance, high-heat resistance

AGC's Roiceram material is ideal for making high purity SiC components, It is customized for semiconductor thermal process usage. Roiceram-HS has superb high temperature strength preventing softening or deformation in cycle use over 1200°C temperature range. [i.e Diffusion process]. AGC applies the latest CNC machining technology assuring the highest level of dimensional accuracy in difficult to machine ceramic materials.

## PRODUCT DESCRIPTION

Applications

High heat-resistant ware for phosphorus diffusion processes



FOR MORE INFORMATION

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# Material Properties of Roiceram-HS (SiC)

## Impurity Concentration

Typical Data

Element	Unit	Roiceram-HS U -Grade SiC+Si (Recrystallized SiC+Si)	Roiceram-HS SiC-CVD coat	Quartz
Fe	ppm	3	0.028	0.1-0.8
Al	ppm	25	0.017	8-28
Ni	ppm	1	0.004	0.05
Ca	ppm	5	0.015	0.2-1.0
Cu	ppm	<1	0.008	0.005-0.1
Na	ppm	<1	0.004	0.2-2.0
Ti	ppm	1	0.003	0.3-2.0

## Material properties

Typical Data

Properties	Unit	Roiceram-HS U -Grade SiC+Si (Recrystallized SiC+Si)	Roiceram-HS S-Grade SiC-CVD	Quartz
Density	g/cm <sup>3</sup>	3.02	3.21	2.20
Porosity	%	0	0	0
Hardness	GPa	25	35	9
Bending Strength	Mpa	230	650	59
Young's Modulus	Gpa	350	490	74
CTE ( $\alpha$ )	$\times 10^{-6}/K$	4.3	4.3	0.54
Thermal Conductivity	W/m·k	170	240	1.4
Electrical Resistivity	$\Omega \cdot cm$	$10^{-1}$	$10^2$	$10^{14}$
Softening point	°C	Non	Non	1070

※Coefficient of thermal expansion

## Acid resistance comparison among wafer jig materials.

