

EMPOWERING



SOLAR EFFICIENCY

# ROICERAM™-HS (SiC)

AGC's ROICERAM™ is high purity material for SiC jigs and suitable for semiconductor thermal process.

旭硝子的SiC治具是主要应用与半导体制造中热处理工程用具的一种纯度极高的材料。

## High purity SiC components for solar cell thermal process

太阳能电池制造装置用SiC制品

### SiC Boat SiC舟

Superior thermal durability makes full loading of wafers on the jigs in small spacing and improves productivity.

为了不使在高温下变形, SiC舟允许携带大量高品质的wafer,从而能大幅提高产能

### SiC Cantilever SiC浆

Adoption of SiC cantilever system suppresses vibration during loading/unloading and reduces negative impact upon wafers, in comparison with conventional quartz-push-rod system.

与石英设备相比,在装载wafer和卸载wafer时, SiC浆所产生的振动更小。

## PRODUCT DESCRIPTION

Applications

Thermal-resistant jigs for doping process.

用途

磷扩散工程用高耐热治具



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# Properties of ROICERAM™-HS(SiC)

## Impurities

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

## Mechanical and Thermal 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 ( $\times$ )	$\times 10^{-6}/K$	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 of wafer jig materials

