

Silicon Carbide Ultrafine Powder

SER/SER-A Series

The SER/SER-A Series is a line of ultrafine powders consisting of green silicon carbide.

Products are grouped according to purity, into the SER Series and SER-A Series.

The products come in a range of grain sizes and purity grades, so users can select the right one for their particular application.

We now offer a new high purity product for making sintered parts. The product has very low levels of impurities.

Applications

Ultrafine powders are mostly used for four types of applications (listed below), and the SER/SER-A Series includes products suitable for all of them.

1. Raw material for sintered parts

SER/SER-A ultrafine powders are used as a raw material for fine ceramics that are used to manufacture filters, heating elements, etc.

2. High purity raw material for sintered parts

SER/SER-A ultrafine powders contain only 10 ppm level of iron (Fe) which made it possible to make fine ceramics with high purity for semiconductor manufacturing equipment, etc.

3. Fire resistant, abrasion resistant, high thermal conductivity fillers

Silicon carbide is heat resistant and has high thermal conductivity, and is thus being looked at as a material for composites (filler).

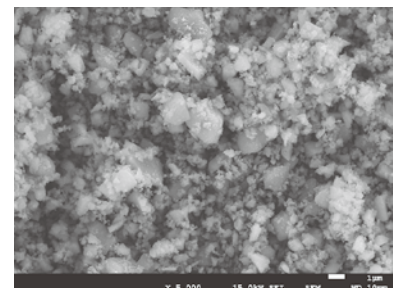
4. Coating & composite plating materials

SER/SER-A ultrafine powders are used as a composite plating material, used to enhance the fire resistance and abrasion resistance of automobile and aircraft components.

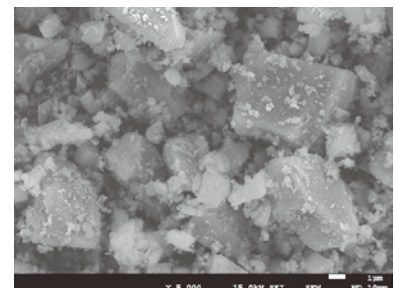
Product types and properties (standard values)

Product type		SER Series				SER-A Series				Remarks
Particle size		06	10	15	20	06	10	15	20	
Average particle size, μm		0.6	1.0	1.3	2.0	0.6	1.0	1.3	2.0	Measured by Microtrac
Chemical composition, wt%	SiC	95.7	97.7	97.8	98.0	98.9	98.0	99.4	98.6	JIS method
	F-C	0.6	0.1	0.1	0.2	0.6	0.1	0.1	0.2	
	T-Al	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	
	T-Fe	0.9	0.4	0.4	0.6	0.02	0.02	0.02	0.02	
	SiO ₂	2.8	1.8	1.7	1.2	0.5	1.8	0.5	1.2	
Specific surface area, m^2/g		13 to 15	8 to 9	6 to 7	4 to 5	13 to 15	8 to 9	6 to 7	4 to 5	BET method
Bulk density, g/cm^3		0.9	1.0	1.1	1.2	0.9	1.0	1.1	1.2	Tapped

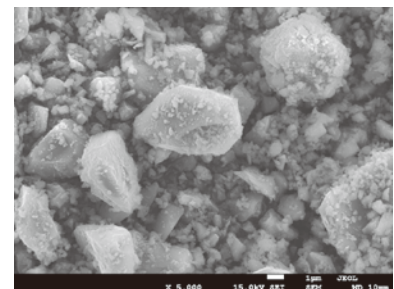
Particle shapes (SEM)



SER-A06 5,000 times



SER-A10 5,000 times



SER-A15 5,000 times

Products' particle size distribution

Particle size distribution, measurement results (Microtrac HRA)

