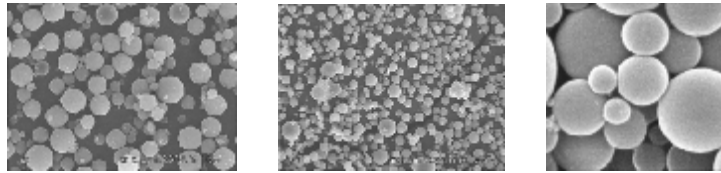


## SSP Series High Purity and Spherical Silica Powder



### 1. Application

The SSP series of spherical fused silica powder is monodisperse, smooth surface, good fluidity and low thermal expansion coefficient. In view of these characteristics, spherical silica powder can be widely used in large scale integrated circuit packages and electronic components, high voltage insulation pouring device; also be used for advanced rubber tires, silicone rubber, silicon-based substrate materials, high-grade ink, paint, sealants, adhesives, electronic ceramics, optical quartz glass, plastic enhanced modification, functional plastic film, drawn fiber optics, medical dental materials, cosmetics and chemical medicine, environmental protection and other fields. Spherical silicon powder has become the most important in many high technology and the most critical one basic material.

### 2. Type and Main Specifications

#### 2.1. SSP-NG Nanometer Grade, High Purity and Spherical Silica Powder

<b>SSP-NG Physical Properties</b>	
Appearance:	Fine and white powder
X-Ray	Amorphous
BET Surface Area	20m <sup>2</sup> /g
Particle Sharp	Spherical
Particle Size	20-550 Nanometer
Bulk Density	34.1 kg/cu kg
Refractive Index	1.46
Behavior in Water	Hydrophilic
Specific Gravity	2.1
<b>SSP-NG Chemical Components (Typical Data, Reference Only)</b>	
SiO <sub>2</sub>	99.995% min.
Na	0.2 -0.3 ppm
Al	0.15-0.5 ppm
Fe	0.3-0.5 ppm

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Mg	0.5-1.0 ppm
Ca	0.2-0.5 ppm
Li	0.01-0.03 ppm
Ti	0.05-0.1 ppm
Zr	0.05-0.08 ppm

Note: All of above datas shall be only reference, not guaranteed value. The Exact data shall be subject to the final Inspection Certificate.

## 2.2. SSP-MG Micrometer Grade, High Purity and Fused Spherical Silica Powder

ITEM	UNIT	SSP-MG10	SSP-MG7	SSP-MG4	SSP-MG2.5	SSP-MG1	
Size: D <sub>50</sub>	μm	10±2	7.0±1	4.0±1	2.5±0.5	1.0±0.5	
Size: D <sub>max</sub>		45	30	15	10	5	
SiO <sub>2</sub> content	%	99.95	99.95	99.95	99.95	99.95	
H <sub>2</sub> O content		0.05	0.05	0.05	0.05	0.05	
Spherical Ratio		>98	>98	>98	>98	>98	
BET Surface Area	M <sup>2</sup> g <sup>-1</sup>	1.0	1.5	1.7	1.9	9.0	
Na	ppm	<10	<10	<10	<10	<10	
K		<2	<2	<2	<2	<2	
Ca		<3	<3	<3	<3	<3	
Mg		<1	<1	<1	<1	<1	
Al		<50	<50	<50	<50	<50	
Fe		<10	<10	<10	<10	<10	
Ti		<10	<10	<10	<10	<10	
As		<1	<1	<1	<1	<1	
P		<1	<1	<1	<1	<1	
Cr		<1	<1	<1	<1	<1	
Mn		<1	<1	<1	<1	<1	
Ni		<1	<1	<1	<1	<1	
Cu		<1	<1	<1	<1	<1	
Mo		<1	<1	<1	<1	<1	
U		ppb	<0.3	<0.3	<0.3	<0.3	<0.3

Note: All of above datas shall be only reference, not guaranteed value. The Exact data shall be subject to the final Inspection Certificate.

## 3. Packing

Packing by brown paper drum with 25kg net per drum (25Kg/Drum) or 25Kg net per pp bag within plastic inner bag.

## 4. Application Domain

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#### 4.1. Quartz Crucible Application



Quartz Crucible production is part of semiconductor industry. However, this application is often singled out due to its particular place in the production. The quartz crucible are widely used for the production of polycrystalline silicon(polysilicon) and mono crystalline



silicon(monosilicon) from silicon metal. In order to produce the high-quality semiconductor plates, polysilicon is placed into a quartz crucible heated to a high temperature, and a monosilicon is drawn out of the melted silicon. The fused quartz is one of the few materials that combine high purity and heat resistance required for the process. Crucible production is a very complicated process, and a special know-how is needed to produce a crucible of a definite size. The main producers try to make crucibles larger and larger: the larger is the diameter of the crucible, the wider is the diameter of the crystal and the silicon wafer that can be obtained. General Electric, for example, produces crucibles with diameters between 12 and 32 inches and cuts silicon wafers 100-300 mm in diameter.

#### 4.2. Electronic Packaging Application



Spherical silica powder used as filler can greatly improve the product rigidity, abrasion resistance, weather resistance, impact resistance, compressive strength, tensile strength, flame resistance, good insulation properties and arc resistance



characteristics of ultraviolet radiation. Spherical silica powder filled epoxy molding compound thermal conductivity is small, expansion coefficient is small, the substrate for microelectronic components and packages up to 90% fill rate can be used as large-scale, large scale integrated circuit substrate material and the ideal Packaging Materials



Spherical silica powder surface fluidity, and resin mixing film uniformity, a small amount of resin added, and the mobility of the best powder filled in up to the highest weight of 90.5% up

#### 4.3. Electronic Ink Materials



The spherical silica powder has good flow and lubrication, you can achieve better dispersion and stability of suspension, ball silica powder used in inks and pigments in inks and paints can instead use less high hiding power, good gloss, resin fine grain size, forming a continuous, thin film, so that the printing of the pictures are clear, if used in UV ink, you can speed up the curing speed, and because the fine filler dispersion and uniform ink film shrinkage to eliminate wrinkles. Make colorful and light ink, the printed image more beautiful.

#### 4.4. Optical Fiber Materials



Spherical fused silica powder has a smooth surface, large surface area, hardness, chemical stability, thermal expansion coefficient is small, scrolling is good, excellent mechanical properties, and other unique properties. Spherical silica fume due to its high dielectric, high heat, high humidity, high filler content,

low expansion, low stress, low impurities, low friction coefficient, excellent performance and a high quality raw material for making optical fibers.

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#### 4.5. Cosmetics Raw Materials



Spherical silica powder

It's smaller average particle size to determine their good smoothness;

Its narrow size distribution to determine its good liquidity and touch;

It's larger than the capacity to determine their cosmetic formulations more economical.

It's a larger surface area to have a good absorption, can be used to flavor, nutrients and protection chemicals.

Spherical silica powder, used in lipstick, face powder, foundation cream and other formulations of characteristics are: a good dispersion and compatibility oil phase; good affinity to skin; good hydrophobicity, can enhance the make-up performance.

#### 4.6. Special Ceramics Application

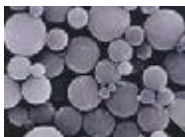


Spherical silica powder is an important functional materials with chemical stability, acid, well-developed porosity, large surface activity, low oil absorption, high temperature,

thickening and strong, good electric insulation, anti-ultraviolet properties, and their special structure, it had four major effects, these effects make synthetic materials with traditional materials do not have the physical and chemical properties, use of these features, that can improve traditional materials, but also generate new material. For example, high strength, super-hard, high toughness, superplastic materials and insulation materials, electrode materials and superconducting materials, special low-temperature sintering refractory heat exchange materials such as high-tech and new materials



#### 4.7. Optical Fiber Cable Filling Gel Thickener



Cable in the process of long-term use, due to the infiltration of water and moisture, will result in deterioration of the transmission performance of fiber optic cable, or even can not use. In order to prevent the intrusion of moisture and friction between the optical fiber made of fiber damage, in addition to filling

the gap of the optical fiber cable ointment, but also need optical fiber coated with ointment. The Company may replace the use of high purity spherical silica imported raw materials, so not only low cost, and the performance index has reached the level of imports of similar products.

#### 4.8. Precision Grinding Powder



High purity spherical silica powder is widely used in optical devices and optoelectronic industry, precision grinding, especially for grinding, polishing semiconductor single crystal silicon chip, glass screen CRT glass, optical glass, liquid crystal display (LCD, LED) glass substrates, piezoelectric quartz crystal,

compound semiconductor materials (gallium arsenide, indium phosphide), magnetic materials such as semiconductor industry.

#### 4.9. Paint Industry Materials



High purity spherical silica powder with conventional SiO<sub>2</sub> do not have special optical properties, it has a strong UV absorption, infrared reflectance characteristics. . Add it to the paint coating can form a shielding effect, to ultraviolet aging and thermal aging purposes, while increasing the insulation coating.

High purity spherical silica powder has a large surface area, showed great activity, can form a network structure when the paint dried. While increasing the strength and finish paint, but also improve the color of the suspension, the color of paint to maintain long-term change. Exterior latex paint in the building, if the added high purity spherical silica powder, can improve the effect of coating cans, paint is not stratification. With thixotropy, anti-sag, good construction performance, in particular the anti-contamination performance greatly improved, with excellent self-cleaning ability and adhesion.

### 5. Quality and Performance Control



The SSP series high purity and spherical silica power materials are controlled by a full time laboratory facility providing analytical support related to quality control combined with ongoing R&D for all

of the products and activities.

Analytical capabilities include wet chemistry, microwave digestion, atomic absorption, computer driven ICP and flame photometry. The laboratory also performs complete sample preparation including crushing, grinding and magnetic separation and can simulate all plant beneficiation methods

### 6. Contact information

If you have any more enquiry or comments for above mentioned specifications and related information, then please contact us as per the follow information:

Sales Hotline: 4008-900-668

Tel: (86-10) 82070681;82070682;82070683

Fax: (86-10) 82070690; 82079576

E-Mail: [sales@sinosi.org](mailto:sales@sinosi.org) or [sales@sinosi.com](mailto:sales@sinosi.com)

### 7. Special Note

You are kindly informed that we, Sinosi Group, has the right to adjust, improve and amend any of above items and related terms and conditions without any prior notice due to technical improvement and request per the government laws and regulations. Your kind understanding and cooperation will be appreciated.