

# FUSED SILICA

## Technical Data Sheet (TDS)

Sand & Powder | Grade A / B / C / C'

**LIANYUNGANG CHEMSIZE INTERNATIONAL TRADING CO., LTD**

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Reliable fused silica supply since 2007 • Stable quality control • Multiple grades & sizes

## Product Overview

Fused silica is produced by electrically fusing high-purity crystal silica at 1800–2000°C to obtain amorphous silicon dioxide. It is then processed and classified into different particle sizes for refractory, ceramic and precision casting applications.

## Typical Applications

- Refractory raw material
- Ceramic Raw material
- Filler of epoxy molding compound,paint,coating.
- Investment casting(lost-wax casting),making slurry and shell

## Typical Physical Properties

| Property                         | Value                    |
|----------------------------------|--------------------------|
| Color and particle shape         | White/ angular           |
| Hardness                         | 7Mohs                    |
| True Specific Gravity            | 2.2g/cm <sup>3</sup>     |
| Softening poing                  | approx.1650°C            |
| Melting point                    | approx.1750°C            |
| Bulk Density                     | 0.9-1.1mt/m <sup>3</sup> |
| Dielectric Constant              | 3.8(1MHz)                |
| Thermal Conductivity             | 1.3w/m·k                 |
| Coefficient of thermal expansion | 0.5*10 <sup>-6</sup>     |

## Typical Chemical Specification (Guide Values)

| Component                      | Grade A | Grade B | Grade C | Grade C <sup>-</sup> |
|--------------------------------|---------|---------|---------|----------------------|
| SiO <sub>2</sub>               | >99.9%  | >99.85% | >99.7%  | >99%                 |
| Al <sub>2</sub> O <sub>3</sub> | <0.015% | <0.05%  | <0.06%  | <0.5%                |
| Fe <sub>2</sub> O <sub>3</sub> | <0.005% | <0.008% | <0.06%  | <0.1%                |
| Na <sub>2</sub> O              | <0.003% | <0.015% | <0.015% | <0.1%                |
| K <sub>2</sub> O               | <0.003% | <0.015% | <0.015% | <0.1%                |
| CaO                            | <0.003% | <0.015% | <0.015% | <0.1%                |
| Quartz-SiO <sub>2</sub>        | <0.1    | <0.1    | <1      | 0.5                  |
| Cristobalite-SiO <sub>2</sub>  | <0.1    | <0.1    | 2       | 15.3                 |
| Amorphous matter               | >99     | >99     | 97      | 84.2                 |

Note: The finer the powder, the higher Al<sub>2</sub>O<sub>3</sub> due to alumina ceramic milling media.

## SGS Test Results (Representative Samples)

The following values are from SGS testing reports for representative samples. Results may vary by batch and particle size.

### Grade A (SGS Report: MSRGZ2101581-01A)

| Item                           | Unit | Sand   | Powder(325Mesh) |
|--------------------------------|------|--------|-----------------|
| SiO <sub>2</sub>               | %    | 99.91  | --              |
| Al <sub>2</sub> O <sub>3</sub> | %    | 0.0093 | 0.12            |
| Fe <sub>2</sub> O <sub>3</sub> | %    | 0.0041 | -               |
| Na <sub>2</sub> O              | %    | 0.0022 | -               |
| K <sub>2</sub> O               | %    | 0.0022 | -               |
| CaO                            | %    | 0.0024 | -               |
| C                              | %    | 0.0084 | -               |
| Quartz-SiO <sub>2</sub>        | %    | <0.1   | -               |
| Cristobalite-SiO <sub>2</sub>  | %    | <0.1   | -               |
| Amorphous matter               | %    | >99    | -               |

### Grade B (SGS Report: MSRGZ2101620-01C)

| Item                           | Unit | Result |
|--------------------------------|------|--------|
| SiO <sub>2</sub>               | %    | 99.88  |
| Al <sub>2</sub> O <sub>3</sub> | %    | 0.041  |
| Fe <sub>2</sub> O <sub>3</sub> | %    | 0.0060 |
| Na <sub>2</sub> O              | %    | 0.0029 |
| K <sub>2</sub> O               | %    | 0.012  |
| CaO                            | %    | 0.0050 |
| C                              | %    | 0.022  |
| Quartz-SiO <sub>2</sub>        | %    | <0.1   |
| Cristobalite-SiO <sub>2</sub>  | %    | <0.1   |
| Amorphous matter               | %    | >99    |

### Grade C (SGS Report: MSRGZ2101378-01A)

| Item                           | Unit | Result |
|--------------------------------|------|--------|
| SiO <sub>2</sub>               | %    | 99.79  |
| Al <sub>2</sub> O <sub>3</sub> | %    | 0.047  |
| Fe <sub>2</sub> O <sub>3</sub> | %    | 0.044  |
| Na <sub>2</sub> O              | %    | 0.011  |
| K <sub>2</sub> O               | %    | 0.011  |
| C                              | %    | 0.007  |
| Quartz-SiO <sub>2</sub>        | %    | <1     |
| Cristobalite-SiO <sub>2</sub>  | %    | 2      |
| Amorphous matter               | %    | 97     |

## Grade C (SGS Report: MSRGZ2101620-01D)

| Item                           | Unit | Result |
|--------------------------------|------|--------|
| SiO <sub>2</sub>               | %    | 99.31  |
| Al <sub>2</sub> O <sub>3</sub> | %    | 0.27   |
| Fe <sub>2</sub> O <sub>3</sub> | %    | 0.096  |
| Na <sub>2</sub> O              | %    | 0.012  |
| K <sub>2</sub> O               | %    | 0.066  |
| CaO                            | %    | 0.024  |
| C                              | %    | 0.035  |
| Quartz-SiO <sub>2</sub>        | %    | 0.5    |
| Cristobalite-SiO <sub>2</sub>  | %    | 15.3   |
| Amorphous matter               | %    | 84.2   |

## Available Sizes

- Granules: 0-0.5mm,0.5-1mm,0-1 mm, 1-3 mm, 3-5 mm,5-8mm
- Mesh sizes: 4-10mesh, 10-20mesh, 30-50mesh, 50-100mesh, 120mesh, 200mesh, 325mesh, 400mesh, 600mesh (others on request)
- Laser Particle Size:D50:2-4microns,4-6microns,6-8microns,8-10microns,10-12microns,12-14microns,14-16microns,16-18microns,18-20microns.20-23microns.(others on request)

## Packaging

- 25 kg paper bag or plastic woven bag, palletized
- 1.0-1.2 MT big bag
- Other packaging options available on request

Disclaimer: The data above are typical values and/or representative test results. They do not constitute a guarantee of properties. Please contact us for specification confirmation for your intended application.