

SQ Fused Silica

Ultrapure Synthetic Fused Silica



Your advantages

- Product versatility (includes rods, discs, plates, blocks, prisms) due to manufacturing technology used
- Fused Silica free of inclusions and bubbles, for laser and optical applications
- Extremely low fluorescence and excellent laser stability due to its high OH and H₂ content
- Available with documented optical properties
 - High homogeneity
 - Low stress birefringence
 - High transmission @193 nm and @248 nm

With SQ Fused Silica j-plasma provides advanced industries with inclusion and bubble free material. Our registered trademark SQ (Synthetic Quartz) stands for Fused Silica showing best laser durability, refractive index homogeneity as well as stability under thermal conditions and stress.

SQ Fused Silica is being offered in five qualities (3 grades and 2 subgrades) regarding its level of homogeneity and striation to serve high-end, mid and standard technical use in optical elements such as prisms, lenses, wafers or displays.

SQ supports the design and make of specialty applications preforms as well as the parameter controlled drawing of high-performance optical fibers for use in advanced specialty and photonic devices.

The fused, cooled, and ground Fused Silica ingots are classified into various quality grades according to acknowledged measurement and selection procedures, and can be supplied in accordance with individual customer requirements. This means the Fused Silica can be deployed across an optical application spectrum from DUV to NIR.



Subject to technical changes without notice.
® j-plasma GmbH

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Fields of use

- Excimer laser optics and beam guiding systems
- DUV and UV optical components
- Optical material in line beam systems used in OLED manufacturing
- UV rods, preforms and optical fibers
- Laser fusion
- For Fused Silica vessels and windows in technical applications
- Lithography and microlithography applications: stepper lenses, photo mask blanks, wafers and lithography optics



Product portfolio

Quality grades

- **SQ0** is characterized by its high three-dimensional optical homogeneity. Free of striations in any functional direction, it is recommended for high-end resolution requirements in optical elements such as prisms and lenses.
- **SQ1** exhibits high homogeneity and has no striations in the functional direction. Typical applications are optical elements such as lenses, windows, wafers, and optical fibers.
- **SQT** is not specified concerning homogeneity, striae and striations. This grade is recommended for technical applications.
- **Excimer-grade Fused Silica** – available as
SQ1 or SQ0: excellent transmission at 193 nm / 248 nm.
Lowest level of laser-induced fluorescence (LIF)
– SQ0-E193/SQ1-E193 (ArF excimer-grade)
– SQ0-E248/SQ1-E248 (KrF excimer-grade)

Geometries

- Parts of ingots
- Blocks
- Semi-finished products (disk, plates, prism, wafer, rectangular rods)
- Rods

Product properties

Virtually free of inclusions and bubbles, the material features an outstanding set of optical and physical properties:

- Laser durability
- Refractive index homogeneity
- Thermal stability and temperature shock resistance
- Low stress birefringence
- Low thermal expansion coefficients

Due to its high OH and H₂ content, our Fused Silica exhibits extremely low fluorescence and excellent stability under high-energy UV and laser radiation.

Ordering options

- Various geometries
- 5 quality grades
- Surface quality / finishing