

Optical Materials

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Using natural and synthetic quartz as a base, we have developed a wide array of optical materials such as synthetic quartz preform for optical communication and various optical parts. We also supply a wide range of products from raw materials to finished products.

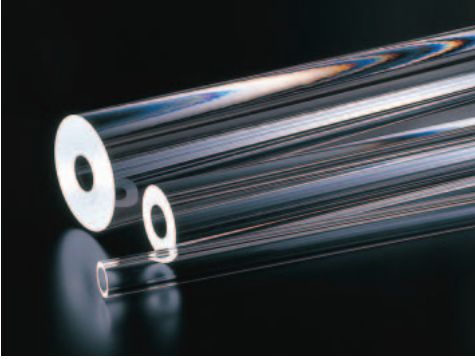


Synthetic quartz preform for optical fibers



Synthetic quartz preform is one of the product groups of Shin-Etsu Chemical that specializes in silicon chemical business. It is a rod based on synthetic quartz of high purity. The inner structure is designed so precisely that any incident light passes through without attenuation. Shin-Etsu Chemical has built a new factory in Kashima, Ibaraki Prefecture, which started operation in October 2001. The production capacity has since doubled, further establishing a system of stable supply.

- Features
- The high-level and complex production process is backed by highly reliable quality control and computer technology, ensuring a stable and high quality.
 - We were the first company to produce large-size preforms, and established mass production technology for preforms 160 mm ϕ in diameter \times 1,500 mm in length.
- Applications
- Fibers for optical communication, image guides, and laser transmission



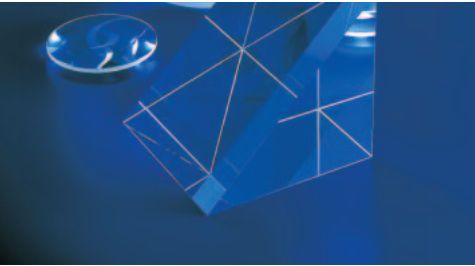
Transparent quartz glass for fiber optics

 For inquiry 19

Shin-Etsu Quartz Products Co., Ltd. has been constantly providing quartz glass tubes for use in the preform manufacturing process since the beginning of research on fiber optics.

- Features
- The production process adopts our unique tool-free method. The inner and outer surfaces of the tubes are perfectly smooth with no defect.
 - Suprasil-F300 is a synthetic quartz material of ultra-high purity and high quality, and is used in optical fibers.

Applications ● Wide-band long-distance transmission communication cables



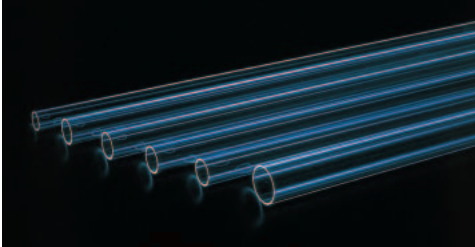
Synthetic quartz glass for optics

 For inquiry 19

Production technology of optical quartz glass introduced from Heraeus Quarzglas GmbH, Germany together with the excellent synthetic technology of Shin-Etsu Group are the base of development of this synthetic optical quartz glass.

- Features
- Unlike natural quartz glass, this product has no granular structure and does not emit fluorescence under a 253.7 nm mercury lamp.
 - Various grades are available depending on the presence or absence of striae, light transmittance, and laser-proof property.

Applications ● Lens materials for excimer laser steppers
● Spectrum prism, lens, windows, mirror for laser, etc.



Transparent quartz glass for lamps

 For inquiry 19

The transparent quartz glass is produced by our unique tool-free method. The inner and outer surfaces of the tubes are perfectly smooth with no defect.

- Lineup
- M series of ozoneless type
 - HERALUX series of natural quartz glass
 - SUPRASIL-F series of synthetic quartz glass which has excellent transmittance ranging from vacuum ultraviolet to infrared

Applications ● UV lamp materials etc.



Optical fiber coatings

For inquiry 6

The coating prevents the additional loss of optical information that travels through the optical fiber (quartz glass) by constant reflection caused by microbending. Thus, the coating improves transmission characteristics and also protects the optical fibers against mechanical stress such as lateral pressure applied to the optical fiber.

Features

- Liquid silicone rubber is the raw material, which is highly resistant to heat and cold and shows stable performance over a wide range of temperatures.

Lineup

- For primaries, for buffers, for polymer clads
- Two types of curing methods are available; heat curing type and UV curing type suitable for high-speed drawing.



Highly transparent coating for optical networks

For inquiry 6

The Opticlear series are developed by the original technologies of Shin-Etsu Chemical. They are used to protect and coat various parts or modules in optical networks, and also as a highly transparent and refractive material for use in optical waveguide.

Features

- It has excellent transparency and heat resistance.
- Refraction index can be adjusted over a wide range with high precision.

Applications

- For refraction index matching, protection, and coating of optical joints
- As waveguide materials for optical devices



Optical isolators

For inquiry 13

The optical isolators are highly reliable optical passive parts, the key components of which are manufactured by Shin-Etsu Chemical. Used in laser modules that forms the light source of optical communication and in joints of optical fibers, they support stable high-speed communication.

Features

- They take pride in compactness and high reliability.
- The Faraday Rotators developed by Shin-Etsu Chemical's oxide single crystal growing technology is used.
- Shin-Etsu Chemical's Sm-Co magnet is used.
- Isolators for 1.31 μm , 1.48 μm and 1.55 μm are included in the lineup. Single type and double type are available.

Applications

- They are incorporated in DFB laser modules used in optical fiber networks (relay system, CATV), and cut the reflected light.

For More Information

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5	Electronics Materials Division Magnet Dept.	+81-3-3246-5246	http://www.shinetsu-rare-earth-magnet.jp/
6	Electronics Materials Division Organic Electronics Materials Dept.	+81-3-3246-5231	
7	Advanced Materials Division Opto-Electronics Materials Dept.	+81-3-3246-5222	
8	Semiconductor Materials Division	+81-3-3217-1300	
9	Organic Chemicals Division Cellulose & Pharmaceutical Excipients Dept.	+81-3-3246-5261	http://www.metolose.jp/
10	PVC Division Chlor, Alkali & Derivatives Dept.	+81-3-3246-5081	
11	International Division	+81-3-3246-5311	http://www.shinetsu-fcl.jp/
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