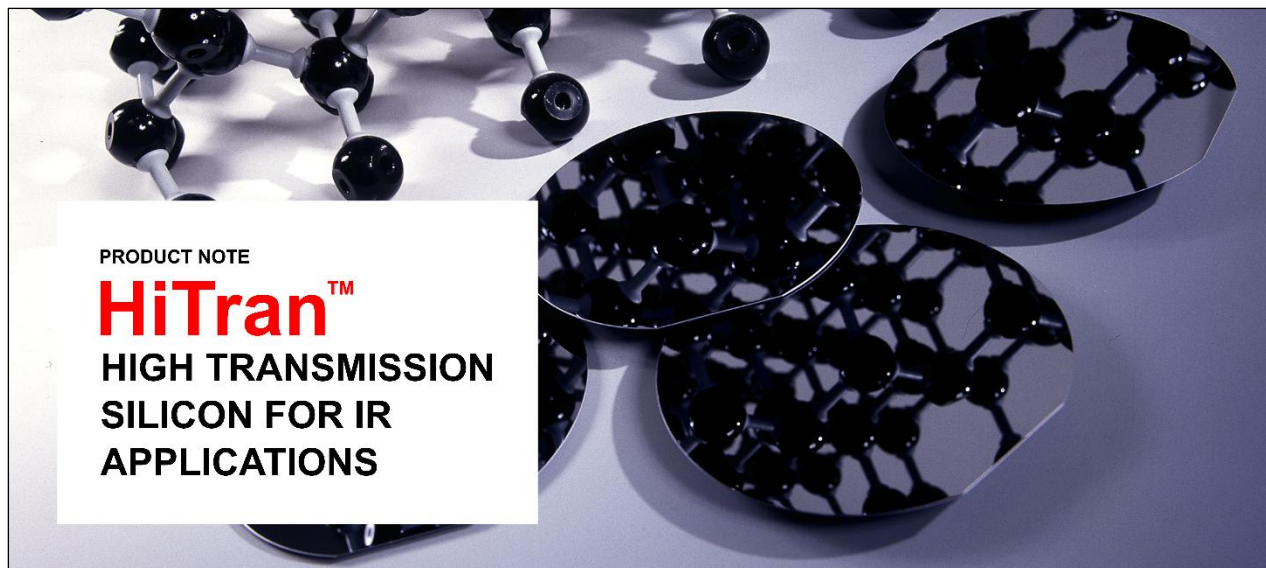




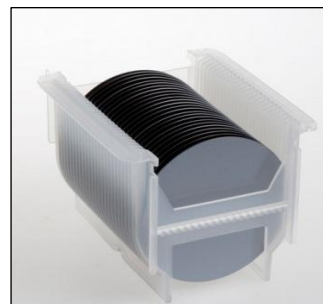
Material solutions for high-quality components and instrumentation

Topsil is the world leading supplier of high purity, high transmission silicon (HiTran™) for a number of infrared (IR) applications.

HiTran™ silicon has unique transmission performance across most of the infrared band including the far infrared region. The purity of HiTran™ silicon eliminates all impurity related absorptions over the whole band. Intrinsic lattice vibrations in silicon reduce the transmission of infrared light of thick HiTran™ silicon in the wavelength band from 7-16 μm , but in many cases HiTran™ silicon can replace other infrared materials, even in the 8-12 μm region.

In addition the superior mechanical and environmental performance of HiTran™ silicon in comparison with other infrared materials makes it a perfect choice not only in the 3-5 μm band where it is unsurpassed by any infrared material, but also by control of the silicon resistivity in the far infrared region starting at 20 μm , including the THz range. For a range of applications, HiTran™ silicon has the potential to replace germanium (see our HiTran™ Application Note for more detail).

High transmission components are key elements of any IR instrument. High transmission is essential to keeping signal-to-noise ratios at acceptable levels and is moreover essential building blocks of different wavelength selective devices. Topsil offers products with the highest purity and thus the best transmission properties at IR wavelengths above 1.2 μm . This combined with more than half a century's experience in the production of float zone material and state-of-the-art manufacturing equipment makes Topsil HiTran™ silicon an excellent choice for IR components and instrumentation.



Typical IR applications that will benefit from using HiTran™ silicon are:

- Thermal Imaging Systems
- Silicon Prisms, Gratings, Grisms, Lenses and Blanks
- Silicon Fresnel Lenses
- Passive Infrared Detector Filters
- Transmission windows for debris protection
- Micromachined IR devices

CONTACT
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Topsil offers Float Zone HiTran™ material with the listed parameters. Other parameters are available upon request.

Growth method	Monocrystalline Float Zone, HiTran™ Czochralski silicon (Optical grade) Polycrystalline silicon also available
Crystalline form	<100>, <111> ±1°
Transmission	>50% (30-10,000 μm) 20-50% (6.7-13 μm)* <50% (1-6.7 μm)
Diameter	≤200 mm
Length	<600 mm
Shapes	Ingot, Spheres, Flat, Wedges, Bullets, Blanks
Surface Finishes	Application specific

*Dependent on sample thickness. Present example is 2 mm thick polished slices.

Topsil GlobalWafers A/S

Topsil is a world leading supplier of ultrapure silicon for the global semiconductor industry. Engaging in long term relations with customers, Topsil focuses on premium quality, an efficient production process and a safe delivery of products.

Float-Zone FZ silicon is the high-purity alternative to crystals grown by the Czochralski CZ method. Based on extensive knowledge, expertise and significant investments in new technology, facilities and equipment, Topsil FZ silicon products are ideal for the most demanding purposes in conversion and control of electrical power.

Topsil was founded in 1959. Situated near Copenhagen, Denmark, Topsil is part of the GlobalWafers Group with manufacturing presence in Europe, Asia and the US.

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