

Germanium Windows - Origin, Application and Customization

San Jose, California May 25, 2022 ([Issuewire.com](https://www.issuewire.com)) - Germanium (Ge) is a chemical element. It is a silvery-grey-white and highly brittle metalloid, with a diamond-like crystalline structure. Its chemical and physical properties make it very similar to silicon. Wintcorp.com is a premium provider of Germanium windows and wants to shed light on the use and origin of Germanium windows. Wintcorp.com is a premium manufacturer of Germanium Windows with years of experience in providing the highest quality optical glass.

Origin

Clemens Winkler (1838–1904), a German chemist, was the first to discover germanium in 1886. Winkler was working at the Freiberg University of Mining and Technology when a colleague urged him to investigate an intriguing new mineral discovered in a neighboring mine.

Winkler's initial research revealed the mineral's composition to be 75% silver and 18% sulphur, but he couldn't pinpoint the remaining 7%. He eventually discovered he was dealing with a new metal-like element, correctly identifying it as the element following silicon in the periodic table. After the Latin term for Germany, 'Germania,' Winkler named the new element 'germanium.' The diode, one of the most basic electronic components, was initially replaced by germanium on a massive scale.

What distinguishes a Germanium Window?

An optical window made of germanium is opaque to UV and visible light but has a wide transmission range in the infrared. Because of its high index of refraction (4.0 from 2 to 14μm), it has minimal chromatic aberration and we recommend using an anti-reflection coating.

Around 30% of the world's total germanium supply currently comes from recycled sources.

Application

Apart from a few specialized applications in electronics, germanium is now mostly employed in the optics industry due to its characteristics, which make it suitable for optical systems including lasers, objective lenses for microscopes and other scientific instruments, and wide-angle photographic lenses.

New applications for germanium are emerging in telecommunications and electronics, driving increased demand and fueling a push for germanium recycling. It is extremely heat sensitive, becoming almost entirely opaque at 100 degrees Celsius.

Custom Germanium Windows

Germanium windows can be manufactured in a variety of shapes, including circular, square, rectangular, and unique shapes. Surface flatness, scratch-dig, and parallelism can all be subjected to stringent requirements.

High-efficiency broadband anti-reflection coatings, diamond-like carbon (DLC) coatings, high-durability AR coatings (HDAR), and IR bandpass filter coatings are all available from WintCorp. High hardness,

corrosion resistance, wear, and abrasion resistance is all advantages of DLC and HDAR coatings.

A Germanium window typically has a high-efficiency broadband anti-reflection coating on one side and a diamond-like carbon DLC coating on the other. DLC-coated germanium windows are frequently used to protect infrared lenses from the elements.

To find out more about Germanium Windows from WintCorp, call us at (408) 816-4818 or email us at sales@wintcorp.com

Media Contact

WintCorp

sales@wintcorp.com

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