

## Hafnium Oxide Nanoparticle (HfO<sub>2</sub>, 99.99%, high purity, 61-80nm, Cubic)

Stock #: US3245

Please click [here](#) for price information.

### Details:

Hafnium Oxide (HfO<sub>2</sub>)

Crystal: Cubic

Color: white

Purity: 99.99% (REO)

APS: 61-80 nm

Morphology: nearly spherical

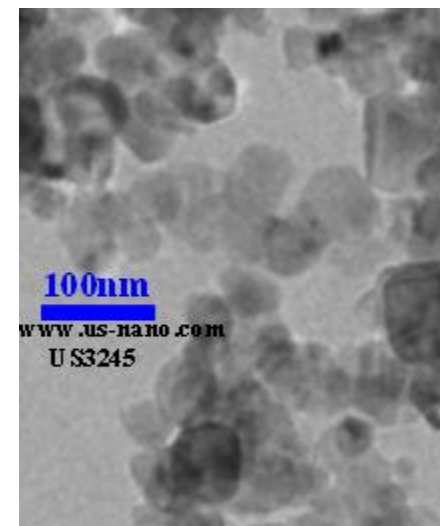
Refractive index: 2

Melting point (°C): 2812

Transparent band (um): 0.2-9

Density (g/cm<sup>3</sup>): 9.7

CAS: 12055-23-1



[LS Particle Size Analyzer](#)  
[HfO<sub>2</sub>-XRD](#)  
[MSDS](#)

### Certificate of Analysis - ppm

Fe	Ni	Mn	Ti	Cu	Cr	Al	Mg
12	9	1	10	5	<5	<10	15

### Applications

Hafnium oxide (HfO<sub>2</sub>) is a kind of wide band gap and high dielectric constant of ceramic materials. Hafnia is used in optical coatings, and as a high-k dielectric in DRAM capacitors, future integrated circuits, as a refractory material....Hafnium oxide (HfO<sub>2</sub>) has been extensively studied as a potential alternative to silicon dioxide due to its high dielectric constant and relatively high thermal stability with respect to a silicon surface. Hafnium (IV) oxide is the inorganic compound with the formula HfO<sub>2</sub>. Also known as hafnia, this colourless solid is one of the most common and stable compounds of hafnium. It is an electrical insulator with a band gap of approximately 6 eV. Hafnium dioxide is an intermediate in some processes that give hafnium metal. Hafnium (IV) oxide is quite inert. It reacts with strong acids such as concentrated sulfuric acid and with strong bases. It dissolves slowly in hydrofluoric acid to give fluorohafnate anions. At elevated temperatures, it reacts with chlorine in the presence of graphite or carbon tetrachloride to give hafnium tetrachloride.

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