

Global Hafnium Dioxide Market 2025 by Manufacturers, Regions, Type and Application, Forecast to 2031

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Abstracts

According to our (Global Info Research) latest study, the global Hafnium Dioxide market size was valued at US\$ 85.8 million in 2024 and is forecast to a readjusted size of USD 122 million by 2031 with a CAGR of 5.2% during review period.

Hafnium dioxide (HfO_2) is an oxide of hafnium element, which is a white solid at room temperature and pressure. White powder, with three crystal structures: monoclinic, tetragonal, and cubic, with a melting point of 2780-2920K. Boiling point 5400K. The coefficient of thermal expansion is $5.8 \times 10^{-6}/^\circ\text{C}$. Insoluble in water, hydrochloric acid, and nitric acid, soluble in concentrated sulfuric acid and hydrofluoric acid. Produced by thermal decomposition or hydrolysis of compounds such as hafnium sulfate and hafnium oxychloride. To produce raw materials for hafnium metal and hafnium alloys. Used as refractory materials, anti radioactive coatings, and catalysts. Hafnium dioxide (HfO_2) is a ceramic material with a wide bandgap and high dielectric constant, which has recently attracted high attention in the industry, especially in the field of microelectronics. Due to its potential to replace the gate insulating layer silicon dioxide (SiO_2) of the core device metal oxide semiconductor field-effect transistor (MOSFET) in silicon-based integrated circuits, it can solve the size problem in the development of traditional SiO_2/Si structures in MOSFETs.

Hafnium dioxide is widely used as a high-k dielectric material in advanced semiconductor manufacturing. Increasing demand for smaller and more powerful chips, particularly in AI, 5G, and quantum computing, is driving growth. Companies like TSMC, Intel, and Samsung are integrating HfO_2 into next-generation transistor technologies. Hafnium-based control rods play a crucial role in regulating nuclear reactors due to their neutron absorption properties. As nuclear energy regains popularity

as a clean energy source, demand for hafnium dioxide is expected to rise.

This report is a detailed and comprehensive analysis for global Hafnium Dioxide market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2025, are provided.

Key Features:

Global Hafnium Dioxide market size and forecasts, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2020-2031

Global Hafnium Dioxide market size and forecasts by region and country, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2020-2031

Global Hafnium Dioxide market size and forecasts, by Type and by Application, in consumption value (\$ Million), sales quantity (Tons), and average selling prices (US\$/kg), 2020-2031

Global Hafnium Dioxide market shares of main players, shipments in revenue (\$ Million), sales quantity (Tons), and ASP (US\$/kg), 2020-2025

The Primary Objectives in This Report Are:

- To determine the size of the total market opportunity of global and key countries
- To assess the growth potential for Hafnium Dioxide
- To forecast future growth in each product and end-use market
- To assess competitive factors affecting the marketplace

This report profiles key players in the global Hafnium Dioxide market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include ATI, Framatome, China Nulear JingHuan Zirconium Industry, Nanjing Youtian Metal Technology, Chepetsky Mechanical Plant, LTS Research Laboratories, Australian Strategic Materials (ASM), LB Group, JP Tech,

State Nuclear BaoTi Zirconium Industry, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Market Segmentation

Hafnium Dioxide market is split by Type and by Application. For the period 2020-2031, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Purity

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