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Global High-K Metal Precursors Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global High-K Metal Precursors market size is expected to reach $ 931 million by 2032, rising at a market growth of 6.1% CAGR during the forecast period (2026-2032).

High-k metal precursors are organometallic or inorganic metal compounds used to fabricate high-dielectric-constant (high-k) metal oxide, metal nitride, or metal silicate thin films; they serve as critical precursor materials in semiconductor thin-film deposition processes. Typically acting as metal sources in Chemical Vapor Deposition (CVD), Plasma-Enhanced Chemical Vapor Deposition (PECVD), or Atomic Layer Deposition (ALD) processes, these materials form ultrathin functional layers with high dielectric properties on wafer surfaces through vapor-phase transport and surface reactions. In 2025, the global sales volume of high-k metal precursors reached 304 tons, with a production capacity of approximately 400 tons; the average selling price was $1,970 per kilogram, and the average gross profit margin ranged from 40% to 50%.

The upstream segment of the industry chain primarily comprises suppliers of metal resources, organic ligands, and basic chemical raw materials. This includes raw materials such as metal compounds (hafnium, zirconium, aluminum, lanthanum, titanium, etc.) and organic ligands (alcohols, amines, ?-diketones, etc.) that provide the foundational inputs for precursor synthesis. The midstream segment consists of manufacturers of high-k metal precursor materials responsible for the design, synthesis, precision purification, packaging, filling, and quality testing of these compounds. Their products?including hafnium-based, zirconium-based, and aluminum-based precursors?are utilized in ALD and CVD thin-film deposition processes. The downstream segment primarily involves semiconductor wafer manufacturers and advanced chip production facilities.

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The restructuring of the global semiconductor supply chain and intensifying competition in advanced manufacturing have continuously elevated the importance of critical electronic materials. The United States, Europe, Japan, and South Korea are all leveraging industry support policies to build advanced manufacturing capabilities and secure supply chains for critical materials. In recent years, China has consistently promoted the localization of semiconductor materials, prioritizing breakthroughs in high-purity electronic chemicals, advanced thin-film materials, and semiconductor precursors, while encouraging domestic enterprises to increase R&D investment and accelerate industrialization. Meanwhile, the ongoing expansion of advanced-node production lines at global wafer fabs is driving an increase in ALD equipment installations, further boosting market demand for high-k metal precursors.

This report studies the global High-K Metal Precursors production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for High-K Metal Precursors and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of High-K Metal Precursors that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global High-K Metal Precursors total production and demand, 2021-2032, (Tons)
Global High-K Metal Precursors total production value, 2021-2032, (USD Million)
Global High-K Metal Precursors production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Tons), (based on production site)
Global High-K Metal Precursors consumption by region & country, CAGR, 2021-2032 & (Tons)
U.S. VS China: High-K Metal Precursors domestic production, consumption, key domestic manufacturers and share
Global High-K Metal Precursors production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Tons)
Global High-K Metal Precursors production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Tons)
Global High-K Metal Precursors production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Tons)

This report profiles key players in the global High-K Metal Precursors market based on

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the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Air Liquide, DNF, Nanmat Technology, Entegris, UP Chemical, Soulbrain, Hansol Chemical, SK Materials, Gelest, Merck KGaA, etc.

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

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World High-K Metal Precursors market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Tons) and average price (US$/kg) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global High-K Metal Precursors Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global High-K Metal Precursors Market, Segmentation by Type:

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Hafnium Precursors

Zirconium Precursors

Aluminum Precursors

Titanium Precursors

Lanthanum Precursors

Tantalum Precursors

Others

Global High-K Metal Precursors Market, Segmentation by Deposition Process:

ALD Precursors

CVD Precursors

Others

Global High-K Metal Precursors Market, Segmentation by Dielectric Properties:

8?15 K

15?30 K

?30 K

Global High-K Metal Precursors Market, Segmentation by Application:

Logic Chips

Memory Chips

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Others

Companies Profiled:

Air Liquide

DNF

Nanmat Technology

Entegris

UP Chemical

Soulbrain

Hansol Chemical

SK Materials

Gelest

Merck KGaA

Yoke Technology

Hefei Andekeming

Nata Opto-electronic

Zenfan Technology

Anhui Botai

Key Questions Answered:
1. How big is the global High-K Metal Precursors market?
2. What is the demand of the global High-K Metal Precursors market?

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3. What is the year over year growth of the global High-K Metal Precursors market?
4. What is the production and production value of the global High-K Metal Precursors market?
5. Who are the key producers in the global High-K Metal Precursors market?
6. What are the growth factors driving the market demand?

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