

# Zirconium Market Segment by Applications, Manufacturers, Regions and Forecast to 2032

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/EINPresswire.com/ -- The global [zirconium market](#), valued at USD 1.73 billion in 2022, is projected to grow at a rapid (CAGR) of 7.2% over the forecast period. This robust growth is driven by rising demand in the nuclear power industry, increased use in ceramics and refractories, and the broader effects of industrialization, rising disposable incomes, and urbanization.



## Zirconium Market Demand and Applications

Zirconium, a silver-grey transition metal, is commonly found in volcanic and plutonic rocks. Commercially, it is derived from minerals like zirconium dioxide and zircon, which are infused with silica, rutile, and ilmenite. Known for its high malleability, resistance to corrosion, and ability to form stable compounds, zirconium is widely used in various industries. It finds applications in manufacturing pipes, plumbing fittings, heat exchangers, steel alloys, colored glazes, bricks, ceramics, abrasives, lamp filaments, and artificial gemstones.

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The nuclear power industry significantly contributes to zirconium demand, utilizing it for cladding in fuel rods due to its structural strength and low neutron absorption properties. Zirconium alloys are also employed in making rayon spinnerets, surgical instruments, and modern porcelain tiles, owing to their low thermal expansion and excellent binding properties.

## Key Market Drivers

The healthcare sector is increasingly adopting zirconium, which is expected to drive market growth. For example, Dentsply Sirona introduced Cerec MTL Zirconia in October 2021, an enhanced zirconium oxide suitable for bridges, crowns, inlays, onlays, and veneers due to its natural aesthetics and strength.

The ceramics industry also heavily relies on zirconium for its exceptional heat resistance and mechanical strength. Zirconium dioxide (zirconia) is used in high-performance refractories, abrasives, and glazes across construction, electronics, and aerospace industries. As construction activities rise, particularly in emerging economies, and demand for advanced electronic components grows, zirconium's presence in the ceramics industry is expected to increase further.

### Market Restraints

Despite its promising growth, the zirconium market faces challenges. Strict regulations, reducing dependency on zircon, availability of alternatives in the ceramic industry, and high tariffs could restrain market growth. Additionally, fluctuations in raw material prices pose a significant challenge.

### Zirconium Top Companies and Competitive Landscape

The global zirconium market is fragmented, with large and medium-sized players accounting for the majority of market revenue. Major players are deploying various strategies, entering into mergers & acquisitions, strategic agreements & contracts, developing, testing, and introducing more effective zirconium products in the market.

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Some of the major companies included in the global zirconium market report are:

ATI Inc.

Astron Group.

Alkane Resources Ltd.

Base Resources.

Doral Mineral Sands Pty Ltd.

Iluka Resources Limited

Kenmare Resources plc.

Rio Tinto

Saint-Gobain

Tosoh

Tronox Holdings plc

Exxaro.

The Chemours Company.

Southern Ionics Incorporated

Zirconet Limited

Murray Ziron

Luxfer MEL Technologies

Xiamen Mascera Technology Co., Ltd.

Australian Strategic Materials Ltd.

DuPont.

## Zirconium Latest Industry News

In December 2021, ARTMS Inc., the US-based commercial nuclear pharmacy (ARTMS), announced that zirconium-89 ( $^{89}\text{Zr}$ ) oxalate is being produced with a low energy medical cyclotron. After exposing the ARTMS yttrium-89 solid target to low activity radiation for 60 minutes, production yielded over 40 millicuries of  $^{89}\text{Zr}$ . The QUANTM Irradiation System (QISTM) from ARTMS enables commercial nuclear pharmacies to manufacture  $^{89}\text{Zr}$  locally, reducing dependency on isotopes produced centrally.

On 15 October, 2020, Advanced Metallurgical Solutions (ASM) achieved a significant milestone by manufacturing 8.6 kg of high-purity zirconium metal powder in Korea. This zirconium powder is of high grade, with an assay of 98% zirconium and 1.5% hafnium. Significantly, it fulfilled the Korean Atomic Energy Research Institute's stringent standards, signifying its suitability for use in wide range of applications, including those within the nuclear industry.

## Market Segmentation Insights

### Occurrence Type

**Zircon:** The largest segment due to its hardness and durability, essential for manufacturing ceramics and refractory tiles, as well as high-tech applications like heat shields in space shuttles and solid oxide fuel cells.

**Zirconia:** Expected to grow moderately, driven by new product launches. Zirconia, known for its mechanical qualities and stability, is used in various refractory materials, ceramic colors, and pigments.

### Form

**Powder:** Expected to dominate due to its free-flowing nature, ease of handling, and adaptability across industries like pharmaceuticals, food processing, and cosmetics. Developments in sustainable production and new processing techniques are driving growth in this segment.

**Crystal:** Anticipated to grow steadily. High-purity zirconium crystal bars are used in manufacturing special alloys and materials, as well as in high purity zirconium sputtering targets.

### End-Use

Ceramics Industry: Expected to lead the market due to ceramics' ability to withstand high temperatures, chemical corrosion, and mechanical stress. The eco-friendliness and biocompatibility of ceramics make them ideal for construction and medical applications.

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## Zirconium Market Segment Analysis

For the purpose of this report, Emergen Research has segmented the global zirconium market on the basis of product type, forms, occurrence type, process, application, end-use, and region:

### Product Type Outlook (Revenue, USD Billion; 2019-2032)

Industrial Zirconium Oxide

Ultrafine Zirconium Oxide

Others

### Forms Outlook (Revenue, USD Billion; 2019-2032)

Crystal

Powder

### Occurrence Type Outlook (Revenue, USD Billion; 2019-2032)

Zircon

Zirconia

Others

### Process Outlook (Revenue, USD Billion; 2019-2032)

Hydrothermal Method

Precipitation Method

### Application Type Outlook (Revenue, USD Billion; 2019-2032)

Nuclear Grade

Industrial Grade

Firearm Grade

### End-use Outlook (Revenue, USD Billion; 2019-2032)

Nuclear Industry

Ceramics Industry

Chemical Industry

Foundry Industry

Electronics Industry

Aerospace Industry

Medical Industry  
Refractory Industry  
Glass Industry  
Others

Regional Outlook (Revenue, USD Billion; 2019–2032)

North America

U.S.

Canada

Mexico

Europe

Germany

France

UK

Italy

Spain

Benelux

Rest of Europe

Asia Pacific

China

India

Japan

South Korea

Rest of APAC

Latin America

Brazil

Rest of LATAM

Middle East & Africa

Saudi Arabia

UAE

South Africa

Turkey

Rest of Middle East & Africa

The global zirconium market is on a promising growth trajectory, driven by its diverse applications across multiple industries. With significant developments in the healthcare and ceramics sectors, the market is set to expand rapidly, despite facing regulatory and price fluctuation challenges. As industrialization and technological advancements continue, the demand for zirconium is expected to rise, further solidifying its importance in the global market.

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