

# Ruthenium Market Leading Growth Drivers, Regional Analysis, and Industry Insights

*Rising product demand from the electronics industry due to customer preferences, growing adoption of ruthenium as a catalyst*

VANCOUVER, BRITISH COLUMBIA, CANADA, June 6, 2024 /EINPresswire.com/ -- The global [ruthenium market](#) size was USD 572.4 Million in 2022 and is expected to register a revenue CAGR of 4.7% during the forecast period. The global ruthenium market is poised for substantial growth, propelled by rising demand from the electronics industry, increased adoption in electrochemical applications, and expanding use in medical devices, particularly Magnetic Resonance Imaging (MRI) machines.

Ruthenium, one of the rarest metals on Earth, is gaining popularity in various high-tech industries due to its exceptional properties. It plays a crucial role in electrical energy, chemical catalysis, aerospace, radiotherapy, and more.

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## Key Market Drivers

The surge in consumer electronics sales has significantly boosted ruthenium demand. In recent years, global sales of consumer electronics, including computers, TVs, and smartphones, reached USD 880 billion. This trend is expected to continue as consumer preferences evolve, particularly in household appliances.

Ruthenium's unique hardness and durability make it indispensable in manufacturing electrical components. This has led to a substantial increase in orders and sales volumes for ruthenium manufacturers. For instance, Heraeus Precious Metals announced on May 16, 2023, a USD 38



million investment to expand its recycling capabilities in Germany, creating over 20 new jobs and strengthening its market position.

## Market Restraints

Despite its growing demand, the ruthenium market faces challenges such as volatile production costs and health risks. As one of the rarest metals, ruthenium's price fluctuates with availability. Its complex manufacturing process involves high operational expenses due to the need for specialized equipment, skilled labor, and stringent quality control measures. Additionally, ruthenium's toxicity at high levels poses health risks, prompting some potential buyers to seek cost-effective alternatives.

## Market Segmentation Insights

### Ruthenium Form:

**Dry/Powder Form Dominance:** In 2022, the dry/powder form segment held the largest market share. Its demand is driven by its use in manufacturing electrical and electronic components, offering improved performance and cost savings. The dry form allows for precise control over chemical processes, resulting in higher purity catalysts, essential for industries like electronics and aerospace.

On June 23, 2022, TANAKA Kikinzoku Kogyo K.K. introduced a two-step film deposition process using liquid ruthenium precursors, enhancing the quality of ruthenium films and offering significant benefits for various applications.

### Distribution:

**Offline Segment Dominance:** The offline segment dominated the market in 2022, catering to industries requiring clear distribution channels for this rare metal. Offline sales ensure quality control and quantity handling, crucial for maintaining product integrity in diverse applications.

The demand for ruthenium in small and medium-sized industries has surged, driving revenue growth in offline sales. Leading manufacturers are investing in research and development to provide tailored products for specific applications.

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### Application:

**Electrical Energy Segment:** This segment is expected to witness rapid growth due to the increasing adoption of solar energy. Ruthenium's versatility and durability enhance the lifespan

and performance of electrical components, making it a preferred material for consumer electronics.

**Chemical Segment:** In 2022, the chemical segment held the largest market share due to the high adoption of ruthenium as a chemical catalyst. Ruthenium catalysts are vital for processes like hydrogenation, isomerization, oxidation, and reduction. Their purity and effectiveness have made them indispensable in chemical production, meeting the industry's high demands.

### Ruthenium Top Companies and Competitive Landscape

The global ruthenium 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 ruthenium.

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

American Elements

OXKEM

Dyesol

Johnson Matthey

Strem

Merck KGaA

Heraeus Group

BASF SE

Apeiron Synthesis

Loba Chemie Pvt. Ltd.

Vineeth Precious Catalysts Pvt. Ltd

Tanaka Holding Co. Ltd.

Kaida Technology Limited

Sinochem Group Co. Ltd

Materion Corporation

Ruthenium Latest Industry News

On 5 October 2022, Heraeus Precious Metals launched a precious metal catalyst development program. This program aims to convert various renewable raw materials such as biomass, CO<sub>2</sub>, or plastic waste into sustainable, value-added chemicals. With the help of a new precious metal catalyst from Heraeus Precious Metals, leftover cellulose from forest products can be used as a raw material for chemicals. New ruthenium-based noble metal catalyst provides the best conditions for efficient DFF formation from 5-HMF for versatile use in bio-based products.

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Ruthenium Market Segment Analysis

For the purpose of this report, Emergen Research has segmented global ruthenium market on the basis of form, distribution, application, end-use, and region:

Form Outlook (Revenue, USD Million, Volume, Kilotons; 2019-2032)

Dry/Powder Form

Liquid Form

Gaseous Form

Distribution Outlook (Revenue, USD Million, Volume, Kilotons; 2019-2032)

Online

Offline

Application Outlook (Revenue, USD Million, Volume, Kilotons; 2019-2032)

Electrical Energy

Chemical Catalyst

Aerospace

Radiotherapy

Others

End-Use Outlook (Revenue, USD Million, Volume, Kilotons; 2019-2032)

Electronics and Electrical

Chemical

Pharmaceutical

Others

Regional Outlook (Revenue, USD Million, Volume, Kilotons; 2019–2032)

North America

U.S.

Canada

Mexico

Europe

Germany

France

U.K.

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 MEA

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