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Global Radioactive Source Market 2026 by Company, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global Radioactive Source market size was valued at US$ 923 million in 2025 and is forecast to a readjusted size of US$ 1273 million by 2032 with a CAGR of 4.8% during review period.

A Radioactive Source is a physical quantity of radioactive material that undergoes spontaneous nuclear decay, emitting ionizing radiation such as alpha particles, beta particles, gamma rays, or neutron radiation. In practical and regulatory contexts, a source is specifically engineered to provide a predictable field of radiation for industrial, medical, or scientific applications. The primary goal of its design is to harness the energy of these emissions while ensuring the radioactive isotope remains contained.

These sources are generally categorized as Sealed Sources or Unsealed Sources. A sealed source is encapsulated within a protective, non-radioactive capsule (often made of stainless steel or titanium) to prevent any direct contact with the radioactive material and to eliminate the risk of environmental contamination. In contrast, unsealed sources are used in more fluid environments, such as radiopharmaceuticals injected into the human body for diagnostic imaging. The potency of a source is defined by its Activity, measured in Becquerels (Bq) or Curies (Ci), which dictates the rate of disintegration and, consequently, the intensity of the radiation field it generates.

A Radioactive Source refers to a material or device that emits ionizing radiation as a result of radioactive decay, serving as a fundamental enabler of nuclear technology applications across industry, healthcare, scientific research, energy, and security sectors. Radioactive sources include both sealed and unsealed forms, and their use spans non-destructive testing, medical diagnosis and therapy, nuclear power operations, irradiation processing, and environmental or security monitoring. As an

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industry segment, the radioactive source market is highly specialized, technology-intensive, and heavily regulated, with its development closely linked to industrialization levels, healthcare infrastructure, and nuclear safety policies worldwide.

From the demand perspective, industrial applications remain one of the most stable pillars of the radioactive source market. In non-destructive testing (NDT), radioactive sources are widely employed to inspect welds, castings, pipelines, and pressure vessels in industries such as oil and gas, petrochemicals, power generation, aerospace, and heavy manufacturing. Their deep penetration capability, consistent radiation output, and ability to operate reliably in harsh or remote environments make them difficult to replace in critical inspection tasks. In addition, radioactive-source-based gauges for density, level, and thickness measurement are extensively used in continuous process control in steel, cement, paper, and chemical industries, supporting automation, quality control, and operational safety.

The medical sector represents a high-value and technologically advanced segment of the radioactive source market. Radioactive sources are integral to radiation therapy, nuclear medicine diagnostics, and brachytherapy, playing a key role in cancer treatment, disease detection, and functional imaging. Although alternative technologies such as linear accelerators and advanced imaging systems have gained prominence, they still rely on stable isotope supply chains and radioactive materials in various forms. With global population aging, increasing cancer incidence, and sustained investment in healthcare systems?particularly in emerging economies?the demand for medical radioactive sources is expected to remain resilient over the long term.

Regulation and supply-side constraints strongly shape the structure of the radioactive source market. International guidelines from the International Atomic Energy Agency (IAEA), along with national regulatory frameworks, impose strict controls over the entire lifecycle of radioactive sources, including production, transportation, licensing, use, storage, recovery, and final disposal. While these regulatory requirements significantly increase compliance costs and limit market entry, they also create strong barriers that protect established suppliers with proven safety records, technical expertise, and comprehensive lifecycle management capabilities. Increasing attention to source tracking, recovery, and end-of-life disposal is pushing the industry toward integrated ?product plus service? business models.

Looking ahead, the radioactive source market is expected to exhibit a combination of structural stability, incremental technological advancement, and enhanced risk management. While some low-risk or routine applications face substitution from non-

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radioactive alternatives such as X-ray or laser-based technologies, radioactive sources retain clear advantages in applications requiring deep penetration, long-term stability, and high reliability. Future competition will increasingly focus on improved safety design, dose accuracy, digital monitoring systems, and regulatory compliance support. Overall, although the Radioactive Source market is not characterized by rapid expansion, it remains a strategically important and indispensable component of the global nuclear technology ecosystem, offering long-term stability and predictable demand across critical application areas.

This report is a detailed and comprehensive analysis for global Radioactive Source market. Both quantitative and qualitative analyses are presented by company, 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 Radioactive Source market size and forecasts, in consumption value ($ Million), 2021-2032

Global Radioactive Source market size and forecasts by region and country, in consumption value ($ Million), 2021-2032

Global Radioactive Source market size and forecasts, by Type and by Application, in consumption value ($ Million), 2021-2032

Global Radioactive Source market shares of main players, in revenue ($ Million), 2021-2026

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 Radioactive Source

To forecast future growth in each product and end-use market

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To assess competitive factors affecting the marketplace

This report profiles key players in the global Radioactive Source market based on the following parameters - company overview, revenue, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include NRG, Rosatom, NTP Radioisotopes, ANSTO, Nordion, IRE, Curium Pharma, Eckert & Ziegler Strahlen, China Isotope & Radiation Corporation (CIRC), Polatom, etc.

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

Market segmentation

Radioactive Source market is split by Type and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for Consumption Value by Type and by Application. This analysis can help you expand your business by targeting qualified niche markets.

Market segment by Type

Mo 99

Co 60

Cs 137

Ir 192

Se 75

Others

Market segment by Sealed

Sealed Source

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Unsealed Source

Market segment by Radiation Emitted

Alpha Source

Beta Source

Market segment by Application

Medical Application

Industrial Application

Scientific Research

Agricultural Application

Others

Market segment by players, this report covers

NRG

Rosatom

NTP Radioisotopes

ANSTO

Nordion

IRE

Curium Pharma

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Eckert & Ziegler Strahlen

China Isotope & Radiation Corporation (CIRC)

Polatom

Board of Radiation and Isotope Technology (BRIT)

DIOXITEK

Market segment by regions, regional analysis covers

North America (United States, Canada and Mexico)

Europe (Germany, France, UK, Russia, Italy and Rest of Europe)

Asia-Pacific (China, Japan, South Korea, India, Southeast Asia and Rest of Asia-Pacific)

South America (Brazil, Rest of South America)

Middle East & Africa (Turkey, Saudi Arabia, UAE, Rest of Middle East & Africa)

The content of the study subjects, includes a total of 13 chapters:

Chapter 1, to describe Radioactive Source product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top players of Radioactive Source, with revenue, gross margin, and global market share of Radioactive Source from 2021 to 2026.

Chapter 3, the Radioactive Source competitive situation, revenue, and global market share of top players are analyzed emphatically by landscape contrast.

Chapter 4 and 5, to segment the market size by Type and by Application, with consumption value and growth rate by Type, by Application, from 2021 to 2032.

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Chapter 6, 7, 8, 9, and 10, to break the market size data at the country level, with revenue and market share for key countries in the world, from 2021 to 2026.and Radioactive Source market forecast, by regions, by Type and by Application, with consumption value, from 2027 to 2032.

Chapter 11, market dynamics, drivers, restraints, trends, Porters Five Forces analysis.

Chapter 12, the key raw materials and key suppliers, and industry chain of Radioactive Source.

Chapter 13, to describe Radioactive Source research findings and conclusion.

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