

Radiation Detection, Monitoring, and Safety - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 131 pages | Mordor Intelligence

AVAILABLE LICENSES:

- Single User License \$4750.00
- Team License (1-7 Users) \$5250.00
- Site License \$6500.00
- Corporate License \$8750.00

Report description:

The Radiation Detection, Monitoring, and Safety Market size is estimated at USD 3.44 billion in 2024, and is expected to reach USD 4.44 billion by 2029, growing at a CAGR of 5.21% during the forecast period (2024-2029).

Radiation monitoring equipment is used to control exposure to radiation or radioactive substances by measuring radiation dose or contamination levels.

Key Highlights

- The market is constantly driven by regulatory requirements and evolving customer needs. The increased use of radioactive materials in areas such as power production, industrial processing, research and processing, and the security sector intensified the need for equipment offering protection against radioactive radiations.
- With multiple regions facing the COVID-19 impact at varying intensities, certain aspects of radiation protection are witnessed to be in demand. One of them is the focus of the power plants to keep up with the increasing electricity demand. The hospitals in need of diagnostic and therapeutic procedures have stated their requirements for radiation monitoring systems. Likewise, the demand for nuclear medicine to be produced and safely transported to pharmacies has remained significant.
- The market is also witnessing the development of new monitoring technology using drones. For instance, in May 2021, a technology that enables drones to be used to carry out radiological measurements was developed by Belgium's Nuclear Research Centre (SCK-CEN) and the Belgian aeronautical firm, Sabca. SCK-CEN and Sabca were awarded EUR 1 million in government funding, and they are investing additional funds into the project by themselves.
- Furthermore, countries spend significantly on the development of nuclear weapons and facilities, which is expected to boost the adoption of radiation detection, monitoring, and safety equipment. According to the Federation of American Scientists, the United States and Russia were among the countries with the maximum number of nuclear weapons as of May 2019. Increased use of

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

radioactive materials across areas, such as diverse industrial processes, power production, and the defense sector, coupled with the heightened global threat of terrorist-operated nuclear weapons, has intensified the need for reliable equipment that offers protection from radioactive radiation.

-The occurrence of incidents, such as the disaster at the Fukushima Dai-Ichi nuclear plant, has emphasized the need for safety, environmental sustainability, and regulatory compliances. Radiation-testing equipment manufacturers need to adhere to all the standards mentioned by the regulatory bodies.

-There is a huge demand for skilled radiation professionals in the radiation monitoring and safety market. However, there has been a lack of personnel due to the high risks associated with the harmful radiation and the lack of proper skills related to the industry.

Radiation Detection Monitoring and Safety Market Trends

Medical and Healthcare Industry has the Largest Market Share

- The medical and healthcare industry accounts for one of the largest market shares, owing to the increasing adoption of dosimeters and detectors in radiology, emergency care, dentistry, nuclear medicine, and therapy applications. Various forms of radiation are used in medical diagnostics and treatment. All forms are potentially dangerous, and exposure must be carefully controlled to ensure that the benefit to patients outweighs the risks from exposure.

- The increasing number of nuclear power facilities across the world is resulting in the increased demand for radiation monitoring equipment. The by-products of these power plants can be used in the healthcare industry. Incidentally, hospitals are promoting the installation of diagnostic radiology equipment, accompanied by using medical isotopes that are administered to patients.

- X-ray diagnostics (general and dental radiography) and therapies, which use radioisotopes in oncology and some other serious diseases, attribute to the primary contribution to the dose absorbed by a person from human-made radiation sources. The upcoming diagnostic and therapeutic methods, based on the use of radioactive elements, are also being adopted.

- Radiation (radioisotope) therapy remains one of the main approaches to fighting cancer. To reduce the negative impact of radiation on the personnel of healthcare facilities, market vendors are offering personal dosimeters and automated systems for personal dosimetry control.

- The market vendors and researchers are also deploying new technologies into their products in order to stay competitive in the market. In April 2020, researchers at Los Alamos and Argonne National Laboratories announced that they had developed an X-ray detector based on perovskite, a calcium titanium oxide mineral. More sensitive detectors may allow X-ray-based imaging systems to reduce the radiation dose that they deliver and improve their image fidelity.

North America to Account for the Most Significant Share

- The massive share of the radiation detection, monitoring, and safety market in North America is attributed to the favorable government initiatives, a higher number of active nuclear power plants, increasing prevalence of cancer, and growing awareness of radiation safety, driving the market in this region. Moreover, the fact wherein major vendors (Thermo Fischer Scientific, Mirion Technologies, Ludlum Measurement, Ametek, Ultra Electronics, and Landauer) of this market are based in the United States is expected to boost market growth during the forecast period.

- The EIA estimated that the United States' nuclear electricity generation capacity increased by 4.4 gigawatts in 2020. Multiple new nuclear power plants are under construction in Georgia (for instance, according to the EIA, two new nuclear reactors are under construction in Georgia with a capacity of 1100 MW) and South Carolina, and they indicate the opportunity for the demand for radiation monitoring and detection products. Strict regulations for workers' safety in the nuclear industry are supposed to give

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

momentum to the market for radiation detection, monitoring, and safety devices in the country.

- Recently, it has been seen that there has been a shift toward mechanized radiation monitoring and inspection of oil and gas pipelines from the manual method of ultrasound application. These trends reflect that more focus is being placed on making the test increasingly automated, as some of the test sites require technicians to work in extreme site conditions, which can be carried out through drone application, consequently fostering the growth of the market.

- The increasing adoption of nuclear medicine and radiation therapy as a consequence of the increasing incidence of cancer may drive the market growth over the forecast period. For instance, according to the American Cancer Society, the number of new cancer cases in 2020 was estimated to be over 1.81 million people in the United States, out of which almost 0.61 million people were estimated to succumb to the disease. By 2020, it was estimated that there would be nearly 913 thousand new cancer cases among women in the United States.

- According to the National Oncology PET Registry, as 85% of more than 1,600 PET facilities in the United States have PET/CT systems, the emergence of molecular imaging with new radiopharmaceuticals and new technologies is expected to result in continued growth in the coming decades, which may give momentum to the demand for radiation detection, monitoring, and safety devices.

Radiation Detection Monitoring and Safety Industry Overview

The radiation detection, monitoring, and safety market is moderately concentrated, moving toward the fragmented stage, and features a significant amount of innovation derived from basic scientific research. Major players with a prominent share in the market are focusing on expanding their customer base across the served end-user industries. The companies leverage strategic collaborative initiatives to increase their market share and profitability. The companies operating in the market are also acquiring start-ups working on radiation detection, monitoring, and safety technologies to strengthen their product capabilities.

- June 2021 - The University of Texas at Dallas researchers developed a cheaper and more accurate portable technology to detect neutron radiation, which can indicate the presence of materials used for weapons of mass destruction (WMD). This UT Dallas researchers' patented technology involves a thin film that is based on perovskite materials. The film measures were as thin as approximately 8 micrometers. Manufacturing costs of new materials are about 100 to 1,000 times less expensive than current radiation detectors.

- December 2020 - The Dosimetry Services Division of Mirion Technologies acquired Dosimetrix GmbH for the development and production of OSL personal radiation dosimeters and dosimetry solutions, including readers, erasers, software, accessories, and automation systems.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION

1.1 Study Assumptions and Market Definition

1.2 Scope of the Study

2 RESEARCH METHODOLOGY

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

3 EXECUTIVE SUMMARY

4 MARKET DYNAMICS

- 4.1 Market Overview
- 4.2 Industry Attractiveness - Porter's Five Forces Analysis
 - 4.2.1 Bargaining Power of Suppliers
 - 4.2.2 Bargaining Power of Buyers
 - 4.2.3 Threat of New Entrants
 - 4.2.4 Intensity of Competitive Rivalry
 - 4.2.5 Threat of Substitute Products
- 4.3 Industry Value Chain Analysis
- 4.4 Assessment of COVID-19 Impact on the Market
- 4.5 Technology Snapshot
- 4.6 Market Drivers
- 4.7 Market Restraints

5 MARKET SEGMENTATION

- 5.1 Product Type
 - 5.1.1 Detection and Monitoring
 - 5.1.2 Safety
- 5.2 End-user Industry
 - 5.2.1 Medical and Healthcare
 - 5.2.2 Industrial
 - 5.2.3 Homeland Security and Defense
 - 5.2.4 Energy and Power
 - 5.2.5 Other End-user Industries
- 5.3 Geography
 - 5.3.1 North America
 - 5.3.2 Europe
 - 5.3.3 Asia Pacific
 - 5.3.4 Latin America
 - 5.3.5 Middle East & Africa

6 COMPETITIVE LANDSCAPE

- 6.1 Company Profiles*
 - 6.1.1 AmRay Radiation Protection
 - 6.1.2 Arktis Radiation Detectors Ltd
 - 6.1.3 Bar-Ray Products Inc.
 - 6.1.4 Centronic Ltd
 - 6.1.5 ECOTEST Group
 - 6.1.6 Landauer Inc.
 - 6.1.7 Mirion Technologies Inc.
 - 6.1.8 Radiation Detection Company Inc.
 - 6.1.9 RAE Systems Inc.
 - 6.1.10 Thermo Fisher Scientific Inc.
 - 6.1.11 Unfors RaySafe AB
 - 6.1.12 ORTEC (Ametek Inc.)

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

6.1.13 Fuji Electric Co. Ltd

6.1.14 General Electric Company

7 INVESTMENT ANALYSIS

8 FUTURE OF THE MARKET

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

Radiation Detection, Monitoring, and Safety - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 131 pages | Mordor Intelligence

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

ORDER FORM:

Select license	License	Price
	Single User License	\$4750.00
	Team License (1-7 Users)	\$5250.00
	Site License	\$6500.00
	Corporate License	\$8750.00
		VAT
		Total

*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

** VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	<input type="text"/>	Phone*	<input type="text"/>
First Name*	<input type="text"/>	Last Name*	<input type="text"/>
Job title*	<input type="text"/>		
Company Name*	<input type="text"/>	EU Vat / Tax ID / NIP number*	<input type="text"/>
Address*	<input type="text"/>	City*	<input type="text"/>
Zip Code*	<input type="text"/>	Country*	<input type="text"/>
		Date	<input type="text" value="2026-03-01"/>
		Signature	

Scotts International. EU Vat number: PL 6772247784

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

