

Global Technetium Market Outlook to 2027

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Abstracts

Technetium is a silvery-gray transition metal that tarnishes slowly in moist air, dissolves in nitric acid, aqua regia (nitro-hydrochloric acid), and concentrated sulfuric acid though it is not soluble in any strength of hydrochloric acid and it is the first element to be produced artificially and is the lightest element whose isotopes are all radioactive. Even a tiny metal trace can act as an excellent corrosion inhibitor in steel, with radioactivity the only concern. Thus, chemical properties and radioactivity play a significant role in Technetium's industrial and medical applications. According to BlueQuark Research & Consulting, the global technetium market is expected to witness growth at a considerable rate during the forecasted period. Factors like increasing demand for Technetium within the healthcare sector, particularly in the nuclear medicine space, are one of the leading factors that are expected to drive the Technetium-99 market during the forecast period. Further, technological advancements and scientific studies have played an imperative role in the development of modern healthcare. The pharmaceutical industry is predicted to propel the market's growth in the forecasted period. However, stringent government policies and Technetium's logistical and toxicological problems restrain the global technetium market.

Technetium is increasingly being used to include sentinel node imaging before the surgery for breast cancer, lung, renal, and thyroid imaging.

The major factors responsible for the technetium market's growth would be the growing demand for nuclear medicines and the extended employment of myocardial perfusion imaging in detecting spreading coronary heart diseases. The invention of PET and SPECT scans has revolutionized worldwide medical diagnostic studies. Technetium-99 based imaging techniques are predominantly worn to thoroughly understand the human body and detect bone metastases and extended bone diseases, including inflammation. Various other chemical forms of this metal involve imaging different body parts such as lungs, kidneys, brain, and thyroid. Technetium's radioactivity brings production, storage,

and transportation issues despite having important radiopharmaceuticals and radiotherapeutic applications. According to the World Nuclear Association, 95% of the radioisotopes in nuclear medicine are utilized by hospitals. The development of technetium-99m has come into existence owing to the introduction of SPECT and the gamma camera system for cardiac diagnosis and imaging techniques. The introduction of SPECT systems regionally has driven the production of photon-emitting radioisotopes (Technetium-99m), which fuels the global Technetium-99m market. Technetium-99m's supply is unstable, and the market is highly dependent on a small number of organizations handling this metal. The rise in disposable revenue of people in emerging economies is expected to enable them to avail better healthcare facilities. Hence, the availability of better imaging techniques is likely to prompt healthcare service providers to make significant investments in advanced medical automation technologies to meet patient needs, improve operational efficiency, and save both service costs and time. Radionuclide medicine is primarily used in hospitals due to the high usage of Technetium in treatment.

The global technetium market is highly consolidated. Major players in the market were GE Healthcare, Lantheus Medical Imaging, Curium SAS, Mallinckrodt, and Siemens Healthineers, among others.

The North-America has been the largest market for global Technetium due to the demand for advanced medical facilities here. However, the growth here is expected to be much slower compared to the Asia-Pacific region. Substantial investments towards the healthcare sector, skyrocketing improvements in living standards, and population-driven urge for better medical facilities make Asia-Pacific a highly potential market during the forecast period. With increasing knowledge about the benefits of using different materials and elements in the healthcare sector, the adoption of radioactive isotopes, as well as Molybdenum-99/Technetium-99, has witnessed accordant growth over the past couple of decades. Considerable advancements in the imaging techniques, including positron emission tomography (PET) and single-photon emission, computed tomography (SPECT) is another prime factor that is expected to fuel the growth of the Technetium market in the forecasted period. Radioisotopes are progressively being used to perform radiotherapy- a standard cancer treatment. The adoption of radioisotope in radiotherapy and nuclear medicine has advanced at an impressive pace ever since artificial radioisotope was discovered. Research and development activities within the Technetium market continue to investigate potential applications of artificial isotopes for nuclear medicines. Within North America, particularly in the U.S., the adoption of Technetium-99 for myocardial perfusion imaging is critical due to the rising prevalence of coronary artery disease. Another application

wherein Technetium-99 is predominantly being used is for full-body imaging to detect bone metastases and, in some cases, detect benign bone diseases, including inflammation. Other secondary applications wherein Technetium-99 is increasingly being used include sentinel node imaging before the surgery for breast cancer, lung, renal, and thyroid imaging.

NorthStar Medical Technologies, a worldwide innovator in the production and distribution of radioisotopes worn for medical imaging, announced on March 2020 that it has entered into a global, exclusive licensing agreement with Capella Imaging, a BioGenerator company, to progress a fibrin-targeted diagnostic imaging agent, FibroScint (Tc-99m F4A), for cardiac imaging. If successfully evolved and approved, it may have potential applications across multiple cardiovascular conditions like thrombus (blood clot) associated with left ventricular assist devices (LVADs), pulmonary embolism, deep vein thrombosis, and acute coronary syndrome.

Thousands of cancer screenings and other vital procedures were expected to have been canceled in October 2020, after a new incident at Lucas Heights, Australia's only nuclear medical facility. A fault at the nuclear medical facility over the weekend caused the short-term shortage of molybdenum-99, a generally used isotope in nuclear medicine whose supply is vital as a raw material for technetium-99m production is worn in imaging techniques and radiotherapies.

Global Technetium Marketreport provides deep insights into the current and future state of the technetium market across various regions. The study comprehensively analyzes the technetium market by segmenting based on Type (Metal Powder, Metal Crystal), Production (Nuclear Fission Product, Neutron Activation, Particle Accelerator), application (Nuclear Medicine and Biology, Industrial and Chemical, and Others), and geography (North America, Europe, Asia-Pacific, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 on the market's growth, in detail. The study covers & includes emerging market trends, developments, opportunities, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of prominent companies, including their market shares and projects.

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