

Helium-3 Market Research Report by Form (Liquid and Gas) By Application (Oil & Gas, Defense, Power Plant, Medical and Others), by Regional (North America, Europe, South America, Asia-Pacific, Middle East and Africa) Forecast to 2035

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Market Overview

The global Helium-3 (^3He) market has been experiencing significant growth, with a market size of approximately USD 672.62 million in 2024. Projections of a compound annual growth rate (CAGR) of 9.03% from 2025 to 2035 emphasize the growing demand and diverse applications of this rare isotope. The unique properties of helium-3 render it a valuable resource in a variety of high-tech industries, including medical imaging, cryogenics, nuclear fusion research, and neutron detection. This isotope of helium is non-radioactive.

In the helium-3 market, businesses face unique opportunities and challenges. One of the primary market drivers is the growing demand for helium-3 in scientific research, medical applications, and other industries. The continuous advancements in technology, as well as the increasing utilization of apparatus that rely on helium-3 for refrigeration and detection purposes, are the driving forces behind this demand.

Recent market trends suggest a significant rise in research and development initiatives that focus on the extraction of helium-3 from a variety of sources, including lunar regolith and nuclear fusion reactions. Significant interest has been generated, and opportunities have been presented for space exploration companies and research institutions to investigate and exploit the potential availability of helium-3 from lunar sources.

Key players in the helium-3 market are actively developing innovative extraction and production methods to meet the growing demand. Additionally, they are interested in securing access to helium-3 reserves and establishing a sustainable supply chain through partnerships and collaborations.

Market segment insights

The global Helium 3 market has been divided into the following application categories: Oil and gas, defense, power plants,

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medical, and other industries.
The Global Helium 3 market has been divided into liquid and gas segments according to its physical state.

Regional Perspectives

The Helium-3 regional market is segmented into the following geographic regions: North America, Europe, Asia-Pacific, South America, and the Middle East and Africa. North America is the largest regional market for Helium3, comprising the majority of the market share. Europe is the second-largest regional market, with Asia-Pacific following in that order. The increasing demand for Helium3 in a variety of applications, including aerospace, medical imaging, and scientific research, is the primary factor contributing to the market growth. The Helium-3 Market is highly fragmented, with a substantial number of minor and medium-sized companies operating within it. The primary participants in the market are Messer Group, Praxair Technology, Inc., Iwatani Corporation, and Air Liquide.

Major Players

The Helium-3 Market is dominated by a number of prominent companies, including SHI Planet Energy, NuScale Power, Terrestrial Energy, First Helium, Alteria Energy, Helium3, General Atomics, TAE Technologies, Magma Energy, Hokkaido Electric Power, Luna Innovations, Energy Fuels, Helium One, Helion Energy, and Deep Isolation.

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