North America Xenon Gas Market Trends, Segmentation, Regional Outlook, Future Plans and Forecast to 2027

North America Xenon Gas Market Size Worth $103.8 Million by 2027 | CAGR: 7.0%: AMR

North America Xenon Gas Market

PORTLAND, OREGON, UNITED STATES, June 13, 2024 /EINPresswire.com/ -- Allied Market Research published a report, titled, "North America Xenon Gas Market By Grade (Industrial Grade and Research Grade), By End-Use Industry (Semiconductors, Electronics, Automotive & Transportation, Aerospace & Aircraft, and Others), and By Country (U.S., Canada, and Mexico): Regional Opportunity Analysis and Industry Forecast, 2024-2027". According to the report, the North America xenon gas market was valued at $79.3 million in 2023 and is estimated to reach $103.8 million by 2027, exhibiting a CAGR of 7.0% from 2024 to 2027.

> Xenon is a noble gas with the chemical symbol Xe and atomic number 54. It is a colorless, dense, odorless, and tasteless gas found in trace amounts in the Earth's atmosphere.”
>
> *David Correa*

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Prime determinants of growth

The North America xenon gas market is driven by robust demand from the semiconductors end-use industry. High purity xenon gas is most commonly employed for etching, deposition, and memory chip fabrication in the semiconductor industry. Use of xenon gas for removal of material from thin layer of memory chips (etching) is the key market trend. In addition, it is also used for deposition of microchips during semiconductor production, which drives the growth of the xenon gas market. For instance, memory chip producers such as Samsung Electronics Co.

use xenon gas during semiconductor production. Samsung Electronics Co. has planned to use the xenon gas produced by POSCO Holdings Inc. from 2024. In addition, xenon gas is gaining importance during production of high technology semiconductor devices such as 3-dimensional V-NAND. This high-tech semiconductor device is widely used across tablets, USB drives, enterprise-grade SSDs, flash drives, and other storage devices. All these factors collectively drive the demand for xenon gas in North America.

The increase in demand for xenon gas is owing to a rise in use of this noble gas by semiconductor chip manufacturers in North America. Microelectromechanical systems (MEMS) are advanced devices that integrate microelectronics and micromechanics into a single device. This in turn helps build complex and efficient circuits on single memory chips. Memory chip production is dominated by the U.S. and Europe countries globally. These factors altogether escalate the growth of the North America xenon gas market in the semiconductors end-use industry.

However, high production cost of xenon gas and high cost of xenon automotive lights over halogen lights hamper the market growth.

The industrial grade to maintain its lead position during the forecast period.

Based on grade, the industrial grade accounted for the largest share in 2023, contributing two-third of the North America xenon gas market revenue. Industrial grade xenon is used as optimum fuel and propellant in spacecrafts and satellites. High light spectrum of xenon gas naturally emits bluish hue and this hue is considered like daylight hue. Thus, xenon gas can be effectively used across industrial applications such as approach lights in airplanes, automotive incandescent bulbs, stage lighting, plasma display panels, internal examination lighting, and UV lasers. xenon gas propellant allows thrusters to produce significant quantities of thrust while utilizing a smaller amount of fuel. The National Aeronautics and Space Administration (NASA) has developed a xenon-powered thruster. Currently, spacecraft and other space travel missions utilize the capabilities of the evolving xenon thruster known as NEXT.

NASA continues to research emerging innovations that enable commercial spaceflight missions and supports governmental & commercial key-players in the space industry. For instance, NASA intends to increase human presence and sustainability in other parts of the solar system, like the Moon and Mars. As part of its Solar Electric Propulsion (SEP) initiative, NASA is working on and developing new technologies to support space exploration activities and other space missions. This cutting-edge SEP technology is expected to make thrusters produce tremendous propulsion power while being safer and more affordable. This technology is anticipated to aid and support the next generation space exploration activities. Xenon thrusters are used in SEP technology to produce and capture electrons. These electrons are extremely important and aid in ionizing the propellant. As it is simple to accelerate xenon gas to 65,000 mph, it is frequently utilized in these thrusters to finish the orbital transfer of satellites and spacecraft. The presence of large number of space technology and satellite companies across North America drives the demand of xenon

gas market.

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The aerospace & aircraft end-use industry to maintain its lead position during the forecast period

Based on the end-use industry, the aerospace & aircraft end-use industry accounted for the largest share in 2023, contributing to two-seventh of the North America xenon gas market revenue. In spacecrafts and satellites, xenon gas is employed as the best fuel and propellant. Electric propulsion systems are required for satellites and other spacecraft to travel through orbit. Xenon gas is the most efficient fuel for electric propulsion systems. Ion thrusters are used for a variety of space missions, including station-keeping, which entails keeping communication satellites in accurate orbit.

Ion thrusters are also employed to push spacecraft across the solar system in a symmetrical manner. Ion thrusters must deliver impulsive thrust while using propeller fluid economically. Chemical propulsion can also provide impulse thrust; however, this approach requires a large amount of chemical propellants. Xenon gas is the most commonly used fuel in ion thrusters, owing to its high atomicity, which makes it easily ionizable.

The U.S. to maintain its lead position during the forecast period

Based on country, the U.S. accounted for the largest share in 2023, contributing to three-fourth of the North America xenon gas market revenue. Xenon is used as a starter gas in sodium vapor lamps. Sodium vapor lamps are widely used in outdoor lightning applications such as roads, parking & security areas, airports, goods yard, and other industrial premises. Xenon flash lamps emit light source with instantaneous high peak output. This emitted light source is used across applications such as chemical analysis and imaging. Xenon gas is the most widely used across such light emitting devices and other photographic flashes. In addition, this rare gas is used to excite the active medium source in lasers that further help to generate coherent light. Solar simulators are another end users of xenon gas. Xenon gas has natural color temperature that closely relates to noon sunlight, thus making it viable to be used in solar simulators. All these factors are driving the demand for xenon gas across U.S.

Leading Market Players: -
Linde plc
Middlesex Gases
Electronic Fluorocarbons LLC
Air Liquide
Messer Canada Inc.
Nova Gas Technologies

American Gas Products
Air Products and Chemicals Inc.
Isoflex USA
WestAir Gases and Equipment Inc.

The report provides a detailed analysis of these key players in the North America xenon gas market. These players have adopted different strategies such as new product launches, collaborations, expansion, joint ventures, agreements, and others to increase their market share and maintain dominant shares in different regions. The report is valuable in highlighting business performance, operating segments, product portfolio, and strategic moves of market players to showcase the competitive scenario. In addition, the report also includes customer analysis, domestic pricing analysis and import pricing analysis.

Want to Access the Statistical Data and Graphs, Key Players' Strategies:
https://www.alliedmarketresearch.com/north-america-xenon-gas-market/purchase-options

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