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Asia Pacific Electronic Gases Market By Type (Specialty Electronic Gases, Bulk Electronic Gases), By Application Process (Deposition, Etching, Doping & Lithography, Others), By Region, Competition, Forecast and Opportunities, 2018-2028F

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Abstracts

Asia Pacific Electronic Gases Market has valued at USD3.15 billion in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 4.25% through 2028. Electronic gases encompass a broad spectrum of specialty and bulk gases utilized in the manufacturing and processing of electronics, including semiconductors. They play an integral role in crucial processes such as deposition, etching, doping, and lithography, ensuring the precise fabrication and functionality of electronic components.

Several key factors are propelling the significant growth of the electronic gases market in the Asia-Pacific region. Firstly, the region's burgeoning electronics industry acts as a primary driver, with countries like China, South Korea, and Japan leading the global electronics production landscape. The increasing demand for consumer electronics, telecommunications devices, and automotive electronics has resulted in a surge in the demand for electronic gases, as these gases are essential for the production of high-quality electronic devices.

Secondly, rapid industrialization across the Asia-Pacific region, coupled with advancements in technology, has led to a notable increase in the manufacture of semiconductors. As industries embrace automation, Internet of Things (IoT) technologies, and artificial intelligence (AI), the demand for semiconductors has skyrocketed. Electronic gases, with their critical role in semiconductor manufacturing, are thus expected to experience robust growth.

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Thirdly, the ongoing trend towards digitalization and smart manufacturing is further boosting the electronic gases market. Industries across various sectors are increasingly adopting automation, data analytics, and advanced robotics to improve operational efficiency and productivity. This digital transformation requires the use of electronic gases at various stages of the manufacturing process to ensure the production of reliable and high-performance electronic devices.

Additionally, specialty gases, which include high purity gases, noble gases, carbon gases, halogen gases, and others, are gaining traction in the Asia-Pacific region. These gases find extensive application in the manufacturing of electronics and semiconductors, where precise control of gas purity and composition is critical for optimal performance.

In conclusion, the Asia-Pacific electronic gases market is on a strong growth trajectory, driven by the region's booming electronics industry, rapid industrialization, technological advancements, and the increasing adoption of digitalization and smart manufacturing. The demand for electronic gases, including specialty gases, is expected to rise as the region continues to lead in electronics production and embraces innovative technologies for a digitally connected future.

Key Market Drivers

Growth in Semiconductor Industry

The semiconductor industry in the Asia-Pacific region has been experiencing a remarkable growth trajectory in recent years. This growth can be attributed to several factors, including the increasing demand for electronic devices and the advancements in technology driving the development of the semiconductor industry.

Electronic gases play a vital role in various processes involved in semiconductor production, such as deposition, etching, doping, and lithography. These gases are indispensable for ensuring the high quality and efficiency of semiconductor manufacturing. With the thriving semiconductor industry, the demand for electronic gases has been steadily increasing, contributing to the overall growth of the market.

The use of semiconductors has become pervasive across different sectors, including consumer electronics, automotive, and industrial applications. This widespread adoption of semiconductors fuels the need for high-quality electronic gases to support their

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production. As a result, the market for electronic gases in the semiconductor industry is expected to maintain a steady growth rate in the coming years, with a positive outlook for future expansion.

The relationship between the semiconductor industry and the electronic gases market is symbiotic. The flourishing semiconductor industry drives the demand for electronic gases, while the availability and quality of these gases directly impact the efficiency and effectiveness of semiconductor production processes. Therefore, efforts to improve the quality and develop more environmentally friendly options for electronic gases can further enhance the growth of the semiconductor industry.

The Asia-Pacific region has emerged as a significant player in the global electronics and semiconductor market. With its robust growth in the semiconductor industry, this region has also become a stronghold for the electronic gases market. The increasing demand for electronic gases in the Asia-Pacific region is primarily driven by the flourishing semiconductor industry. As the semiconductor industry continues to flourish, the electronic gases market is expected to ride on its coattails, ensuring sustained growth and opportunities in the coming years.

In conclusion, the semiconductor industry in the Asia-Pacific region is witnessing remarkable growth, driven by the increasing demand for electronic devices and advancements in technology. The symbiotic relationship between the semiconductor industry and the electronic gases market further amplifies this growth, with efforts to improve quality and develop environmentally friendly options paving the way for future expansion. The Asia-Pacific region, with its strong presence in the global electronics and semiconductor market, is poised to continue driving the demand for electronic gases, ensuring sustained growth and opportunities in the coming years.

Surge in Technological Advancements

The escalating demand for electronic gases is primarily driven by the robust growth of the semiconductor industry in the Asia-Pacific region. This industry's expansion is fueled by the increasing demand for electronic devices, including smart devices and automobiles. As the reliance on electronic devices continues to grow, so does the need for semiconductors, which are at the heart of modern electronics. The production of these semiconductors heavily relies on electronic gases, making their demand intrinsically linked to the thriving semiconductor industry.

Technological advancements have played a pivotal role in catalyzing the growth of the

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electronic gases market. Innovative manufacturing processes and the development of more efficient and environmentally friendly gases are just a few examples of these advancements. These technological breakthroughs not only contribute to the miniaturization of electronic components but also improve energy efficiency and enhance the performance of semiconductors. As a result, they not only increase the demand for semiconductors but also stimulate the need for high-quality electronic gases used in their production.

Moreover, in addition to the burgeoning semiconductor industry, the rising demand for natural gas in Southeast Asian countries is expected to drive the electronic gases market further. As these countries emerge as major demand drivers for the liquefied natural gas (LNG) market, the need for electronic gases, particularly those used in gas processing and purification, is projected to increase. This presents new opportunities for the electronic gases industry to expand its market presence and cater to the evolving needs of the Southeast Asian region.

In summary, the demand for electronic gases is propelled by the growth of the semiconductor industry, technological advancements in manufacturing processes, and the rising demand for natural gas in Southeast Asian countries. These factors collectively contribute to the increasing importance of electronic gases in various industries, making them a critical component in the production of electronic devices and the overall advancement of modern technology.

Key Market Challenges

Volatility in Price of Raw Materials

While the energy crisis is primarily focused on Europe, Asia is not immune to its effects. This crisis has resulted in extraordinary volatility in energy prices, affecting the cost of production for many industries, including the electronic gases market. Increased energy costs directly impact the price of raw materials, leading to inflated production costs for electronic gases.

The volatility of energy commodity prices, such as crude oil, natural gas, and CO2, also impacts the electronic gases market. As these commodities are essential in the production process of electronic gases, fluctuations in their prices can significantly affect the cost of production. In 2022, natural gas prices reached all-time high levels in Asian markets, exacerbating the challenge.

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Moreover, the scarcity of energy resources further amplifies the impact on the electronic gases market in the Asia-Pacific region. With limited access to affordable and sustainable energy sources, manufacturers face additional hurdles in maintaining cost-effective production processes. This scarcity not only drives up the prices of energy commodities but also raises concerns about the long-term sustainability of the electronic gases market.

The volatility in raw material prices poses a significant challenge for the electronic gases market by making cost predictions difficult and potentially squeezing profit margins. Manufacturers may be forced to absorb these additional costs, which can impact their profitability. Alternatively, these increased costs may be passed on to consumers, potentially affecting demand.

In conclusion, while the Asia-Pacific electronic gases market is set for significant growth, the volatility in raw material prices presents a formidable challenge. Manufacturers in this sector will need to navigate these fluctuations carefully, considering factors such as energy scarcity and long-term sustainability, to maintain profitability and ensure sustainable growth. By implementing robust strategies and exploring alternative energy sources, the industry can mitigate the adverse effects of the energy crisis and secure a prosperous future.

Key Market Trends

Expansion of Memory and Storage Markets

Electronic gases play a vital role in the production and processing of semiconductors, which serve as the backbone of memory and storage devices. These gases are indispensable in various critical processes such as deposition, etching, doping, and lithography, ensuring the high-quality performance of these devices. As the demand for memory and storage devices continues to surge, the need for electronic gases is expected to witness a significant upswing, driving the growth of the electronic gases market.

Manufacturers of memory and storage devices rely on the availability of top-notch electronic gases to meet the stringent requirements of their production processes. The precise control and application of these gases enable the creation of intricate circuit patterns and the development of advanced semiconductor technologies. Consequently, the expansion of memory and storage markets in the Asia-Pacific region has become a noteworthy trend, fueling the demand for electronic gases and propelling the growth of

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the market.

Looking ahead, the future of the electronic gases sector appears promising, as the continuous growth of memory and storage markets in the Asia-Pacific region indicates a sustained demand for electronic gases. This growing demand not only reflects the increasing reliance on memory and storage devices but also underscores the crucial role that electronic gases play in enabling technological advancements. With advancements such as artificial intelligence, the Internet of Things, and 5G driving the need for more advanced and efficient memory and storage solutions, the demand for electronic gases is poised to experience sustained growth in the coming years.

Segmental Insights

Type Insights

Based on the category of type, the specialty electronic gases segment emerged as the dominant player in the Asia Pacific market for electronic gases in 2022. The Asia-Pacific region, encompassing key electronics manufacturing hubs, plays a crucial role in the global electronics industry. With countries like China, South Korea, and Taiwan at the forefront of global electronics production, the demand for specialty electronic gases is on the rise. These gases, irreplaceable in the production of semiconductors, are vital components that form the backbone of modern electronics.

Driven by rapid technological advancements, the Asia-Pacific region is experiencing a significant surge in electronic technology. As a result, there is an increasing need for high-quality specialty electronic gases. These gases are utilized in various critical processes such as deposition, etching, doping, and lithography, which are fundamental to the production of advanced electronic devices.

Application Process Insights

The deposition segment is projected to experience rapid growth during the forecast period. The Asia-Pacific region is widely recognized as a key hub for electronics manufacturing, with numerous manufacturing centers driving the demand for specialty electronic gases. These gases play a crucial role in deposition processes, which are fundamental in the production of semiconductors and electronic devices. Consequently, the robustness and growth of the electronics manufacturing sector in the Asia-Pacific region directly impact the demand for deposition processes and the associated electronic gases.

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In recent years, the use of deposition processes has become increasingly prevalent in semiconductor production. With the ongoing global semiconductor boom, the Asia-Pacific region has emerged as a significant player in this market, further fueling the demand for deposition processes and electronic gases. This surge in demand is driven by the growing need for high-quality electronic devices that offer superior performance, longevity, and efficiency. Deposition processes, facilitated by electronic gases, enable manufacturers to produce components that meet these ever-increasing consumer expectations.

Regional Insights

China emerged as the dominant player in the Asia Pacific Electronic Gases Market in 2022, holding the largest market share in terms of value. China's manufacturing sector heavily relies on imports from the economies of East Asia to power its factories and export-oriented industries. Among these imports are gases specialty electronic gases, which play an indispensable role in the production of semiconductors and a wide range of electronic devices.

While China's semiconductor sector is experiencing rapid growth, it does not currently contribute a significant portion to the country's GDP. This is mainly due to the large base of China's GDP. However, the semiconductor manufacturing process necessitates a diverse array of specialty gases, driving the demand for electronic gases in the region.

This demand is further fueled by the continuous advancements in technology and the ever-increasing consumer demand for electronic devices. As China strives to solidify its position as a global manufacturing leader, the need for high-quality electronic gases becomes even more critical in order to ensure the efficient and reliable production of semiconductors.

Key Market Players

Taiyo Nippon Sanso Corporation (TNSC)

Praxair India Pvt Ltd

Air Products PLC

Air Liquide International SA

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Linde PLC

Yingde Gases Group Company

Sumitomo Seika Chemicals Co., Ltd.

Hangzhou Hangyang Co., Ltd.

Suzhou Jinhong Gas Co., Ltd.

Showa Denko Electronics KK

Report Scope:

In this report, the Asia Pacific Electronic Gases Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Asia Pacific Electronic Gases Market, By Type:

Specialty Electronic Gases

Bulk Electronic Gases

Asia Pacific Electronic Gases Market, By Application Process:

Deposition

Etching

Doping & Lithography

Others

Asia Pacific Electronic Gases Market, By Region:

China

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- Japan
- South Korea
- Australia
- India
- Rest of Asia Pacific

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Asia Pacific Electronic Gases Market.

Available Customizations:

Asia Pacific Electronic Gases Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

- Detailed analysis and profiling of additional market players (up to five).

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