

MarketResearchReports.com: Global Monosilane Market to Reach USD 869.36 million by 2029

This report covers the Monosilane segments by manufacturers, Type, Application, region and country, and provides market size (value, volume, and average price)

LEWES, DELAWARE, UNITED STATES, May 29, 2023 /EINPresswire.com/ -- The monosilane industry is a sector involved in producing, supplying, and applying monosilane (SiH_4), a colorless, flammable gas with a pungent odor. Monosilane is primarily used in the semiconductor and solar industries to deposition thin films and manufacture photovoltaic cells. Here's an overview of the monosilane industry:

Production:

Monosilane is typically produced by reacting metallurgical-grade silicon (MG-Si) with hydrogen gas in a high-temperature process known as the Siemens process. In this process, silicon and hydrogen react at around 800-900°C in the presence of a catalyst to produce monosilane gas. The process requires careful control of temperature, pressure, and other parameters to optimize the yield and purity of monosilane.

Market and Suppliers:

The monosilane market is closely tied to the semiconductor and solar industries, which are major gas consumers. The demand for monosilane is driven by the growth in the production of electronic devices, such as smartphones, computers, and automotive electronics, as well as the expansion of the solar energy sector.



Monosilane Market Research Report



>>Due to the COVID-19 pandemic and Russia-Ukraine War Influence, the [global monosilane market](#) was estimated at US\$ 448.25 million in the year 2022 and is projected to reach a revised size of US\$ 869.36 million by 2029, growing at a CAGR of 10.32% during the forecast period 2023-2029.

>>The representative players in the global Monosilane market are REC Silicon, SK Materials, Linde, Air Liquide, and Taiyo Nippon Sanso, accounting for 61.10% market share in terms of revenues in 2022.

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Applications:

Semiconductor Industry: Monosilane is a critical precursor gas used in the chemical vapor deposition (CVD) process for depositing thin silicon films to fabricate integrated circuits and other semiconductor devices. It is used to create high-quality, uniform silicon films with precise thickness and control, enabling the production of smaller and more advanced electronic components.

Solar Industry: Monosilane is used to manufacture photovoltaic (PV) cells for solar panels. It serves as a silicon precursor in the deposition of amorphous silicon and microcrystalline silicon thin films, which are key components of thin-film solar cells. Monosilane-based processes help enhance the efficiency and performance of solar panels.

Safety Considerations:

Monosilane is a flammable gas and requires careful handling and storage to prevent the risk of fire and explosion. It is also toxic and can cause irritation to the eyes, respiratory system, and skin upon direct contact. Proper safety protocols, including the use of personal protective equipment and adequate ventilation, are essential when working with monosilane.

Environmental Considerations:

Monosilane is a greenhouse gas, and its production and use have environmental implications. Efforts are being made in the industry to develop more sustainable production methods and improve the overall environmental footprint of the monosilane manufacturing process.

The monosilane industry plays a crucial role in the semiconductor and solar sectors, providing a key precursor gas for thin film deposition in electronic devices and photovoltaic cells. The industry continues to evolve and innovate as demand for advanced semiconductor technologies and clean energy solutions increases.

Report Covergae:

Chapter One: Introduces the study scope of this report, executive summary of market segments by Type, and market size segments for North America, Europe, Asia Pacific, Latin America, Middle East & Africa.

Chapter Two: Detailed analysis of Monosilane manufacturer's competitive landscape, price, sales, revenue, market share and ranking, latest development plan, merger, and acquisition information, etc.

Chapter Three: Sales, revenue of Monosilane in regional level. It provides a quantitative analysis of the market size and development potential of each region and introduces the future development prospects, and market space in the world.

Chapter Four: Introduces market segments by Application, market size segment for North America, Europe, Asia Pacific, Latin America, Middle East & Africa.

Chapter Five, Six, Seven, Eight and Nine: North America, Europe, Asia Pacific, Latin America, Middle East & Africa, sales and revenue by country.

Chapter Ten: Provides profiles of key players, introducing the basic situation of the main companies in the market in detail, including product sales, revenue, price, gross margin, product introduction, recent development, etc.

Chapter Eleven: Analysis of industrial chain, key raw materials, manufacturing cost, and market dynamics. Introduces the market dynamics, latest developments of the market, the driving factors and restrictive factors of the market, the challenges and risks faced by manufacturers in the industry, and the analysis of relevant policies in the industry.

Chapter Twelve: Analysis of sales channel, distributors and customers.

Chapter Thirteen: Research Findings and Conclusion.

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Sudeep Chakravarty

Market Research Reports Inc.

+1 302-703-9904

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