

# **Molybdenum Disulfide (MoS<sub>2</sub>) Market Report by Type (Powder, Crystals), Application (Lubricants and Coatings, Semiconductor, Catalysts, and Others), End Use Industry (Automotive, Aerospace and Defense, Electrical and Electronics, Construction, Chemical and Petrochemical, and Others), and Region 2024-2032**

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## **Abstracts**

The global molybdenum disulfide (MoS<sub>2</sub>) market size reached US\$ 627.0 Million in 2023. Looking forward, IMARC Group expects the market to reach US\$ 875.6 Million by 2032, exhibiting a growth rate (CAGR) of 3.67% during 2024-2032. The increasing demand from numerous end-user industries, the bolstering growth of the electronics sector, and expanding product utilization across water treatment plants represent some of the key factors driving the market.

Molybdenum disulfide (MoS<sub>2</sub>) is a naturally occurring mineral belonging to the transition metal dichalcogenide group. It is a solid lubricant with excellent anti-friction and anti-wear properties, making it suitable for high-temperature and high-pressure environments. MoS<sub>2</sub> is a two-dimensional material with a thickness of only a few atoms, due to which it is widely adopted across next-generation electronics and optoelectronics. Besides this, it has a large surface area and can store ions, which, in turn, has expanded its usage in energy storage applications, such as batteries and supercapacitors. In addition to this, MoS<sub>2</sub> exhibits excellent semiconducting properties, due to which it is used in electronic devices such as transistors and solar cells. Consequently, it finds a wide range of applications across various end-user industries, including automotive, aviation, construction, oil and gas, chemical, and electronics.

### Molybdenum Disulfide (MoS<sub>2</sub>) Market Trends:

The increasing demand for MoS<sub>2</sub> from the automotive and aviation sectors due to its high strength and low weight, which helps minimize vibration and enhance passenger comfort, represents one of the prime factors driving the market growth. Besides this, the growing product adoption across end-use industries, such as construction, chemical and petrochemical, heavy equipment, and solvent, due to its high thermal stability and lubrication properties, is creating a favorable outlook for the market. Moreover, the bolstering growth of the electronics industry is contributing to the market growth as MoS<sub>2</sub> is used in the production of electronic components such as semiconductors, thin-film transistors, and photovoltaic cells. Concurrent with this, the expanding product application in photodetectors, optoelectronic devices, field-effect transistors (FETs), sensors, and valleytronics are presenting remunerative growth opportunities for the market. In addition to this, the surging use of MoS<sub>2</sub> in the oil and gas industry as a lubricant and catalyst, specifically for high-temperature and high-pressure purposes, is acting as another significant growth-inducing factor. Furthermore, the rising awareness about the benefits of MoS<sub>2</sub> in water treatment and purification and large-scale product employment in the medical and healthcare industries, particularly for drug delivery systems and bioimaging, is strengthening the market growth. Other factors, such as extensive investments in research and development (R&D) initiatives, ongoing product innovations, and the shifting preference for MoS<sub>2</sub> as a sustainable and eco-friendly alternative to traditional lubricants and chemicals, are positively impacting the market growth.

### Key Market Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global molybdenum disulfide (MoS<sub>2</sub>) market, along with forecasts at the global, regional, and country levels from 2024-2032. Our report has categorized the market based on type, application, and end use industry.

### Type Insights:

Powder  
Crystals

The report has provided a detailed breakup and analysis of the molybdenum disulfide (MoS<sub>2</sub>) market based on the type. This includes powder and crystals. According to the report, powder represented the largest segment.

### Application Insights:

Lubricants and Coatings  
Semiconductor  
Catalysts  
Others

A detailed breakup and analysis of the molybdenum disulfide (MoS<sub>2</sub>) market based on the application has also been provided in the report. This includes lubricants and coatings, semiconductor, catalysts, and others. According to the report, lubricants and coatings accounted for the largest market share.

#### End Use Industry Insights:

Automotive  
Aerospace and Defense  
Electrical and Electronics  
Construction  
Chemical and Petrochemical  
Others

The report has provided a detailed breakup and analysis of the molybdenum disulfide (MoS<sub>2</sub>) market based on the end use industry. This includes automotive, aerospace and defense, electrical and electronics, construction, chemical and petrochemical, and others. According to the report, automotive represented the largest segment.

#### Regional Insights:

North America  
United States  
Canada  
Asia Pacific  
China  
Japan  
India  
South Korea  
Australia  
Indonesia  
Others  
Europe

Germany  
France  
United Kingdom  
Italy  
Spain  
Russia  
Others  
Latin America  
Brazil  
Mexico  
Others  
Middle East and Africa

The report has also provided a comprehensive analysis of all the major regional markets, which include North America (the United States and Canada); Asia Pacific (China, Japan, India, South Korea, Australia, Indonesia, and others); Europe (Germany, France, the United Kingdom, Italy, Spain, Russia, and others); Latin America (Brazil, Mexico, and others); and the Middle East and Africa. According to the report, Asia Pacific was the largest market for molybdenum disulfide (MoS<sub>2</sub>). Some of the factors driving the Asia Pacific molybdenum disulfide (MoS<sub>2</sub>) market included the growing demand from the electronics sector, the bolstering growth of the construction industry, and the rising need for clean and fresh drinking water.

#### Competitive Landscape:

The report has also provided a comprehensive analysis of the competitive landscape in the global molybdenum disulfide (MoS<sub>2</sub>) market. Competitive analysis such as market structure, market share by key players, player positioning, top winning strategies, competitive dashboard, and company evaluation quadrant has been covered in the report. Also, detailed profiles of all major companies have been provided. Some of the companies covered include American Elements, Climax Molybdenum Marketing Corporation (Freeport-McMoRan Inc.), Luoyang Shenyu Molybdenum Co. Ltd., Merck KGaA, Moly Metal L.L.P, Rose Mill Co. LLC, Tribotec GmbH (Treibacher Industrie AG), etc. Kindly note that this only represents a partial list of companies, and the complete list has been provided in the report.

#### Key Questions Answered in This Report:

How has the global molybdenum disulfide (MoS<sub>2</sub>) market performed so far, and how will it perform in the coming years?

What are the drivers, restraints, and opportunities in the global molybdenum disulfide

(MoS<sub>2</sub>) market?

What is the impact of each driver, restraint, and opportunity on the global molybdenum disulfide (MoS<sub>2</sub>) market?

What are the key regional markets?

Which countries represent the most attractive molybdenum disulfide (MoS<sub>2</sub>) market?

What is the breakup of the market based on the type?

Which is the most attractive type in the molybdenum disulfide (MoS<sub>2</sub>) market?

What is the breakup of the market based on the application?

Which is the most attractive application in the molybdenum disulfide (MoS<sub>2</sub>) market?

What is the breakup of the market based on the end use industry?

Which is the most attractive end use industry in the molybdenum disulfide (MoS<sub>2</sub>) market?

What is the competitive structure of the global molybdenum disulfide (MoS<sub>2</sub>) market?

Who are the key players/companies in the global molybdenum disulfide (MoS<sub>2</sub>) market?

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