

United States Molybdenum Superalloys Market Assessment, By Application [Mineral processing, Waste incineration, Desalination, Thermal Application, Others, By End-use Industry [Chemical Industry, Construction, Pharmaceutical, Oil & Gas, Pulp & paper, Electrical & Electronics, Metal Processing, Military & Defence Industry, Others], By Region, Opportunities and Forecast, 2016-2030F

<https://marketpublishers.com/r/U5821375DDBDEN.html>

Date: February 2025

Pages: 114

Price: US\$ 3,300.00 (Single User License)

ID: U5821375DDBDEN

Abstracts

United States Molybdenum Superalloys market size was estimated at 1.32 kilo tons in 2022, which is expected to reach 2.1 kilo tons in 2030, with a CAGR of 6.3% for the forecast period between 2023 and 2030. Two key sectors primarily drive the demand for molybdenum superalloys in the United States. Firstly, the defense sector relies heavily on these alloys for critical applications like jet engines and gas turbines, supported by substantial investments in defense technologies. Secondly, in the energy sector, especially gas and steam turbines for power generation. A growing emphasis on energy efficiency and cleaner energy sources in the United States further drives it.

Additionally, molybdenum-containing superalloys find extensive use in large-scale infrastructure development, including bridges, pipelines, and industrial facilities. These alloys are known for their strength and corrosion resistance, which is fundamental in ensuring the longevity and integrity of infrastructure. Within chemical processing plants, their exceptional resistance to corrosion and high temperature is indispensable, supporting the reliability and durability of crucial equipment. It is particularly crucial in the growing chemical industry, encompassing pharmaceuticals and petrochemicals, along with the ongoing infrastructure and maintenance projects in the United States fuel

demand for molybdenum superalloys.

Expanding Chemical Sector to Provide Traction for the Market

As the chemical industry continues to evolve and expand to meet the needs of various markets and applications in the United States, the demand for molybdenum superalloys remains resilient. This demand is driven by the industry's growth and its ongoing pursuit of efficiency, safety, and sustainability. Molybdenum superalloys are selected as chemical processing units for their ability to withstand extreme conditions, making them indispensable in an industry where precision and reliability are paramount.

For instance, BASF's USD 780 million investment in expanding its chemical plant in the United States aims to meet rising demand across various North American industries, including construction, appliances, transportation, and automotive sectors. This expansion underscores the significance of specialized materials such as molybdenum superalloys, essential for construction and appliance manufacturing due to their exceptional corrosion resistance and durability, further driven by the growing needs resulting from chemical plant expansions.

Strong Investments in Defense to Cater the Demand

The defense industry is a significant consumer of molybdenum superalloys, primarily for their critical applications in high-temperature environments. These superalloys are extensively utilized in defense systems, including gas turbine components and advanced weaponry. As the United States continues to invest in defense technologies and modernization efforts, the demand for molybdenum superalloys in the defense sector remains strong.

For instance, based on the latest data published by the Stockholm International Peace Research Institute (SIPRI), U.S. defense expenditure saw a substantial rise of USD 71 billion from 2021 to 2022. This increase can be attributed, in part, to the provision of military aid to support Ukraine in its ongoing conflict. Consequently, the United States' defense budget surpasses the combined defense spending of the following ten nations. This increasing investment in the defense sector will likely drive the molybdenum superalloys market.

Shift towards Renewable Energy to Boost the Market of Molybdenum Superalloys

Molybdenum superalloys hold a pivotal role within the energy sector, primarily within the

domain of power generation, where the construction of gas and steam turbines relies heavily on these advanced materials. These turbines serve as the beating heart of power plants, converting various energy sources into electricity, and their efficiency and reliability are paramount due to their impressive heat resistance, corrosion resistance, and mechanical strength, making them ideal candidates for critical components like turbine blades, rotors, and casings.

For instance, the Interior Department of United States has collaborated with various federal agencies to boost renewable energy generation on public lands and waters. This collaboration includes ambitious goals, such as achieving 30 gigawatts of offshore wind energy deployment by 2030, attaining 15 gigawatts of floating offshore wind capacity by 2035, aiming to authorize a minimum of 25 gigawatts of onshore renewable energy projects by 2025. These ambitious goals to increase renewable energy capacity in the country will raise the demand for molybdenum superalloys.

Impact of COVID-19

The COVID-19 pandemic significantly disrupted global supply chains, which reverberated in the United States molybdenum superalloy market and its essential raw materials. The production and distribution of molybdenum superalloys were hampered by delays and shortages resulting from factory shutdowns and transportation constraints. Lockdowns and economic downturns induced by the pandemic reduced demand in various industries of the United States, including construction in the chemical sector. Furthermore, infrastructure and construction projects that use molybdenum superalloys were often delayed or put on hold due to the pandemic, impacting the demand for these materials in the construction sector.

Impact of Russia-Ukraine War

The conflict between Russia and Ukraine had adverse consequences for the United States' supply of molybdenum superalloys since Russia served as a substantial source of raw nickel for the United States. In response to the ongoing conflict, the United States imposed import restrictions, which exacerbated the supply constraints for upstream nickel. This, in turn, drove the production costs of molybdenum superalloys, subsequently dampening procurement activities. Despite these facts, due to heightened investments in the United States defense projects prompted by the conflict and geopolitical instability, the demand for molybdenum superalloys increased in the country.

Key Players Landscape and Outlook

Significant manufacturers of molybdenum superalloys are strengthening their market presence by implementing expansion strategies. These strategies encompass establishing new facilities to cater to increasing demand and capitalize on market prospects.

For instance, the inauguration of Plansee USA's state-of-the-art Manufacturing Training Center took place in July 2022. The decision by Plansee USA to invest in an in-house training facility aligns with their commitment to fostering continuous development of their workforce and preparing for the challenges and opportunities of the future.

The U.S. molybdenum superalloy market is pivotal across critical sectors. These alloys are preferred for their resistance to corrosion and extreme conditions and are vital in defense, energy, infrastructure, and the chemical industry. Defense investments drive demand for jet engines and gas turbines. The energy sector seeks them for efficient power generation and large-scale infrastructure projects depending on their strength. In the chemical industry, their resistance is crucial, making the market poised for growth.

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