

# Dodecanedioic Acid Market Assessment, By Production [Synthetic, Biotech], By Application [Nylon, Adhesives, Powder Coatings, Lubricants, Others], By Region, Opportunities and Forecast, 2016-2030F

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# **Abstracts**

Global dodecanedioic acid market size was valued at USD 457.05 million in 2022, which is expected to grow to USD 659.99 million in 2030 with a CAGR of 4.7% during the forecast period between 2023 and 2030. The global dodecanedioic acid (DDDA) market is significantly influenced by its role as a vital intermediate chemical in the production of nylon.

The demand for nylon materials across various industries, including automotive, textiles, and packaging is a major driver of DDDA market. In the automotive sector, where lightweight, durable materials are highly sought after, DDDA's contribution to nylon-based components plays a crucial role in weight reduction and improved fuel efficiency. Furthermore, the textile industry values nylon's strength and durability, making it a preferred choice for sportswear, outdoor gear, and industrial applications, fueling the demand for DDDA.

The packaging industry's growth is driven by the rise of e-commerce and the need for efficient packaging solutions, further intensifying the demand for DDDA as it is integral in the creation of films, coatings, and barrier materials. DDDA finds extensive use in consumer goods, including textiles, apparel, and household items, catering to the consumer goods industry's quest for durable and versatile materials. Emerging markets, marked by expanding middle-class populations and increasing industrialization, serve as significant contributors of the global demand for nylon and related materials, thereby supporting the demand for DDDA.



Strong Demand from Automotive Sector to Raise the Requirement of Dodecanedioic Acid

Dodecanedioic acid (DDDA) plays a pivotal role in the automotive industry by enhancing adhesives used for structural bonding and sealants for creating air-tight and water-tight seals. These modifications result in improved strength, impact resistance, temperature stability, and adhesion, which are essential for vehicle assembly and compliance with strict safety and environmental regulations. Additionally, DDDA contributes to weight reduction, aiding in fuel efficiency and sustainability goals in the automotive sector.

For instance, overall auto sales in India witnessed a 20% raise on a year-on-year basis during September 2023. The strong performance of automotive sector across the globe increase the demand for engineering plastics, adhesives, and sealants, which in turn drives the demand for dodecanedioic acid.

High Performance of Nylon to Improve the Demand for Dodecanedioic Acid

The rising global demand for nylon along with its diverse range of applications across various industries is a key driver for the Dodecanedioic acid (DDDA) market. As industries such as textile, automotive, and packaging continue to expand and innovate, the need for advanced materials like nylon is expected to grow, contributing to the worldwide demand for its raw material, DDDA.

For instance, following a capacity expansion of 40,000 tons per year in 2020 by Invista Nylon Chemicals, the latest investment during August 2021 resulted in the rise of its plant's capacity to 400,000 tons per year. Expansion of nylon production by several manufacturers will further enhance nylon value chain globally and raise demand for dodecanedioic acid across the globe.

Rising Demand for Adhesives and Sealants to Drive the Dodecanedioic Acid Market

The rising demand for sealants and adhesives in various industries, including construction, automotive, electronics, and aerospace, led to a broader application base for DDDA in the market. DDDA's versatility makes it suitable for different sectors, as its adoption constantly expand.

For instance, in February 2022, to enhance its market-leading product line of thermal management encapsulants, adhesives, and gap fillers, Parker Lord broadened its range



of offerings for electric vehicle manufacturers. The expansion presently encompass new thermally conductive (TC) adhesives and one-component (1K) low-density gap fillers. Developments and increasing adhesives and sealants production across several countries to heighten dodecanedioic acid demand globally.

# Impact of COVID-19

The Dodecanedioic Acid (DDDA) market experienced significant disruption due to the outbreak of COVID-19. DDDA supply chains experienced disruptions, potentially leading to shortages and increased operational costs. In parallel, numerous industries, most notably automotive and textiles, underwent a reduction in production or temporary shutdowns in response to lockdowns and economic uncertainties which significantly diminished the demand for DDD. Furthermore, the pandemic's adverse impact extended to construction and infrastructure projects as they encountered delays and cancellations which affected the demand for DDDA within the construction sector. The situation resulted in deferred investments and a notable reduction in DDDA consumption in construction-related applications during the pandemic.

# Key Outlook

Butadiene, a major raw material of Dodecanedioic Acid is derived from crude oil or natural gas and highly subjected to price fluctuations, which leads to hinderance in the market growth of DDDA.

Dodecanedioic acid is highly preferred in manufacturing of engineering plastics due to its solvent free nature and minimal VOC emission, which aligns with ecofriendly targets and stringent regulation in several countries.

## Key Players Landscape and Outlook

Key manufacturers of dodecanedioic acid strategically align themselves with the expansion of downstream products like nylon, adhesives, and sealants. DDDA serves as a major raw material for these commodities, and the alignment allows these manufacturers to meet the growing demand for these versatile materials across various industries.

For instance, BASF has announced its plans to bolster polyamide 6,6 (Nylon-6) production in Freiburg, Germany. These planned investments are poised to facilitate the



growth of BASF's Nylon-6,6 business, which was acquired from Solvay. Given that Dodecanedioic acid serves as a crucial component in the production of nylon 6, this expansion is expected to have a positive impact on the dodecanedioic acid market.



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