

Global Nylon 6 Market Outlook to 2027

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Abstracts

Nylon 6 is a synthetic linear polyamide made from a monomer called caprolactam. It is one of the most extensively used polyamides across the globe. According to BlueQuark Research & Consulting, the global market for nylon 6 is expected to grow at a moderate rate during the forecasted period. Factor such as growing demand in the automotive sector from emerging economies like China, India, Russia, etc., growing demand from the packaging is expected to drive the Nylon 6 market during the forecast period. Moreover, increasing demand from the industrial segment owing to rising investment in industrial infrastructure, increasing efficiency of mass production, and diversity of goods and products further propel the growth for the nylon 6 market. However, the availability of substitutes is likely to restrain the global nylon 6 market growth during the forecast period.

Nylon 6 is produced in the form of filament yarns and staple fiber yarns for the manufacture of carpets, tire cords, apparel, hosiery, upholstery, seat belts, parachutes, ropes, and industrial cords serving various end-users like Electrical & Electronics, Textile, Industrial and Automotive Industries. However, the existence of substitutes has always hindered the growth of the market for nylon 6. Some of such substitutes are listed below.

Polybutylene terephthalate (PBT) is one type of polyester and serves as an alternative to nylon 6 with textile suppliers in Asia. PBT has lower prices with better stretch properties and has the ability to remain stiff. This will further reduce manufacturing costs in swimming clothes (by avoiding the use of elastane). PBT absorbs much less water than Nylon and has very good resistance to sunlight.

Nylon 6-6 (made from adipic acid and hexamethylene diamine) has better dimensional stability and a higher melting point. It has a lower water absorption rate when compared to Nylon 6 and has better chemical resistance towards acids. In 2018, the supply of



Nylon 6-6 had reduced due to lack of its precursor adiponitrile (ADN). In 2018, nylon 66 prices were up more than 50% from 18 months before. But later, Ascend Performance materials brought on 110 million pounds of ADN in 2017 and planned a 360 million pounds expansion by 2022. On 5th January 2021, Ascend Performance Materials announced the acquisition of France-based Eurostar Engineering Plastics to enhance its electrical and electronic (E&E) capabilities with a wide range of nylon 6,6, nylon 6, polybutylene terephthalate (PBT), and other products.

In some cases, modifications to the Nylon 6 structure can be made to get the desirable properties. Akro-Plastic GmbH, Niederzissen-based company developed Akromid B+, a special grade of Nylon 6. This modified Nylon 6 has some properties similar to Nylon 6-6, and the prices are between that of Nylon 6 and Nylon 6-6. Polypropylene is another thermoplastic polymer light in weight and has a high melting point. They are non-toxic and have good dielectric properties. Polypropylene usually lasts longer because it has good resistance to fatigue. It is economical when compared to Nylon 6 and can be used in packaging, automotive, and consumer industries. Due to its low melt viscosity, it is easy to flow and is majorly used in injection molding. In August 2019, Sumitomo Chemical had acquired Emas Plastik A.S. and its affiliated companies to further advance the global development of its polypropylene (PP) compound business. Sumitomo Chemical has made the Emas Group its consolidated subsidiaries. Polycarbonate can replace Nylon 6 in 3D printing. It is an important filament for 3D printing due to high glass transition temperature. So it is an ideal choice for high strength and functional components.

In June 2020, Invista announced that it had started construction on a China nylon plant. The USD 1.2 billion facilities are expected to come online during 2022. Moreover, the plant is expected to produce ADN, a key ingredient for the nylon 6, 6 polymers used in plastics, coatings, and apparel fibers.

The global Nylon 6 market is segmented on the basis of Type and End-user. The end-user segment is further segmented as Electrical & Electronics, Textile, Industrial, Automotive, and Others. In terms of type, reinforced nylon 6 is anticipated to witness the fastest growth rate in the global nylon 6 market. In terms of end-use, industrial applications dominated the global nylon market.

Automotive is one of the major end-user industries for nylon 6 and its compounds. Due to its excellent characteristics like chemical resistance, tensile strength, abrasion resistance, and heat resistance, among others. Nylon 6 finds its application in various parts of an automotive, including under the hood, chassis, interior, and exterior



applications. Nylon 6 offers fuel efficiency by reducing weight and lowering fuel emissions. In recent years, the usage of plastics in the transportation industry has increased significantly. Plastic is the second most commonly used material in vehicles after metals, with nearly 50% of the volume of modern cars made from plastic.

Polyamides are largely used in the transportation sector as they are highly water absorbent, have high mechanical properties, and are rigid in nature. Its applications in an automobile are found in gears, cams, bearings, and waterproof coatings. Automotive manufacturers are pursuing ways to reduce the weight of vehicles without compromising performance or safety by using plastic components to replace steel. The trend for lighter vehicles has increased the use of nylon 6. Reducing vehicle weight by 10%, i.e., around 0.1 tonnes, improves fuel efficiency by 6-8% and reduces greenhouse gas emissions by the equivalent of combusting more than 2.7 million gallons of gasoline over the life of the vehicle. Furthermore, lowering the overall weight of a vehicle by 10 kg can cut CO2 emissions by 1 g/km. Lighter vehicles are environmentally friendlier options that are essential for sustainable future development. Compounds reinforced with nylon 6 are being used for several metal replacement applications in the car engine components such as intake manifolds, gears, bearings, etc. The market for nylon 6 in the automotive industry is likely to grow at a significant rate owing to the ongoing growth in the adoption of various applications in automotive to reduce weight and increase efficiency.

Based on geography, the global Nylon 6 Market is segmented into Asia Pacific, North America, South America, Europe, and Middle East & Africa. Asia-Pacific continues to dominate the market during the forecast period. China has one of the largest markets in the Asia-Pacific region. Various government initiatives like, 'China Manufacturing 2025' is encouraging the use of energy-saving automobiles to promote electric vehicles. This is expected to drive the market in this region.

The United States is the world's largest economy. The country's GDP has decreased at an annual rate of 5% in the first quarter and 9.5% in the second quarter of 2020 due to the ongoing coronavirus pandemic. However, the economy expanded by an annualized 33.1% in Q3 2020. The United States is the world's second-largest market for vehicle sales and production. The automotive production in the country was severely affected by the imposed lockdown from March 2020 to June 2020. But the production value reached the previous normal. Moreover, with growing stringent emission norms, automakers have been shifting their vehicle production more towards electrification and making them lightweight, which is expected to further drive the studied market.



According to the U.S. Department of Energy, more than 244,000 EVs were sold in the United States in 2019. EV sales in the United States have doubled from 2017 to 2018, driven in part by federal tax incentives. The automotive sector contributes around 3 -3.5% to the overall GDP. The automotive industry spends approximately USD 18 billion every year on research and product development, out of which the industry funds 99% itself. The automotive industry consumes products from many other manufacturing sectors and is a significant driver of the 11.5% manufacturing contribution to GDP. The largest subsectors in the country's electronic manufacturing are computer and peripheral equipment manufacturing, semiconductor, and other electronic component manufacturing, followed by navigational, measuring, electromedical, and control instruments manufacturing. The electronics industry of the United States contributes about 3.7% to the country's GDP. States with higher than average contribution to GDP from electronic manufacturing include California, Oregon, Massachusetts, North Carolina, Minnesota, Arizona, Texas, Colorado, and Wisconsin. The covid-19 pandemic has hit the U.S. electronics manufacturing industry. The electronics manufacturing industry faces diverse challenges, including changing demand patterns, unclear and evolving operating restrictions, and abnormalities in supply chains.

In the year 2019 , the global Nylon 6 market was found to be fragmented during the forecast period. Some of the key players of the market are Honeywell International Inc , Royal DSM N.V , Lanxess , Clariant Corporation , Unitika Ltd. , and DOMO Chemicals , among others.

On 2nd Jan 2020, Grupa Azoty has extended its output of technical plastics further with the production launch at a new EUR 23.4 million compounding plant in southeastern Poland. The 50,000 metric tons per year unit, constructed together with German technology partner Akro-Plastik GmbH.

Our Global Nylon 6 market report provides deep insight into the current and future state of the Nylon 6 market across various regions. Also, the study comprehensively analyzes the Nylon 6 market by segments based on type (Standard Nylon 6, Reinforced Nylon 6), and by End-user (Electrical & Electronics, Textile, Industrial, Automotive, and Others) and, by Geography (Asia Pacific, North America, Europe, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 are influencing the market growth in detail. The study covers & includes emerging market trend, market developments, market opportunities, nylon 6 market size, nylon 6 sales, market analysis, market revenue, market dynamics, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of major companies, including their market share and



projects.



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