

# Caprolactam Market Expected to Witness a Significant Growth of USD 19.74 billion by 2029 | Exactitude Consultancy

*The caprolactam market is growing due to end-user demand, technological advancements, and sustainability.*

LUTON, BEDFORDSHIRE, UNITED KINGDOM, November 18, 2023 /EINPresswire.com/ -- The global [caprolactam market](#) is expected to grow at 4% CAGR from 2023 to 2029. It is expected to reach above USD 19.74 billion by 2029 from USD 15 billion in 2022.



Caprolactam is an organic chemical used in the manufacture of nylon 6 fibre and resins. Because of their high elasticity, tensile strength, chemical and oil resistance, and low moisture absorption, nylon 6 resin and fibres have increased in demand in the textile and automotive industries. Several automakers are substituting caprolactam for nylon 6 due to its high chemical and

temperature resistance. They are also used in electronic and electrical equipment such as switchgear, circuit breakers, contractors, and connections due to their lighter weight than metal tubes.

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The caprolactam market is expected to witness robust growth, driven by increasing demand in nylon production, expanding automotive and electronics sectors.”

*Exactitude Consultancy*

The growing demand for bio-based caprolactam in engineering plastics applications, as well as the need for lightweight automotive vehicles, are expected to drive the caprolactam market in the coming years. Chemical and oil resistance, high strength, flexibility, abrasion resistance, and low moisture absorption of nylon fibres and resins are

also expected to drive the market during the forecast period. Furthermore, rising demand for plastics in the automotive, construction, electrical, and electronics sectors, as well as the expanding automotive and electronics industries, are expected to drive market expansion in the coming years.

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Recent Developments:

- April 2023 – BASF and its partners constructed a seventh school in a rural location in Vietnam. Hieu Tu C Elementary School, Tieu Can district, Tra Vinh province, has a new facility. Two new classrooms and one playground will help about 100 kids each year. Since 2015, BASF and major partners have refurbished seven schools to promote Vietnam's educational growth.
- April 2022 – BASF received ISCC PLUS accreditation in order to broaden its VALERAS® portfolio for plastic additives. ISCC PLUS accreditation: Production utilizing a mass balance technique with renewable feedstock. Customers may select more sustainable antioxidants without sacrificing functional effectiveness.

Asia-Pacific is predicted to 45% dominate the caprolactam market due to fast industrialization.

As a result, many appliance and automobile manufacturing plants have been built, as well as increased demand for passenger vehicles in China and India. Additionally, rising demand for plastics in the automotive, construction, electrical and electronics industries, as well as a thriving textile industry, will drive market expansion in this sector.

North America and Europe are estimated to be the fastest-growing regions during the forecast period, owing to the rising need for lightweight materials, expanding coatings and film applications, and rising demand for lightweight automotive vehicles. During the projected period, Europe's caprolactam market is predicted to rise rapidly. The textile and fabric sector's strong manufacturing base, together with expanding domestic demand in Germany, Italy, France, and the United Kingdom, is expected to contribute to the rise of the caprolactam market throughout the projected period. Due to properties like as low moisture absorption and high mechanical strength, lightweight cars in the automobile sector replace metals with customized polymers.

Caprolactam Market Technological Trends

- Green and Sustainable Production: There has been a growing emphasis on developing more sustainable and environmentally friendly processes for caprolactam production. Companies are exploring innovative methods, such as bio-based or renewable sources of raw materials, to reduce the environmental impact of caprolactam manufacturing.
- Advanced Catalysts and Process Optimization: Research and development efforts focus on improving the efficiency of caprolactam synthesis. This includes the development of advanced

catalysts and optimization of manufacturing processes to enhance yield, reduce energy consumption, and minimize waste.

- **Recycling and Circular Economy:** With increasing awareness of environmental issues, there is a trend towards promoting a circular economy in the plastics industry. Efforts are being made to develop technologies for the recycling of nylon 6 and caprolactam, contributing to a more sustainable and closed-loop production cycle.
- **Digitalization and Industry 4.0:** The adoption of digital technologies and smart manufacturing practices, often referred to as Industry 4.0, is impacting the chemical industry, including caprolactam production. Sensors, data analytics, and automation are being used to optimize processes, improve efficiency, and reduce downtime.
- **Material Innovations:** Advancements in material science play a crucial role in the caprolactam market. Researchers are exploring new formulations and blends to enhance the performance characteristics of nylon 6, making it suitable for a broader range of applications.

#### Factors That Historically Have Influenced the Caprolactam Market

- **End-User Industries:** The demand for caprolactam is significantly influenced by end-user industries, particularly textiles and automotive. Economic trends and consumer demand in these sectors can impact the overall demand for caprolactam.
- **Raw Material Prices:** Caprolactam is derived from cyclohexanone, which, in turn, is produced from phenol and cyclohexane. Fluctuations in the prices of these raw materials can impact the production costs of caprolactam, influencing market prices.
- **Global Economic Conditions:** The caprolactam market is sensitive to global economic conditions. Economic downturns can lead to reduced consumer spending, affecting industries like textiles and automotive, thereby influencing the demand for caprolactam.
- **Environmental and Regulatory Factors:** Environmental regulations and sustainability initiatives can impact the caprolactam market. Stringent regulations related to emissions, waste disposal, and product safety may lead to changes in production processes and affect market dynamics.
- **Technological Advancements:** Innovations in caprolactam production processes, such as more efficient and sustainable manufacturing methods, can impact the market. Additionally, advancements in downstream applications, such as improved formulations of nylon 6, can influence demand.

#### Caprolactam Market Players

- AdvanSix Inc.

- Alpek S.A.B. de C.V.
- The Aquafil Group
- BASF SE
- Capro Co.
- China Petrochemical Development Corporation
- Domo Chemicals
- GrupaAzoty
- Gujarat State Fertilizers & Chemicals Limited
- Highsun Group
- KuibyshevAzot PJSC
- Lanxess AG
- Luxi Chemical Group Co.

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#### Caprolactam Key Market Segments

##### Caprolactam Market by Raw material, 2023-2029, (USD Billion), (Kilotons)

- Phenol
- Cyclohexane

##### Caprolactam Market by End Product, 2023-2029, (USD Billion), (Kilotons)

- Nylon 6 Resin
- Nylon 6 Fibers
- Other End Products

##### Caprolactam Market by Application, 2023-2029, (USD Billion), (Kilotons)

- Engineering Resins
- Films
- Industrial Yarns
- Textile
- Carpets
- Others

##### Caprolactam Market by End User Industry, 2023-2029, (USD Billion), (Kilotons)

- Textile Yarn
- Textile Stiffeners

- Film Coatings
- Synthetic Leather
- Plastics
- Plasticizers
- Others

## Market Dynamics

### Drivers:

- **Growing Demand for Nylon 6:** Caprolactam is a key raw material for the production of nylon 6, which is widely used in various industries, including textiles, automotive, and packaging. The increasing demand for nylon 6 in these applications can drive the caprolactam market.
- **Rising Automotive Production:** The automotive industry is a major consumer of nylon 6, as it is used in the manufacturing of various components such as engine components, fuel systems, and interior materials. Therefore, an increase in automotive production can boost the demand for caprolactam.
- **Innovations in Material Science:** Advances in material science and the development of new applications for caprolactam-based products can drive market growth. For instance, the use of nylon 6 in 3D printing and other emerging technologies can create new opportunities.

### Restraints:

- **Volatility in Raw Material Prices:** Caprolactam is derived from cyclohexanone, which is derived from benzene and other petrochemicals. Fluctuations in the prices of these raw materials can impact the cost of caprolactam production, affecting profit margins for manufacturers.
- **Environmental Concerns:** The traditional production process of caprolactam involves the use of certain chemicals and can generate waste by-products. Increasing environmental regulations and consumer awareness about sustainability may pose challenges to the industry.

### Opportunities:

- **Growing Emerging Markets:** As developing economies industrialize, there is often an increased demand for materials like caprolactam. The expansion of manufacturing sectors in emerging markets presents opportunities for caprolactam producers.
- **Shift towards Bio-Based Caprolactam:** The development of bio-based caprolactam from renewable resources presents an opportunity for the industry to address environmental concerns and tap into the growing market for sustainable products.

### Challenges:

- **Competitive Landscape:** The caprolactam market can be highly competitive, and companies may face challenges in maintaining or increasing market share. This competition can lead to price wars and margin pressure.
- **Regulatory Compliance:** Adhering to evolving environmental regulations and standards can be challenging for caprolactam manufacturers. Compliance with stricter norms may require significant investments in technology and processes.

### Key Question Answered

1. What is the expected growth rate of the caprolactam market over the next 7 years?
2. What are the end-user industries driving demand for the market and what is their outlook?
3. What are the opportunities for growth in emerging markets such as Asia-Pacific, the Middle East, and Africa?
4. How is the economic environment affecting the caprolactam market, including factors such as interest rates, inflation, and exchange rates?
5. What is the expected impact of government policies and regulations on the caprolactam market?
6. What are the key drivers of growth in the caprolactam market?
7. Who are the market's major players, and what is their market share?
8. What are the caprolactam market's distribution channels and supply chain dynamics?

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