

Ultra-high Molecular Weight Polyethylene - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The Ultra-high Molecular Weight Polyethylene Market is expected to register a CAGR of greater than 6% during the forecast period.

Ultra-high molecular weight polyethylene is used mainly to manufacture components of the automobile, aerospace, and defense industries. COVID-19 has badly impacted the automobile industry. According to the OICA (International Organization of Motor Vehicle Manufacturers), the global production of vehicles in the third quarter of 2020 is around 50 million, a significant decrease compared to the production in the third quarter of 2019, which was around 65 million. However, the outbreak of the COVID-19 pandemic has been increasing the need for medical assistance due to the increasing number of patients globally, thereby stimulating the UHMWPE market. According to the World Population Prospects 2019 (United Nations, 2019), by 2050, one in six people in the world will be over the age of 65, up from one in 11 in 2019. Globally, there were 703 million older persons aged 65 or over in 2019, and the life expectancy is also estimated to be 72.63 years by 2020, which may bring the number of people aged 65 years and more to over 1.5 billion by 2050. This scenario is another factor, which has been boosting the medical sector, thus increasing the demand for UHMWPE.

Key Highlights

- Over the medium term, increasing applications for high-performance polymers and growing demand from the medical sector are driving the market growth.
- On the flip side, ultra-high molecular weight polyethylene has a low melting point, UHMWPE is not suitable for certain heavy load applications, and the impact of COVID-19, which, in turn, is expected to hinder the market growth.
- North America dominated the market with a significant share, and Asia-Pacific is estimated to expand at a healthy rate during the forecast period.

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Ultra-High Molecular Weight Polyethylene Market Trends

Growing Demand from the Automobile and Defense Sectors

- Ultra-high molecular weight polyethylene (UHMWPE) is a high-performance thermoplastic polymer that has a very high molecular density. It has been majorly used for automobiles, ballistic protection, medical, and production of various machined parts.
- The demand for the UHMWPE from the automobile industry has been growing because of its properties. UHMWPE is being used in automobile parts such as valves, pistons, gears, bearings, and wear strips.
- However, due to the COVID-19 impact, the automotive industry has also faced a decline in production and sales and thus decreased the demand for UHMWPE. According to the OICA, the global production of vehicles in the third quarter of 2020 was around 50 million, a significant decrease compared to the production in the third quarter of 2019, which was around 65 million.
- The properties of UHMWPE include sliding abrasion resistance, high impact resistance, good chemical resistance, energy absorption, and sound-dampening, and excellent dielectric and insulating properties.
- Due to these outstanding properties, UHMWPE is also being used for manufacturing defense components. The demand for UHMWPE has been increasing because of the growing and upgrading defense units in all the countries.
- Recently, the outbreak of COVID-19 in all regions is expected to decrease the demand for UHMWPE from the manufacturing and other end-user industries in the short term.
- Increasing applications for high-performance polymers in automobiles and technological advancements in the military sector are driving the demand for ultra-high molecular weight polyethylene through the years to come.

Asia-Pacific Region to Dominate the Market

- Asia-Pacific is expected to dominate the global market owing to the highly developed automobile sector in China, Korea, Japan, and India, coupled with the continuous investments done in the region to advance the medical sector through the years.
- Recently, UHMWPE is majorly being used in orthopedic applications because of its properties. The expanding medical sector in Asia-Pacific is one of the reasons leading to an increase in the demand for ultra-high molecular weight polyethylene (UHMWPE).
- UHMWPE is also being used in mechanical equipment. China has mechanical component manufacturing plants, and also rapid industrialization in Asia-Pacific is expected to increase the demand for the UHMWPE in the coming years.
- According to the Organisation Internationale des Constructeurs d'Automobiles (OICA), Asia-Pacific leads global automobile production. China is the largest producer of automobiles, and China alone produced 2,57,20,665 vehicles in 2019.
- Furthermore, the Chinese aircraft industry depicted significant growth over the years. According to Boeing, China is estimated to require around 7,600 new commercial aircraft, valued at USD 1.2 trillion, over the next two decades.
- China has the world's largest electronics production base. Electronic products, such as smartphones, OLED TVs, tablets, wires, cables, and earphones, recorded the highest growth in the electronics segment. The country serves not only domestic demand for electronics but also exports electronic output to other countries.
- According to the National Bureau of Statistics of China, in December 2020, retail sales of household appliances and consumer electronics in China had amounted to about CNY 100 billion.
- The impact of COVID-19 across the world resulted in the lockdown of various manufacturing activities. Due to this, all production units have been stopped for a brief period. Hence, the demand for UHMWPE in the automotive sector is estimated to have decreased during this period.
- Also, the growing paper, food and beverage, and chemical industries in Asia-Pacific are the reasons to increase the demand for

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UHMWPE in various applications.

- The continuous growth in the medical sector, increasing demand from automobile and aerospace sectors, and other end-user industries are expected to drive the market for ultra-high molecular weight polyethylene through the years to come.

Ultra-High Molecular Weight Polyethylene Industry Overview

The ultra-high molecular weight polyethylene market is partially consolidated in nature, with a few major players occupying a significant portion of the market. Some of the major companies are Asahi Kasei Advance Corporation, Braskem, Mitsui Chemicals Inc., LyondellBasell Industries Holdings BV, and Celanese Corporation, among others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

Table of Contents:

1 INTRODUCTION

- 1.1 Study Assumptions
- 1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET DYNAMICS

4.1 Drivers

- 4.1.1 Increasing Applications of High-performance Polymers
- 4.1.2 Growing Demand from the Medical Sector

4.2 Restraints

- 4.2.1 Low Melting Point and Unsuitable for High Load Applications
- 4.2.2 Impact of the COVID-19 Outbreak on the Market

4.3 Industry Value Chain Analysis

4.4 Porter's Five Forces Analysis

- 4.4.1 Threat of New Entrants
- 4.4.2 Bargaining Power of Buyers
- 4.4.3 Bargaining Power of Suppliers
- 4.4.4 Threat of Substitute Products
- 4.4.5 Degree of Competition

5 MARKET SEGMENTATION

5.1 End-user Industry

- 5.1.1 Automotive
- 5.1.2 Aerospace and Defense
- 5.1.3 Medical
- 5.1.4 Chemical
- 5.1.5 Electronics

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- 5.1.6 Other End-user Industries
- 5.2 Geography
 - 5.2.1 Asia-Pacific
 - 5.2.1.1 China
 - 5.2.1.2 India
 - 5.2.1.3 Japan
 - 5.2.1.4 South Korea
 - 5.2.1.5 Rest of Asia-Pacific
 - 5.2.2 North America
 - 5.2.2.1 United States
 - 5.2.2.2 Canada
 - 5.2.2.3 Mexico
 - 5.2.3 Europe
 - 5.2.3.1 Germany
 - 5.2.3.2 United Kingdom
 - 5.2.3.3 France
 - 5.2.3.4 Italy
 - 5.2.3.5 Rest of Europe
 - 5.2.4 South America
 - 5.2.4.1 Brazil
 - 5.2.4.2 Argentina
 - 5.2.4.3 Rest of South America
 - 5.2.5 Middle-East and Africa
 - 5.2.5.1 Saudi Arabia
 - 5.2.5.2 South Africa
 - 5.2.5.3 Rest of Middle-East and Africa

6 COMPETITIVE LANDSCAPE

- 6.1 Mergers and Acquisitions, Joint Ventures, Collaborations, and Agreements
- 6.2 Market Share (%)**/Ranking Analysis
- 6.3 Strategies Adopted by Leading Players
- 6.4 Company Profiles
 - 6.4.1 Asahi Kasei Advance Corporation
 - 6.4.2 Braskem
 - 6.4.3 Celanese Corporation
 - 6.4.4 DSM
 - 6.4.5 Rochling
 - 6.4.6 Korea Petrochemical Ind Co. Ltd
 - 6.4.7 LyondellBasell Industries Holdings BV
 - 6.4.8 Mitsui Chemicals Inc.
 - 6.4.9 Teijin Aramid BV
 - 6.4.10 TOYOBO CO. LTD

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

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