

Epoxy Resins Market Assessment, By Form [Solid, Liquid], By Type [Bisphenol, Aliphatic, Novolac, Halogenated and Others], By Application [Coatings, Flooring, Concrete Restoration, Crack Repair and Others], By End-user Industry [Construction, Automotive, Wind Power, Aerospace, Marine and others], By Region, Opportunities, and Forecast, 2016-2030F

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Abstracts

Epoxy resin market size was valued at USD 15.05 billion in 2022, which is expected to grow to USD 23.72 billion in 2030 with a CAGR of 5.85% during the forecast period between 2023 and 2030. The automotive industry has been a pivotal driver in the substantial growth and expansion of the epoxy resin market. Epoxy resins have been used in various automotive components, including composites, coatings, and adhesives, due to the growing expansion of the automotive industry along with an increase in demand for lightweight and high-performance materials. The use of epoxy resins in the automotive industry is likely to increase further as consumer demand for fuel-efficient and environmentally friendly vehicles.

Epoxy resins are frequently used in parts like circuit boards, semiconductors, and electrical encapsulation in the electronics and electrical industry. Epoxy resins are frequently used in the electrical and electronics industry which is fueled by the rising consumer electronics demand and technological advancements. Additionally, the market for epoxy resin has benefited from the push of renewable energy sources, particularly from the wind energy sector. Epoxy resins are essential for producing wind turbine blades because they offer the necessary durability, resistance to the elements,

and strength. The demand for epoxy resins in the wind energy industry is anticipated to increase significantly as the world continues to put more emphasis on sustainable energy solutions.

Expanding Electrical Vehicle Sector

Epoxy resins have many essential uses in EVs, including in battery packs where they act as encapsulation materials to protect delicate lithium-ion battery cells and promote longevity. Epoxy resins' high thermal resistance helps to dissipate heat during battery operation, avoiding overheating problems. Additionally, epoxy-based composites are frequently used in EV parts like body panels, chassis, and other structural pieces, providing a lightweight yet durable alternative to conventional materials and enhancing the overall performance and efficiency of the vehicle. In 2022, sales of electric vehicles increased by 15% and 55%, respectively, in Europe and the United States. This kind of expansion of EVs is evident throughout several other countries providing a solid demand growth for epoxy resin globally.

Demand Call from the Asia-Pacific

Asia-pacific is one of the most densely populated regions globally. The global population crossed the staggering figure of 8 billion in 2022 out of which the Asia-pacific region contributed 2.6 billion which is 32.5% of the worldwide population. This leads to an increasing demand for housing in these regions which means an increased usage of paints and coatings leading to a greater demand for epoxy resins in the market.

Additionally, the defense industry in countries such as India is on the rise. The expenditure and investments made in developing the country's defense pillars are seeing a rising trend. In the Union Budget for the year 2023-24, presented to the parliament by the finance minister of India Nirmala Sitharaman on 1st of February 2023 the allocations for the Ministry of defense were about USD 72,963.6 million (INR 5,93,537.64 crores) which was an increment of 13% from the previous financial year. The rise in defense investments will lead to an increase in demand from various end-user sectors such as marine and aerospace.

Strong Demand from Wind Energy Sector

Due to high strength, long lifespan, and resistance to harsh environmental conditions, epoxy resins are essential in producing wind turbine blades. The demand for epoxy resins has increased because of the increased emphasis on renewable energy sources

in several countries.

The U.S. Wind Turbine Database (USWTDB) has more than 70,800 turbines as of January 2022. All of these wind turbines have been built since 1980 in over 1,500 wind power plants located in at least 44 states of United States (plus Puerto Rico and Guam). A total of 380 billion kilowatt hours (kWh) of electricity was produced from wind energy in the United States in 2021, up from a little over 6 billion kWh in 2000. 9.2% of all utility-scale electricity produced in the United States in 2021 came from wind turbines.

For more than ten years, China has been the world's largest and fastest-growing producer of renewable energy. Still, since 2021, it has sharply increased its lead over rival nations by accelerating the roll out of wind capacity. According to research from think tank Ember, China increased its wind generation capacity in the last two years more than it had in the preceding seven, and in 2022 it generated 46% more wind power than all of Europe, the second largest wind generation market. The average yearly growth in China's wind capacity in the years 2021 and 2022 was 178.6 terawatt hours (TWh), or 350% greater than the average annual growth from 2015 through 2020. These above-mentioned factors have led to an increasing demand for epoxy resins from the wind energy generations sector.

Impact of COVID-19

COVID 19 had a negative impact on the epoxy resins market. The COVID-19 outbreak caused supply chain disruptions, production halts and manufacturing activity interruptions, all of which had a detrimental effect on the epoxy resins market in 2020. In addition, several end-use industries, such as the automotive, industrial, and others, closed their operations, which decreased the need for epoxy resins in 2020. Several end-user industries like automotive, furniture, appliances, and many more were shut down due to COVID-19 which led to a decrease in the demand for epoxy resins.

Impact of Russia-Ukraine War

Russia-Ukraine led to increase in the epoxy resin requirement globally. Energy prices skyrocketed immediately after the invasion, reaching a 20% increase for 5 straight months. The war helped realize the world's unhealthy dependence on fossil fuel consumption including the price and resource volatility come into sharp focus and accentuated on the dire need to shift to renewable sources of energy of which wind generation forms a major part. Almost 30-billion-cubic-meter natural gas shortage affected the European Union. Due to various factors coming together because of the

war, there have been extensive government interventions to safeguard consumers and industries by examining how they can use policy to expedite a clean energy transition. The Inflation Reduction Act in the United States, the REPowerEU plan in Europe, and the GX green energy transformation program in Japan are a few examples of government initiatives. This further increased the demand for epoxy resins from the wind energy generation sector.

Key Players Landscape and Outlook

Major players have been actively engaging in significant business acquisitions on the epoxy resin market. By acquiring other companies, these well-known industry players have shown that they take a strategic approach to growth.

For Instance, Westlake Chemical Corporation and Hexoin Inc. had a binding agreement, according to the company's announcement. Westlake Chemical Corporation purchased the global epoxy business of Hexion Inc. for about USD 1.2 billion during November 2021.

Additionally, the acquisition of the Resins & Functional Materials business (RFM) by Covestro from Royal DSM in the Netherlands was successful, during April 2021.

The market for epoxy resin is anticipated to continue to grow positively, supported by the expansion of end-use sectors like construction, automotive, electronics, and aerospace globally. Additionally, it is anticipated that increased environmental awareness will increase the demand for eco-friendly epoxy resins. In the upcoming years, technological developments and ongoing R&D initiatives will probably result in the introduction of novel formulations, extending the range of possible applications.

Contents

1. RESEARCH METHODOLOGY

2. PROJECT SCOPE & DEFINITIONS

3. IMPACT OF COVID-19 ON EPOXY RESIN MARKET

4. IMPACT OF RUSSIA-UKRAINE WAR

5. EXECUTIVE SUMMARY

6. VOICE OF CUSTOMER

6.1. Market Awareness and Product Information

6.2. Brand Awareness and Loyalty

6.3. Factors Considered in Purchase Decision

6.3.1. Brand Name

6.3.2. Quality

6.3.3. Quantity

6.3.4. Price

6.3.5. Product Specification

6.3.6. Application Specification

6.3.7. Shelf-Life

6.3.8. Availability of Product

6.4. Frequency of Purchase

6.5. Medium of Purchase

7. EPOXY RESIN MARKET OUTLOOK, 2016-2030F

7.1. Market Size & Forecast

7.1.1. By Value

7.1.2. By Volume

7.2. By Form

7.2.1. Solid

7.2.2. Liquid

7.3. By Type

7.3.1. Bisphenol

7.3.2. Aliphatic

- 7.3.3. Novolac
- 7.3.4. Halogenated
- 7.3.5. Others
- 7.4. By Application
 - 7.4.1. Coatings
 - 7.4.2. Flooring
 - 7.4.3. Concrete Restoration
 - 7.4.4. Crack Repair
 - 7.4.5. Others
- 7.5. By End-use Industry
 - 7.5.1. Construction
 - 7.5.2. Automotive
 - 7.5.3. Wind Power
 - 7.5.4. Aerospace
 - 7.5.5. Marine
 - 7.5.6. Others
- 7.6. By Region
 - 7.6.1. North America
 - 7.6.2. Europe
 - 7.6.3. South America
 - 7.6.4. Asia-Pacific
 - 7.6.5. Middle East and Africa

8. EPOXY RESIN MARKET OUTLOOK, BY REGION, 2016-2030F

- 8.1. North America*
 - 8.1.1. By Form
 - 8.1.1.1. Solid
 - 8.1.1.2. Liquid
 - 8.1.2. By Type
 - 8.1.2.1. Bisphenol
 - 8.1.2.2. Aliphatic
 - 8.1.2.3. Novolac
 - 8.1.2.4. Halogenated
 - 8.1.2.5. Others
 - 8.1.3. By Application
 - 8.1.3.1. Coatings
 - 8.1.3.2. Flooring
 - 8.1.3.3. Concrete Restoration

8.1.3.4. Crack Repair

8.1.3.5. Others

8.1.4. By End-use Industry

8.1.4.1. Construction

8.1.4.2. Automotive

8.1.4.3. Wind Power

8.1.4.4. Aerospace

8.1.4.5. Marine

8.1.4.6. Others

8.1.5. United States*

8.1.5.1. By Form

8.1.5.1.1. Solid

8.1.5.1.2. Liquid

8.1.5.2. By Type

8.1.5.2.1. Bisphenol

8.1.5.2.2. Aliphatic

8.1.5.2.3. Novolac

8.1.5.2.4. Halogenated

8.1.5.2.5. Others

8.1.5.3. By Application

8.1.5.3.1. Coatings

8.1.5.3.2. Flooring

8.1.5.3.3. Concrete Restoration

8.1.5.3.4. Crack Repair

8.1.5.3.5. Others

8.1.5.4. By End-use Industry

8.1.5.4.1. Construction

8.1.5.4.2. Automotive

8.1.5.4.3. Wind Power

8.1.5.4.4. Aerospace

8.1.5.4.5. Marine

8.1.5.4.6. Others

8.1.6. Canada

8.1.7. Mexico

*All segments will be provided for all regions and countries covered

8.2. Europe

8.2.1. Germany

8.2.2. France

8.2.3. Italy

- 8.2.4. United Kingdom
- 8.2.5. Russia
- 8.2.6. Netherlands
- 8.2.7. Spain
- 8.2.8. Turkey
- 8.2.9. Poland
- 8.3. South America
 - 8.3.1. Brazil
 - 8.3.2. Argentina
- 8.4. Asia-Pacific
 - 8.4.1. India
 - 8.4.2. China
 - 8.4.3. Japan
 - 8.4.4. Australia
 - 8.4.5. Vietnam
 - 8.4.6. South Korea
 - 8.4.7. Indonesia
 - 8.4.8. Philippines
- 8.5. Middle East & Africa
 - 8.5.1. Saudi Arabia
 - 8.5.2. UAE
 - 8.5.3. South Africa

9. SUPPLY SIDE ANALYSIS

- 9.1. Capacity, By Company
- 9.2. Production, By Company
- 9.3. Operating Efficiency, By Company
- 9.4. Key Plant Locations (Up to 25)

10. MARKET MAPPING, 2022

- 10.1. By Form
- 10.2. By Type
- 10.3. By Application
- 10.4. By End-use Industry
- 10.5. By Region

11. MACRO ENVIRONMENT AND INDUSTRY STRUCTURE

- 11.1. Supply Demand Analysis
- 11.2. Import Export Analysis – Volume and Value
- 11.3. Supply/Value Chain Analysis
- 11.4. PESTEL Analysis
 - 11.4.1. Political Factors
 - 11.4.2. Economic System
 - 11.4.3. Social Implications
 - 11.4.4. Technological Advancements
 - 11.4.5. Environmental Impacts
 - 11.4.6. Legal Compliances and Regulatory Policies (Statutory Bodies Included)
- 11.5. Porter's Five Forces Analysis
 - 11.5.1. Supplier Power
 - 11.5.2. Buyer Power
 - 11.5.3. Substitution Threat
 - 11.5.4. Threat from New Entrant
 - 11.5.5. Competitive Rivalry

12. MARKET DYNAMICS

- 12.1. Growth Drivers
- 12.2. Growth Inhibitors (Challenges, Restraints)

13. KEY PLAYERS LANDSCAPE

- 13.1. Competition Matrix of Top Five Market Leaders
- 13.2. Market Revenue Analysis of Top Five Market Leaders (in %, 2022)
- 13.3. Mergers and Acquisitions/Joint Ventures (If Applicable)
- 13.4. SWOT Analysis (For Five Market Players)
- 13.5. Patent Analysis (If Applicable)

14. PRICING ANALYSIS

15. CASE STUDIES

16. KEY PLAYERS OUTLOOK

- 16.1. 3M
 - 16.1.1. Company Details

- 16.1.2. Key Management Personnel
- 16.1.3. Products & Services
- 16.1.4. Financials (As reported)
- 16.1.5. Key Market Focus & Geographical Presence
- 16.1.6. Recent Developments
- 16.2. Aditya Birla Management Corp. Pvt. Ltd.
- 16.3. Atul Ltd.
- 16.4. BASF SE
- 16.5. Solvay
- 16.6. Huntsman International LLC.
- 16.7. Kukdo Chemical Co., Ltd.
- 16.8. Olin Corporation
- 16.9. Sika AG
- 16.10. Nan Ya Plastics Corp.
- 16.11. China Petroleum and Chemical Corporation (SINOPEC)
- 16.12. Hexion (acquired by Westlake)
- 16.13. Kolon Industries Inc.

*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

17. STRATEGIC RECOMMENDATIONS

18. ABOUT US & DISCLAIMER

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