

Polyvinylidene Fluoride Market Report and Forecast 2025-2034

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Report description:

The global polyvinylidene fluoride market value reached a value of about USD 1000.54 Million in 2024. The industry is further expected to grow at a CAGR of 4.45% in the forecast period of 2025-2034 to reach a value of around USD 1546.39 Million by 2034.

Global Polyvinylidene Fluoride Market Growth

Polyvinylidene fluoride, also known as polyvinylidene difluoride (PVDF), is a homopolymer made from the polymerisation of vinylidene difluoride. This thermoplastic is utilised in the production of pipes, plates, and sheets, among others. PVDF is also non-reactive to hydrocarbons, acids, weak bases, oxidants, aromatic solvents, and aliphatic solvents. It provides low friction and fights chemical attacks, abrasion, and heat.

The polyvinylidene fluoride market dynamics and trends are being driven by its growing application in various sectors, including oil and gas, defence, construction, automotive, chemical, and electrical industries.

Global Polyvinylidene Fluoride Market Analysis

The heightened demand for polyvinylidene fluoride in the electrical and electronics industry, owing to its strong resistance to abrasion and heat is estimated to contribute to the growth of the polyvinylidene fluoride industry. In this regard, polyvinylidene fluoride finds increased usage in batteries and lithium-ion batteries as an insulating material.

Polyvinylidene coatings are extensively utilized in roofing within the construction sector due to their weather-resistant properties, which improve infrastructure durability. These factors are expected to contribute to the polyvinylidene fluoride industry growth.

Global Polyvinylidene Fluoride Industry Outlook

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According to the International Energy Agency, the surging demand for electric vehicle (EV) batteries is driving a substantial increase in the demand for critical metals, especially lithium, cobalt, and nickel. In 2023, battery demand for lithium surged by over 30% from the previous year, reaching approximately 140 kt, which represents 85% of the total lithium demand. Cobalt saw a 15% increase in battery demand, totalling 150 kt and comprising 70% of its overall demand. Nickel's battery demand, while accounting for over 10% of the total demand, escalated by nearly 30% to approximately 370 kt. In production metrics, Europe and the United States reached capacities of 110 GWh and 70 GWh of EV batteries, respectively, in 2023. Europe produced 2.5 million EVs, with Germany leading at nearly 50% of the continent's production, followed by France and Spain, each contributing just under 10%. Poland dominated battery production in Europe, accounting for 60% of the output, while Hungary followed with almost 30%. The United States manufactured 1.2 million electric vehicles, highlighting the region's expanding EV production capabilities, and boosting the polyvinylidene fluoride market revenue in the automotive sector. PVDF is used in exterior coatings to improve durability and resistance to weathering, UV radiation, and chemical exposure.

According to the Semiconductor Industry Association (SIA), global semiconductor sales surged to USD49.1 billion in May 2024, marking a substantial 19.3% year-over-year increase from USD41.2 billion in May 2023 and a 4.1% rise from USD47.2 billion in April 2024. This growth reflects a robust recovery in the semiconductor sector. In the Americas, sales soared by 43.6% year-over-year and by 6.5% month-over-month. China also saw significant growth, with a 24.2% increase year-over-year and a 5.0% rise month-over-month. The Asia Pacific/All Other region saw a 13.8% increase year-over-year and a 3.0% rise month-over-month, contributing to the growth of the polyvinylidene fluoride industry revenue as PVDF is utilised in semiconductor devices as an insulating material due to its superior dielectric properties and strong resistance to heat and chemicals.

Polyvinylidene fluoride (PVDF) offers excellent resistance to weathering, chemicals, and UV light, making it ideal for demanding applications in various industries.

- Its use spans multiple sectors, including construction, automotive, and chemicals, due to its superior performance and adaptability.

- Growing industrial and infrastructural developments drive consistent polyvinylidene fluoride market demand.

PVDF is relatively expensive compared to other polymers, which can limit its adoption in cost-sensitive applications.

- The complexity of PVDF production may limit the number of manufacturers, potentially affecting market supply and competition.

- Some industries may be unaware of PVDF's benefits, impacting its broader acceptance.

Increased use in emerging sectors like renewable energy and advanced electronics presents growth opportunities in the polyvinylidene fluoride market.

- Innovations in PVDF processing and applications can open new markets and enhance product offerings.

- Rapid urbanisation and infrastructure development increase demand for durable materials like PVDF.

Economic downturns can impact industrial spending, affecting PVDF demand.

- Emerging materials with similar or superior properties could challenge PVDF's market share.

- Changes in environmental regulations and standards might affect the production and usage of PVDF.

Key Players in the Polyvinylidene Fluoride Market and Their Strategic Initiatives

Arkema S.A.:

- Expansion of PVDF production capacity.
- Development of sustainable PVDF solutions to capture the polyvinylidene fluoride market opportunities.

Dyneon LLC (3M company):

- Focus on high-performance materials.
- Investments in R&D for innovative applications.

Kureha Corporation:

- Enhancement of production facilities.
- Introduction of specialised PVDF grades to meet the growing demand of the polyvinylidene fluoride market.

Solvay S.A.:

- Diversification of PVDF product portfolio.
- Commitment to eco-friendly manufacturing processes.

Global Polyvinylidene Fluoride Industry Segmentation

"Global Polyvinylidene Fluoride Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

Market Breakup by Application:

- Pipes and Fittings
- Films and Sheets
- Wires and Semiconductor Processing
- Coating
- Membranes
- Li-ion Batteries

Market Breakup by End-User Industry:

- Oil and Gas
- Electrical and Electronics
- Chemical Processing
- Automotive and Processing
- Aerospace and Defence

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- Building and Construction
- Others

Market Breakup by Region:

- North America
- Europe
- Asia Pacific
- Latin America
- Middle East and Africa

Polyvinylidene Fluoride Market Share

The increasing demand for renewable energy resources is resulted in increased expenditure worldwide, which is projected to augment the polyvinylidene fluoride demand growth. In this regard, increased research and studies are being conducted to analyse the use of polyvinylidene fluoride-based gel polymer electrolyte to be used in dye sensitized solar cells. In addition, the rapid technological advancements in polyvinylidene fluoride are likely to stimulate the market in biomedical and energy harvesting fields.

For instance, the growing number of research studies are being conducted to analyse the use of polyvinylidene fluoride as a biomaterial in medical textiles. These factors are expected to provide a thrust to the overall growth of the polyvinylidene fluoride industry in the forecast period.

Leading Companies in the Polyvinylidene Fluoride Market

The companies specialise in producing high-performance fluoropolymers, including polyvinylidene fluoride (PVDF) and fluoropolymer coatings. Their advanced materials are used in diverse applications such as chemical processing, electronics, and automotive industries, offering superior chemical resistance, durability, and performance.

- Arkema S.A.
- Dyneon LLC (3M company)
- Kureha Corporation
- Solvay S.A.
- Compagnie de Saint-Gobain S.A.
- RTP Company, Inc.
- Saudi Basic Industries Corporation
- Shanghai Ofluorine Co. Ltd

Polyvinylidene Fluoride Market Report Snapshots

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Polyvinylidene Fluoride Market Size

Polyvinylidene Fluoride Market Growth

Polyvinylidene Fluoride Market Analysis

Polyvinylidene Fluoride Market Share

Polyvinylidene Fluoride Companies

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