Propylene Glycol Market Size and Share Outlook - Forecast Trends and Growth Analysis Report (2025-2034)

Market Report | 2025-08-13 | 180 pages | EMR Inc.

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Report description:

The propylene glycol market attained a volume of 3.09 MMT as of 2024 and is anticipated to grow at a CAGR of 4.40% during the forecast period of 2025 to 2034. One of the main drivers of the propylene glycol market is the growth of the pharmaceutical and personal care industries. Propylene glycol finds extensive application as a solvent, emulsifier, and humectant in different formulations such as oral and topical drugs, skin care products, and cosmetics. The market is thus expected to reach a volume of nearly 4.75 MMT by 2034.

Propylene Glycol Market Growth

The propylene glycol market is experiencing significant growth as a result of the increasing trend toward bio-based substitutes. As sustainability becomes an integral theme across sectors, producers are increasingly using bio-derived propylene glycol produced using renewable feedstock materials like glycerin and corn glucose. These substitutes cause a drastic decrease in greenhouse gas emissions and complement international environmental initiatives. Further, the personal care and cosmetics sector is driving market growth through propylene glycol's moisturizing and stabilizing properties, which are vital in items such as shampoos, creams, and lotions. The increasing need for clean-label and environmentally friendly personal care products has also driven the use of propylene glycol, thereby boosting the growth of propylene glycol market.

Expansion in the food and pharmaceutical industries is another significant driver. In pharmaceuticals, propylene glycol is utilized as a solvent in oral, injectable, and topical drugs. Its approval by major regulatory bodies has rendered it a choice favorite among safe drug formulations. In the food industry, it serves as a carrier for flavors, colors, and emulsifiers that make foods more durable and chewier. As emerging nations accelerate production and usage in these markets, the worldwide demand for propylene glycol will increase gradually in the coming years.

Key Trends and Recent Developments

The market is evolving with bio-based innovations, EV coolant demand, HVAC applications, and advanced manufacturing processes, all driving sustainable and efficient industry growth, thus shaping the propylene glycol market dynamics and trends.

March 2025

Dow's Propylene Glycol (PG) manufacturing facility in Map Ta Phut, Rayong, Thailand, achieved ISCC PLUS certification, underscoring its commitment to sustainable production in the Asia Pacific region. The company introduced two new sustainable PG products: Propylene Glycol CIR, incorporating Renuva recycled material to utilize hard-to-recycle waste as feedstock, and Propylene Glycol REN, featuring Ecolibrium bio-circular technology to reduce reliance on fossil fuels.

October 2024

Manali Petrochemicals Limited (MPL) announced plans to expand its propylene glycol (PG) and polyester polyol production capacities. The first phase involves establishing a PG plant with a capacity of 32,000 metric tons per annum, targeting the food, beverage, and pharmaceutical sectors. This expansion, with an investment of ?94 crore, is projected to yield an internal rate of return (IRR) of 20.7%.

March 2024

Dow introduced two sustainable propylene glycol solutions in North America: Propylene Glycol CIR, utilizing Renuva recycled content, and Propylene Glycol REN, featuring Ecolibrium bio-circular technology. These products, certified via ISCC PLUS, cater to industries like personal care, pharmaceuticals, and agriculture, supporting sustainability goals.

May 2023

ORLEN Poludnie, in collaboration with BASF and Air Liquide Engineering & Construction, announced the successful operation of its BioPG plant in Poland. Utilizing BASF's technology and H9-66 catalyst, the facility converts glycerol-a biodiesel by-product-into renewable propylene glycol (BioPG), reducing CO? emissions by at least 60% compared to fossil-based alternatives.

Surge in Bio-Based Propylene Glycol Development

Firms are investing in propylene glycol bio-based obtained from renewable materials such as glycerin and corn. Such a trend works towards addressing issues of the environment, lowering dependency on fossil resources, and ensuring the growing need for sustainable, eco-friendly applications of industrial and consumer goods, thus pushing the growth of the propylene glycol market.

Rising Adoption in Electric Vehicle Coolants

As electric vehicles become more prevalent throughout the world, propylene glycol is gaining more applications in battery thermal management systems owing to its superior heat transfer characteristics. As a non-corrosive and biodegradable substance, it is the perfect fit for next-generation coolant compositions, supporting greener automotive technology aspirations.

Integration into Advanced HVAC Systems

Propylene glycol is gaining new uses in energy-efficient HVAC applications, especially in commercial and industrial facilities. As a heat transfer fluid, it improves performance in variable climates and aids sustainability efforts, which is why it's a favorite among eco-friendly infrastructure projects, thereby helping to create new trends in the propylene glycol market.

Technological Advancements in Manufacturing Processes

Manufacturers are embracing new catalytic and fermentation technologies to enhance the yield and efficiency of propylene glycol manufacturing. Such advances minimize the use of energy and reduce carbon footprints, and also address increasing demand in pharmaceuticals, food, and industry worldwide.

Propylene Glycol Market Trends

One of the innovative trends in the propylene glycol industry is the development of bio-based PG from waste feedstocks other than conventional glycerol. Businesses are investigating agricultural waste and algae as novel sources, seeking to minimize dependence on traditional raw materials. For example, Cargill is investigating next-generation fermentation processes that can work with unconventional biomass, enabling cost-effectiveness and sustainability, thereby shaping new trends in the propylene glycol market.

The other trend involves micro-reactor technology to drive efficiency in the production of PG. These tiny systems enable increased control over chemical reactions, reduce energy consumption, and increase yields. Evonik has piloted this trend in its special chemicals business unit, creating scope for decentralized factory units designed according to specific industry requirements. This facilitates quicker responsiveness to the market and more environmentally friendly manufacturing practices.

Propylene Glycol Industry Segmentation

The EMR's report titled "Propylene Glycol Market Report and Forecast 2025-2034" offers a detailed analysis of the market based on the following segments:

Market Breakup by Application

- Unsaturated Polyester Resins
- Functional Fluids
- Food, Drug, and Cosmetics
- Liquid Detergent
- Paints and Coating
- Others

Market Breakup by Region

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

Propylene Glycol Market Share

The use of propylene glycol in unsaturated polyester resins (UPR) is gaining considerable traction, mainly because it acts as a reactive diluent in resin blends. As per the propylene glycol market analysis, this type of glycol increases the performance and viscosity of UPR, which finds extensive use in automotive, construction, and marine applications. The increasing demand for light,

tough materials in these industries is fueling the rapid pickup in the use of propylene glycol-based resins. With the growth of the construction and automotive sectors, this application will continue to increase worldwide.

Propylene glycol is used extensively in functional fluids as a heat transfer fluid, antifreeze, and coolant. Due to its low toxicity and high heat stability, it is a perfect choice in industrial applications. The growing demand for energy-saving heating, cooling applications, and eco-friendly substitutes is driving its usage in HVAC equipment, refrigeration, and solar energy technology. According to the propylene glycol industry analysis, with the emerging trend towards sustainability across many sectors, functional fluids derived from propylene glycol are gaining more prominence for their eco-compatibility.

The food, drug, and cosmetics industries are also propelling propylene glycol's market growth. It serves as a humectant, solvent, and preservative in foodstuffs, pharmaceuticals, and personal care products. With the changing consumer trends towards natural and clean-label ingredients, propylene glycol's function of providing stability and product shelf life in these applications is increasingly becoming more important, further increasing market demand.

Competitive Landscape

Leading propylene glycol market players are emphasizing sustainability and innovation to address increasing demand for environmentally friendly products. Firms are investing in bio-based manufacturing of propylene glycol and looking for other feedstocks like agricultural waste. They also seek to optimize production efficiency with next-generation technologies, such as micro-reactor systems, in order to minimize energy usage. Propylene glycol companies are also gearing up to enhance their market footprint in different applications such as automotive, personal care, and food industries through delivering multi-functional, high-performance solutions.

Dow Inc.

Dow Inc., founded in 1897 and headquartered in the United States, produces a series of propylene glycol products mostly applied in the food, pharmaceutical, and automotive sectors. Their products center around sustainability, both with traditional and bio-based propylene glycol.

BASF SE

BASF SE, established in 1865 and headquartered in Germany, supplies propylene glycol for varied uses such as personal care, food, and industrial applications. They focus on innovation through bio-based and low-carbon solutions that enable industries to minimize environmental footprint without compromising product performance.

Shell Chemicals

Shell Chemicals, which was founded in 1907 and has headquarters in the Netherlands, manufactures propylene glycol for industrial purposes, such as antifreeze and functional fluids. Shell targets the development of sustainable production technologies, providing traditional and renewable propylene glycol products to serve various market demands.

Repsol S.A.

Repsol S.A., established in 1987 and based in Spain, provides propylene glycol to different industries such as pharmaceuticals, cosmetics, and automobiles. They work towards increasing sustainability by creating environmentally friendly substitutes and enhancing production efficiency, serving traditional and bio-based propylene glycol markets.

Other key players profiled in the propylene glycol market include Archer Daniels Midland Company, and LyondellBasell Industries Holdings B.V., among others.

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