

Global Engineering Plastics Market Outlook to 2027

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Abstracts

Engineering plastics are incredibly durable materials used in industrial applications. These plastics are more expensive to produce than commodity plastic, thus manufactured in low-medium volume. In 2018, global plastics production almost reached 360 million tonnes, with around 40% dedicated to engineering plastics. According to BlueQuark Research & Consulting, the global engineering plastics market is expected to witness a significant growth rate during the forecast period. An increase in the replacement of traditional materials by engineering plastics in various end-user industries and the technological advancements that are helping engineering plastics to penetrate new applications are likely to drive the global engineering plastics market. However, stiff competition from other low-end engineering resins is expected to hinder the market growth in the forecasted period.

Over the past decades, plastics have slowly made their way from toys and jewelry to serious aerospace and military applications. Due to the cost-efficiency of plastics, many industries are replacing metal parts with injection-molded plastics. According to the American Society of Mechanical Engineers, companies in the construction, automotive, and electronics sector are achieving an overall cost savings of nearly 25 to 50% by replacing conventional material parts with plastic. Moreover, the addition of glass fibers in thermoplastics has helped it carry a load over a greater surface area coupled with increased flexural strength, stiffness, modulus, tensile, and impact strength by as much as 300% to 400%. Plastics are not always visible in buildings but are used in a vast and growing range of applications that include insulation, piping, window frames, and interior design. The growth of engineering plastics in the construction sector is mainly due to their unique features such as durability, resistance to corrosion, very effective insulation, sustainability, fire resistance, etc. According to Plastics Europe, the building and construction sector in Europe consumes nearly 10 million tonnes of plastics each year that is equivalent to 20% of total European plastics consumption. Furthermore, construction is the second largest application for plastics after packaging in the



European region. For instance, plastic pipes account for most of the new pipe installations, with around 50% of the annual tonnage. Similarly, plastic?tar roads have benefits over conventional roads such as the overall reduction in bitumen consumption by 8%, enhanced load carrying strength, reduced wear and tear, and reduction in tonnes of CO2 release. Engineering plastic is also replacing metals in various electronics, from computers and cell phones to televisions and microwaves due to their durability, lightweight, and affordability. The design flexibility of plastics has also contributed to invisible resource efficiencies inside household equipment. For instance, the plastic lye container in a washing machine reduces water consumption and enables class-leading A+++ eco-efficiency ratings. Similarly, in small appliances such as smartphones engineering plastic contributes towards light and smaller handsets. Plastic electronics have led to a new era in the electronics industry with future products such as roll-up displays in computers and mobile phones, flexible solar panels that can be laminated to walls and ceilings or used to power portable equipment, and ultra-low-cost radio frequency identification (RFID) tags. Growing usage of engineering plastics in various end-user industries and leading to the replacement of traditional material is expected to drive the global engineering plastics market in the forecasted period.

Many Industries are regularly modifying engineering plastic to make them more environmentally friendly. The construction company VolkerWesser has designed PlasticRoad, a lightweight roadway design that requires a fraction of the construction time compared to standard roads, and is virtually maintenance-free. Classical engineering plastics like polyacetal and polyester are continuously improved according to customer requirements. The further development of such materials is driven by various factors, such as improved impact resistance, high UV stability, and flame retardancy.

The global Engineering Plastics Market is segmented on the basis of Product Type and End-User. The End-User segment is further segmented as Transportation, Construction, Electronics, Packaging, Medical, Industrial Machinery, and Others. By product type, polyamides are predicted to hold the largest market share, mainly driven by the increasing use of nylon in the automotive industry.

In terms of end-terms, transportation is found to dominate the studies market as plastic is the second most commonly used material in vehicles after metals, with nearly 50% of the volume of modern cars made from plastic. Automotive manufacturers are pursuing ways to reduce the weight of vehicles without compromising performance or safety by using plastic components to replace steel. Further, the trend for lighter vehicles has increased the use of engineering plastics. Reducing vehicle weight by 10%, i.e., around



0.1 tonnes, improves fuel efficiency by 6-8%, and reduces greenhouse gas emissions by the equivalent of combusting more than 2.7 million gallons of gasoline over the life of the vehicle. Furthermore, lowering the overall weight of a vehicle by 10 kg can cut CO2 emissions by 1 g/km. Lighter vehicles are environmentally friendlier options that are essential for sustainable future development. Lightweight plastics are driving manufacturers to produce automotive components that are incredibly light, reduce engine friction, and can operate in extreme environments, particularly at very high temperatures. Moreover, the use of engineering plastics ranges from interior & exterior body parts to electronic & electrical components. Polyamides are largely used in the transportation sector as they are highly water absorbent, have high mechanical properties, and are rigid in nature. Its applications in an automobile are found in gears, cams, bearings, and waterproof coatings. Similarly, due to the incredible electrical and chemical resistance of styrene compounds, they are largely used in car fittings, display bases, and buttons. Moreover, the growing demand for electric vehicles is further driving the need for engineering plastics as added weight decreases a vehicle's range between recharging. The global electric vehicle fleet expanded significantly over the last decade, underpinned by supportive policies and technological advances. In 2019 a total of 2.1 million electric cars were sold worldwide. According to the International Energy Agency (IEA), the global stock of electric passenger cars was approximately 5 million in 2018, which was a 63% increase compared to 2017. China dominates the electric vehicle market with around 45% of electric cars on the road in 2018, equivalent to a total of 2.3 million, followed by Europe (24%), and the United States (22%).

Based on geography, the global Engineering Plastics Market is segmented into Asia Pacific, North America, South America, Europe, and Middle East & Africa. The Asia Pacific is expected to be the dominant region in the global engineering plastics market due to significant growth in the electronics, construction, and automotive industry in the region. Further, the increasing urbanization, growing population, and the substitution of many metals by suitable engineering plastic in various end-user industries, such as packaging and automotive are likely to boost the market growth in the region. Moreover, China is the largest producer and consumer of engineering plastics in the region due to the abundant availability of raw material and low cost of production.

The United States is the world's largest economy. The GDP of the country has decreased at an annual rate of 5% in the first quarter and 9.5% in the second quarter of 2020 due to the ongoing coronavirus pandemic. The construction industry is a significant contributor to the country's economy. Construction is one of the largest customers for mining, manufacturing, and a variety of services. In the country, metropolitan areas that recently witnessed strong construction markets include New



York, Boston, Dallas, Miami, Austin, Houston, Chicago, San Antonio, Los Angeles, San Diego, San Francisco, Washington D.C., and Seattle. The residential market in Phoenix remains vigorous. The spending growth in the coming years is expected to be led by public institutions and infrastructure investments across both non-residential and residential structures. The electronics industry of the United States contributes about 3.7% to the country's GDP. States with higher than average contribution to GDP from electronic manufacturing include California, Oregon, Massachusetts, North Carolina, Minnesota, Arizona, Texas, Colorado, and Wisconsin. The largest subsectors in the country's electronic manufacturing are computer and peripheral equipment manufacturing, semiconductor, and other electronic component manufacturing, followed by navigational, measuring, electromedical, and control instruments manufacturing. The covid-19 pandemic has hit the U.S. electronics manufacturing industry. The electronics manufacturing industry faces diverse challenges, including changing demand patterns, unclear and evolving operating restrictions, and abnormalities in supply chains. The automotive production in the country has witnessed a declining trend from 2016 to date. This trend is likely to continue in the short-term, hindering the overall consumption of engineering plastics. Many automakers make the lion's share of their profits in North America. The U.S. vehicle market has seen considerable volatility in 2019 as the country's deliveries of light vehicles were down by 3.3% in the first quarter of 2019. The packaging industry has been growing at a considerable rate in the country. The ongoing crisis due to covid-19 is likely to boost the packaging sector, thus driving the market for polyether polyols in the long- run.

In the year 2019, the global engineering plastic market was found to be fragmented. Some of the key players in the global market are BASF SE, SABIC, Solvay, Royal DSM, DuPont, among others.

In May 2019, BASF plans to build an engineering plastics compounding plant and a thermoplastic polyurethane plant at the company's proposed integrated chemical production site in Zhanjiang, China. By 2022, the new engineering plastics compounding plant will supply an additional capacity of 60,000 metric tons per year of BASF engineering plastics compounds in China.

Our Global Engineering Plastics Market report provides deep insight into the current and future state of the Engineering Plastics Market across various regions. The study comprehensively analyzes the Engineering Plastics Market by segments based on Product Type (Polyamides, Polybutylene Terephthalate (PBT), Polycarbonates, Polyether Ether Ketone (PEEK), Polyethylene Terephthalate (PET), Polyoxymethylene (POM), Fluoropolymers, Styrene Copolymers, and Others), By End-Use Industry



(Transportation, Construction, Electronics, Packaging, Medical, Industrial Machinery, and Others), and by Geography (Asia Pacific, North America, Europe, South America, and Middle-East and Africa). The report examines the market drivers and restraints, along with the impact of Covid-19 are influencing the market growth in detail. The study covers & includes emerging engineering plastics market trend, market developments, market opportunities, market analysis, market dynamics, engineering plastics market size, and challenges in the industry. This report also covers extensively researched competitive landscape sections with profiles of major companies including their market share and projects.



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Basell Industries N.V.

bil

Ltd.

Phillips Chemical Company, LLC

Α.



ninklijke DSM N.V.

Pont de Nemours, Inc.

vanSix Inc.

ema Group

M

ahi Kasei Corporation

lanese Corporation

i Mei Corporation

vestro AG

icel Corporation

e 3M Company

stman Chemical Company

onik Industries AG

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