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Engineering Plastics

Industry Study with Forecasts for **2019 & 2024**

Study #3242 | April 2015 | \$5300 | 321 pages

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The Freedonia Group

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Replacement of metal parts with engineering plastics will continue to drive growth, as will new technological advancements that allow engineering plastics to penetrate new applications.

US demand to rise 2.6% annually through 2019

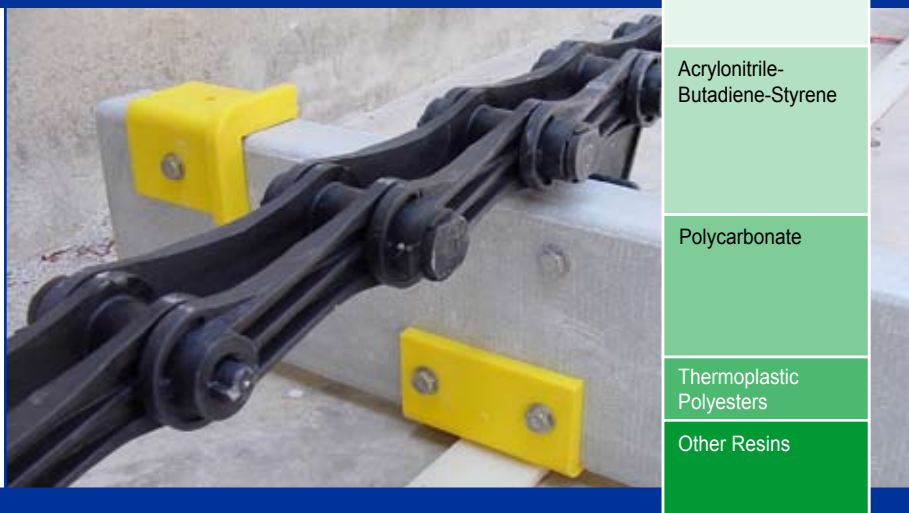
Demand for engineering plastics in the US is expected to rise 2.6 percent per year to 5.1 billion pounds in 2019.

Replacement of metal parts with engineering plastics will continue to drive growth, as will new technological advancements that allow engineering plastics to penetrate new applications. However, increased demand for engineering plastics will be tempered by weak growth in mature markets as well as increasing competition from lower cost commodity resins.

Construction, medical markets to grow fastest

The largest markets for engineering plastics will continue to be the motor vehicle and electrical and electronic markets. The motor vehicle market will increasingly rely on engineering plastics to reduce vehicle weight in order to improve fuel efficiency. However, the construction and the medical and consumer markets will provide the fastest growth. A significant rebound in construction activity is projected going forward and will provide opportunities for engineering plastics, especially in applications such as lighting, window glazing, and skylights for nonresidential buildings. Medical applications will continue to drive growth going forward because of engineering plastic resins' mechanical strength, ability to withstand sterilizing processes, and compatibility with the human body.

US Engineering Plastics Demand (5.1 billion pounds, 2019)



Nylon to lead gains among largest volume resins

Nylon, acrylonitrile-butadiene-styrene (ABS), and polycarbonate will continue to be the three largest engineering plastics by volume, accounting for three-quarters of total demand in 2019. Nylon will post the most rapid increases of the three and will remain the largest engineering plastic. This growth will be driven mainly by nylon supplanting metals in underhood motor vehicle applications. Gains for ABS will be the slowest of all engineering plastics, restrained by competition from lower-cost resins and maturity in major applications. Polycarbonate will benefit from strong growth in the construction and the medical and

consumer markets, but overall will track the industry average due to the continued decline in CD and DVD sales.

Smaller-volume engineering plastics such as polyphenylene sulfide, sulfone polymers, fluoropolymers, and polyketones will exhibit the fastest growth. Specialized use in mature markets, as well as utilization in new products such as advanced batteries, photovoltaic modules, and medical implants, will drive overall demand. These resins will see greater use in electrical and electronic and motor vehicle markets, where they are typically used to fill specific high-temperature needs and their greater cost can be economically justified.

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Sample Text, Table & Chart

RESINS

Nylon

Demand for nylon grew at an annual rate of 1.5% from 2009 to 2014, reaching 1.5 billion pounds. Nylon is a synthetic polymer that is known for its strength, durability, and resistance to abrasion. It is used in a wide range of applications, including automotive parts, industrial machinery, and consumer goods. The 2009-2014 period saw significant growth in the nylon market, particularly in the automotive and industrial sectors. Nylon has supplanted die-cast aluminum and other metals in many automotive applications such as air-intake manifolds, valve covers, and fan shrouds. Threats to additional growth include competition from specialty polypropylene grades and other engineering resins. High-heat specialty nylons such as polyphthalamide will take other high-value engineering plastics in more demanding applications.

Nylons, also known as polyamides, are among the oldest engineering plastics. Nylons exhibit high strength and stiffness, good chemical and abrasion resistance, a low coefficient of friction, and fair electrical properties. In addition, nylons have a high softening point and are often durable at low temperatures. Nylons exhibit considerable variation in flexibility and stiffness and can be tailored to meet performance requirements for a variety of uses.

The two dominant grades of nylon are nylon 6 and nylon 6/6, which account for the bulk of demand because they provide premium stiffness, strength, and heat resistance. Nylon 6 has a lower melting point than nylon 6/6 and is more moisture absorbent. Other nylon types include nylon 6/10, 6/12, 6/66, 66/6, 11, and 12, which are specialty products that demand higher prices. High-temperature nylons include polyphthalamide and nylon 4/6. The capacity to absorb moisture gives nylons dimensional stability, although the specialty nylon types have lower

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SAMPLE
TEXT

TABLE III-1

ENGINEERING PLASTICS DEMAND BY RESIN
(million pounds)

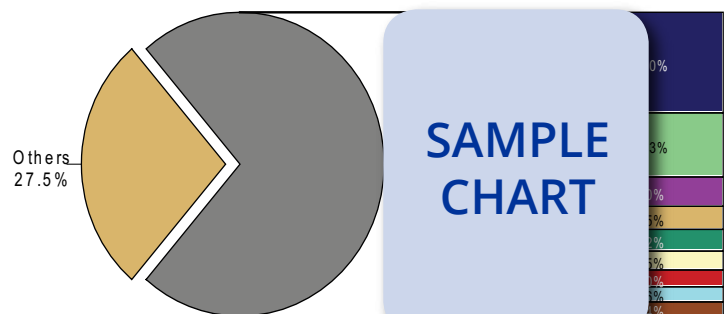
Item	2004	2009	2014	2019	2024
Durable Goods Shipments (bil 2009\$) lb resin/000\$ durables					
Engineering Plastics Demand					
Nylon					
Acrylonitrile-Butadiene-Styrene					
Polycarbonate					
Thermoplastic Polyesters					
Polyacetal					
Fluoropolymers					
Polyphenylene Oxide					
Sulfone Polymers					
Polyphenylene Sulfide					
Polyimides					
Other Engineering Plastics					
\$/lb					
Engineering Plastics Demand (mil \$)					

SAMPLE
TABLE

Source: The Freedonia Group, Inc.

CHART V-1

ENGINEERING PLASTICS MARKET SHARE, 2014
(\$9.9 billion)



SAMPLE
CHART

Sample Profile & Table, & Study Coverage

TABLE IV-3
MOTOR VEHICLE MARKET FOR ENGINEERING PLASTICS BY RESIN
 (million pounds)

Item	2004	2009	2014	2019	2024
Engineering Plastics in Motor Vehicles					
Nylon					
ABS					
Thermoplastic Polyesters					
Polycarbonate					
Polyacetal					
Polyphenylene Oxide					
Other Resins					
\$/lb					
Eng Plastics in Motor Vehicles (mil \$)	1754	1976	2715	3376	4020

Source: The Freedonia Group, Inc.

SAMPLE PROFILE

STUDY COVERAGE

Engineering Plastics is a Freedonia study that offers historical data (2004, 2009, 2014) plus forecasts (2019, 2024) for supply and demand by resin and market, as well as end-use market by application. The study also considers key market environment factors, assesses the industry structure, analyzes company market share and profiles 30 competitors in the US industry.

COMPANY PROFILES

Polymeric Resources Corporation
 55 Haul Road
 Wayne, NJ 07092
 973-694-4141
<http://www.cus>

Annual Sales:
 Employment:

Key Products: terephthalate, polyethylene terephthalate, polycarbonate alloys

Polymeric Resources, through its subsidiaries, is a privately held compounder specializing in engineering thermoplastics. The Company is also back integrated in the production of nylon polymers.

The Company is active in the US engineering plastics industry through the production of such products as NYLENE nylon, NORPEX polyphenylene ether (PPE), VEXEL polybutylene terephthalate (PBT) and polyethylene terephthalate (PET), and NAXEL polycarbonate and polycarbonate alloys. Available in standard and specialty grades, the resins are suitable for injection and blow molding, extrusion, film extrusion, and rotational molding applications mainly in the automotive, consumer goods, process manufacturing and home appliance industries.

NYLENE nylon resins include nylon 6, nylon 6/6, nylon 6/9, and nylon 6/12 formulations. For example, the company makes NYLENE nylon 6 resins in standard grades, as well as mineral-filled, glass-filled, nucleated, impact-modified, and other varieties. Among other performance properties, NYLENE products feature enhanced dimensional stability, optimal flow characteristics, and high abrasion resistance.

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Related Studies

Fluoropolymers

This study analyzes the US fluoropolymer industry. It presents historical demand data (2004, 2009 and 2014) and forecasts (2019 and 2024) by product (e.g., PTFE, fluoroelastomers, FEP, PVDF, PVF), application (e.g., coatings and liners, mechanical parts, films) and market (e.g., industrial processing, electrical and electronic, transportation equipment, construction). The study also considers market environment factors, details industry structure, evaluates company market share and profiles industry players. **#3278.....June 2015.....\$5300**

World Silicones

This study examines the world silicones industry. It presents historical demand data (2004, 2009 and 2014) and forecasts (2019 and 2024) by market (e.g., electrical and electronic, construction, transportation, health and personal care, chemical), product (e.g., elastomers, fluids, resins, gels), world region, and major country. The study also considers market environment factors, details industry structure, evaluates company market share and profiles industry participants. **#3277.....May 2015.....\$6400**

World Polyethylene

Global polyethylene demand will rise 4.0 percent yearly to 99.6 million metric tons in 2018. The Asia/Pacific region will remain the largest and fastest growing market, driven by China. Following a decade of decline, North America will add nine million tons of production capacity through 2023. This study analyzes the 82 million metric ton world polyethylene industry, with capacity, production and demand forecasts for 2018 and 2023 by product, market, world region, and for 27 countries. The study also evaluates company market share and profiles industry players. **#3210.....October 2014.....\$6200**

Silicones

US demand for silicones is forecast to climb 4.7 percent annually to \$4.3 billion in 2018, with volume rising 3.2 percent per year to 900 million pounds. Silicone elastomers will grow the fastest, overtaking fluids as the leading product type. The construction and medical markets will be the fastest growing segments, while the industrial market will remain dominant. This study analyzes the \$3.4 billion US silicones industry, with forecasts for 2018 and 2023 by product, market and application. It also evaluates company market share and profiles industry players. **#3138.....March 2014.....\$5100**

Fiber-Reinforced Plastic Composites

US demand for fiber-reinforced plastic (FRP) composites will climb 4.7 percent annually to 4.3 billion pounds in 2017, valued at \$22.9 billion. Motor vehicles will remain the largest market while construction will grow the fastest as it rebounds from the 2007-2012 period. Both thermoset and thermoplastic FRP composites will grow in line with the average. This study analyzes the 3.5 billion pound US FRP composites industry, with forecasts for 2017 and 2022 by fiber, product and market. The study also evaluates company market share and profiles industry players. **#3092.....October 2013.....\$5100**

About The Freedonia Group

The Freedonia Group, Inc., is a leading international industry market research company that provides its clients with information and analysis needed to make informed strategic decisions for their businesses. Studies help clients identify business opportunities, develop strategies, make investment decisions and evaluate opportunities and threats. Freedonia research is designed to deliver unbiased views and reliable outlooks to assist clients in making the right decisions. Freedonia capitalizes on the resources of its proprietary in-house research team of experienced economists, professional analysts, industry researchers and editorial groups. Freedonia covers a diverse group of industries throughout the United States and other world markets. Industries analyzed by Freedonia include:

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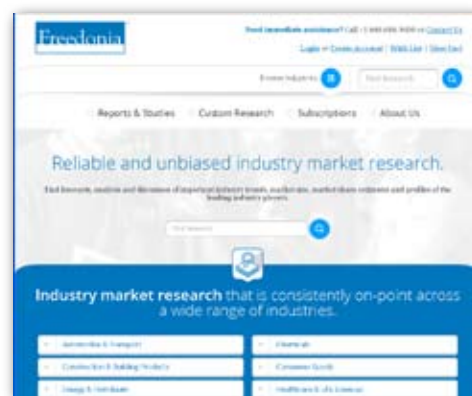
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