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Engineering Plastics

US Industry Study with Forecasts for **2012 & 2017**

Study #2404 | October 2008 | \$4600 | 299 pages

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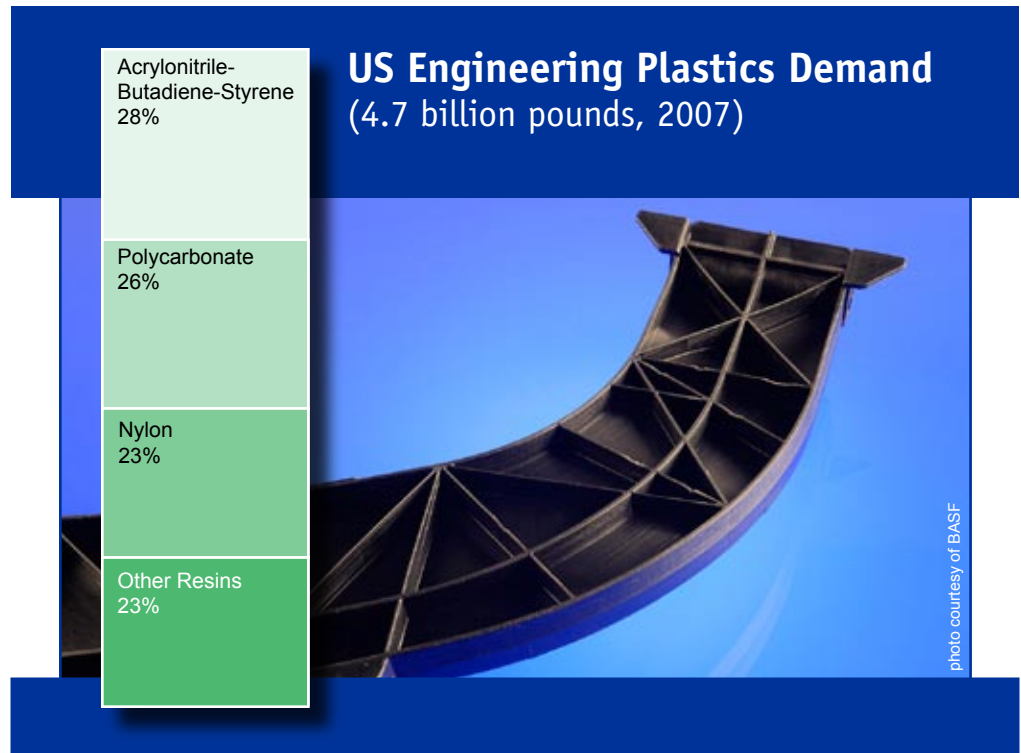
Advances will be driven by a continued trend toward the replacement of metal parts with high-performance plastic resins, that feature reduced weight, lower costs and increased durability.

US demand to grow 3.1% annually through 2012

Demand for engineering plastics will rise 3.1 percent per year to 5.4 billion pounds in 2012. Gains will represent a notable acceleration from performance during the 2002-2007 period, in which declining motor vehicle production and a weak electronics market resulted in sluggish growth in engineering plastics demand. Advances will be driven by a continued trend toward the replacement of metal parts with high-performance plastic resins, that feature advantages such as reduced weight, lower costs and increased durability. However, gains for engineering plastics will be tempered by increasing competition with lower-cost commodity resins and weakness in key markets. In value terms, engineering plastics demand will advance 5.1 percent per year through 2012 with sales reaching \$10.7 billion. Value gains will be driven by strong growth in higher-cost specialty resins, although prices for most individual resins will decelerate from the spikes seen between 2002 and 2007.

Polycarbonate to lead gains among top resins

ABS, polycarbonate and nylon will continue to be the three largest volume engineering plastics, accounting for over three-quarters of total demand in 2012. Of these, the most rapid advances are expected for polycarbonate resins, driven by opportunities in motor vehicles, medical products and construction, as



well as the increasing use of polycarbonate in blends with other plastics. However, slowdowns in the optical media (CDs and DVDs) market will inhibit demand for polycarbonate, and increasing offshore production will limit export opportunities. Above-average gains for nylon will be fueled by a rebound in motor vehicle output, where the resin is penetrating new applications in under-the-hood components. ABS demand will grow at a pace well below the overall average, restrained by market maturity and competition from commodity resins such as polypropylene.

The fastest gains among engineering resins will be seen in smaller-volume specialty plastics such as polysulfones,

polyphenylene sulfide and polyimides. Gains for these resins will be fueled by the increasing need for high-temperature performance and corrosion resistance in electronic and automotive markets, particularly as electrical components become further miniaturized. Fluoropolymers will also see growing opportunities in wire and cable coatings and industrial components. Market penetration for these resins will primarily come at the expense of metal, ceramics and thermoset polymers. However, the high cost of these resins -- which generally range in price from \$6 to over \$40 per pound -- will limit their use to filling specialized performance needs where their cost can be justified.

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Sample Text, Table & Chart

RESINS

Acrylonitrile-Butadiene-Styrene

ABS demand will increase billion pounds in 2012, valued any major engineering resin -- applications, as well as compet key ABS markets such as moto ment, and consumer goods. Po ABS and other engineering plas ultraviolet light resistance in compounded and fiber-reinforced Growth in demand for ABS will also be inhibited by competition from higher performing engineering resins in more demanding applications. Although domestic producers have slashed capacity in order to firm up pricing levels, increases in ABS prices will continue to be limited by low-cost imports from China, South Korea and Taiwan. However, demand for ABS will benefit from an improved outlook for motor vehicle production, as well as solid growth in the electrical and electronic market, where the resin is used in appliances and business machine housings. Additionally, new market opportunities for ABS will be bolstered by increased use of the resin in blends with other engineering plastics.

ABS is the largest volume engineering plastic used in the US due to its low cost and properties such as high strength, stiffness, toughness, chemical resistance and good surface appearance. The resin is produced by three methods: emulsion polymerization, continuous mas erization and suspension polymerization. The use of emulsi erization, the most widely used method, results in resins wh durable, heat resistant and glossy. However, greater use is b of continuous mass polymerization due to its lower cost. Sus polymerization, an older, less efficient process, is seeing red being phased out. In addition, the ratio of each of the three of ABS can be altered to increase certain performance prop is typically processed by injection molding, blow molding o

49

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SAMPLE
TEXT

TABLE III-32

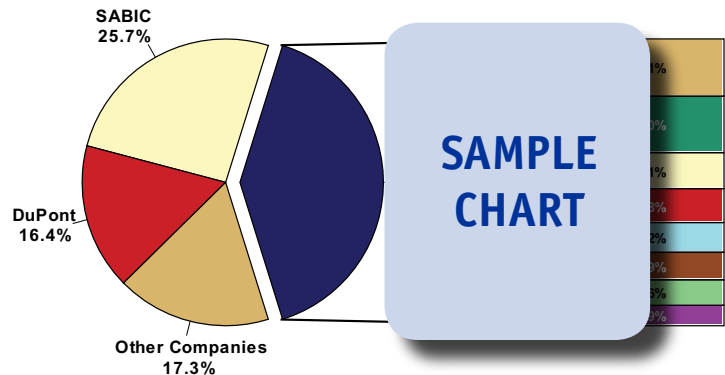
FLUOROPOLYMER DEMAND BY MARKET
(million pounds)

Item	1997	2002	2007	2012	2017
Durable Goods Shpts (bil 2000\$)	20				45
lb resin/mil \$ durables	4				5
Fluoropolymer Demand					10
Electrical & Electronic					88
Industrial					58
Consumer & Institutional					22
Other Markets					42
% fluoropolymers					4
Engineering Plastics Demand	30				20

SAMPLE
TABLE

CHART V-1

ENGINEERING PLASTICS MARKET SHARE BY COMPANY, 2007
(\$8.4 billion)



SAMPLE
CHART

Sample Profile, Table & Forecast

TABLE IV-3

**ELECTRICAL & ELECTRONIC MARKETS
 FOR ENGINEERING PLASTICS BY RESIN
 (million pounds)**

Item	1997	2002	2007	2012	2017
Eng Plastics in Electrical & Electronics					
Polycarbonate					
ABS					
Nylon					
Thermoplastic Polyester					
Polyphenylene Oxide					
Fluoropolymers					
Polyacetal					
Other Resins					
\$/lb					
Electric/Electronic Eng Plastics (mil \$)1					

**SAMPLE
TABLE**

COMPANY PROFILES

Schulman (A.) Incorporated

3550 West Market Street
 Akron, OH 44333
 330-666-3751
<http://www.aschulman.com>

Sales: \$
 Employe

Key Pro resins

A. S er and supplier of
 high-per The Company oper
 ates in t and Europe.

**SAMPLE
PROFILE**

The Company is involved in the US engineering plastics industry via the North America segment, which generated sales of \$477 million and employed 908 in FY 2007. Through this segment, Schulman makes engineered compounds, color and additive concentrates, polyolefins, polyvinyl chloride and other products for customers in the US, Canada and Mexico. In FY 2007, engineered compounds accounted for \$426 million of Schulman's total sales. Among these products are standard and specialty engineering plastics sold under the FORMION, SCHULAMID, POLYFLAM, POLYFABS, HILOY and SCHULADUR brand names. Of the Company's total sales in FY 2007, the packaging industry represented 37 percent, or approximately \$660 million; the automotive industry accounted for 16 percent, or about \$285 million; and other industries, such as the appliance, construction and consumer products markets, represented 47 percent, or approximately \$840 million.

"Business Machines -- Business equipment uses for engineering plastics will increase 3.0 percent annually through 2012 to 326 million pounds. Applications encompass computers, office equipment and telecommunications equipment, in which engineering plastics are used primarily as housings and mechanical components. Gains will represent a marked acceleration from the 1997-2007 decade, during which a pair of economic slowdowns led to weak demand growth of less than one percent per year. Advances will be driven largely by ..."
 --Section IV, pg. 159

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OTHER STUDIES

Natural Polymers

The study analyzes the US natural polymer industry. It presents historical demand data for 1997, 2002 and 2007 and forecasts to 2012 and 2017 by product (e.g., methyl cellulose, carboxymethyl cellulose, wheat proteins, collagen, starch blends, xanthan gum, hyaluronic acid, guar gum, gum arabic, carageenan, alginates, polyterpenes), and market (e.g., food and beverages, medical, oilfield). The study also considers market environment factors, details industry structure, evaluates company market share and profiles industry players.

#2422 10/2008..... \$4600

Biodegradable Plastic

US demand for biodegradable plastic will grow 15.5% yearly through 2012. Gains will be driven by escalating costs for petroleum-based resins and growing initiatives that favor renewable resources. Polyester-based and polylactic acid resins will grow the fastest, while starch-based types remain the largest segment. This study analyzes the 350 million pound US biodegradable plastic industry, with forecasts for 2012 and 2017 by type and market. It also details market share and profiles industry players.

#2387 08/2008..... \$4600

Nanocomposites

US nanocomposites demand will grow 21% annually through 2011 as nanomaterial and composite prices decline. Higher-priced resins, such as engineering plastics used in applications where cost is not a critical factor, will lead gains. Packaging and motor vehicles will remain two key early markets. This study analyzes the \$860 million US nanocomposites industry, with forecasts for 2011, 2016 and 2025 presented by product, market and nanomaterial. It also details market share and profiles major firms.

#2303 02/2008..... \$4500

World Thermoplastic Elastomers

Global demand for thermoplastic elastomers (TPEs) will grow 6.3% annually through 2011, as they continue to replace natural and synthetic rubber, rigid thermoplastics and metal. China will gain market share but the US will remain the top producer of some products such as olefinic-based TPEs. This study analyzes the \$10.4 billion world TPE industry, with forecasts for 2011 and 2016 by type, market, world region and for 16 countries. It also evaluates company market share and profiles major producers.

#2284 12/2007..... \$5500

Metalocene & Single-Site Polymers

US metallocene and single-site polymer demand will grow 17.7% annually through 2011. mLLDPE will remain dominant while mHDPE and polypropylene will lead gains. Film and sheet will stay the most common application, but will be outpaced by injection and blow molding uses. This study analyzes the \$2.4 billion US metallocene and single-site polymer industry, with forecasts for 2011 and 2016 by polymer, application and market. It also evaluates company market share and profiles leading competitors.

#2218 07/2007..... \$4400

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