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Silicones

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

Study #2385 | July 2008 | \$4500 | 233 pages

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The Freedonia Group

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: info@freedoniagroup.com

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Growth in US demand will be spurred by ongoing technological advancements and product innovation, and the rising use of silicone in cosmetics, toiletries and medical applications.

US demand to grow 4.2% annually through 2012

US silicone demand is forecast to advance 4.2 percent per annum through 2012 to \$3.9 billion. In volume terms, demand is projected to increase 2.8 percent per annum, reaching 825 million pounds. Growth will be spurred by ongoing technological advancements and product innovation which will continue to improve the performance of silicone in a variety of markets and applications. Gains will also be aided by the rising use of silicone in numerous cosmetic and toiletry products, as well as expanding opportunities in medical applications. Increases will be somewhat limited, however, by a slowdown in production of machinery and equipment though 2012, as well as the relatively high cost of silicone.

Silicone fluids to offer best growth opportunities

Among the major product segments, silicone fluids are expected to grow at the fastest pace, rising 4.5 percent per year to \$1.6 billion in 2012. Advances will be buoyed by strong growth in cosmetic and toiletry production, as these fluids tend to improve the performance of products such as antiperspirants, deodorants, eye make-up, foundation, lipsticks and shampoos. Moderate growth is also expected in industrial and automotive applications, where silicone fluids can be used in greases, lubricants and polishes. Silicone resins are also projected to expand at a healthy pace,



benefiting from strong growth in construction expenditures through 2012, as well as a positive turnaround in motor vehicle production.

Medical market to lead gains from small base

Gains in the relatively small medical market are expected to exceed all other markets, due to silicone's biocompatibility, low surface tension, chemical and thermal stability, and water-resistant qualities. The increased use of silicone gel-filled breast implants will also stimulate demand in the medical segment, following their reintroduction to the US market in late 2006. The construction market will benefit from the rising use of

higher performing silicone-based sealants/caulks and paints/coatings.

Conditioning agents to be fastest growing application

Among the wide range of applications, silicone conditioning agents are expected to post the strongest increases, followed closely by emollients. Both will benefit from healthy gains in cosmetic and toiletry production, as well as continued advancements in silicone technology. Lubricant and grease applications are expected to grow at the slowest pace, hampered by a slowdown in the production of machinery and equipment and a declining manufacturing base.

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Sample Text, Table & Chart

PRODUCTS

Silicone Foam

Silicone foam is expected to grow through 2012 to \$1.5 billion. The source of growth of silicone foam is anticipated to be in seat cushions. Silicone is resistant to hot air and is generally unchanged after 10 years. The material has very low compression set and is ideal for applications in transportation equipment, machinery and household goods. Silicone foam can be used for sound abatement purposes. Silicone foam is based on silicone resins, which are made by mixing the resins with a blowing agent; the fluid resins are then poured into molds.

Growth opportunities for silicone foams are expected in the transportation equipment segment in rail car, airline and mass transit seating due to the foam's flame resistance, low smoke generation and toxic emissions, and light weight (a crucial attribute for aircraft applications). Other transportation equipment uses include insulation on railcars and marine craft. Typically, silicone foam is too expensive for conventional applications such as motor vehicle seat cushions. Nonetheless, silicone foam is occasionally used in automobiles and trucks in special circumstances, such as gasketing, where fuel, brake and other lines are in close proximity to engine heat and may present a fire hazard.

Other markets for silicone foams include electronics and telecommunications. Silicone foams make excellent long term sealing materials for electrical and communications enclosures, electronics, high intensity discharge lighting enclosures and appliances. They pass stringent Underwriters Laboratories' flame ratings and are frequently chosen for insulation and dampening applications inside communications enclosures, electronic products and industrial machinery. For instance, silicone

TABLE III-1

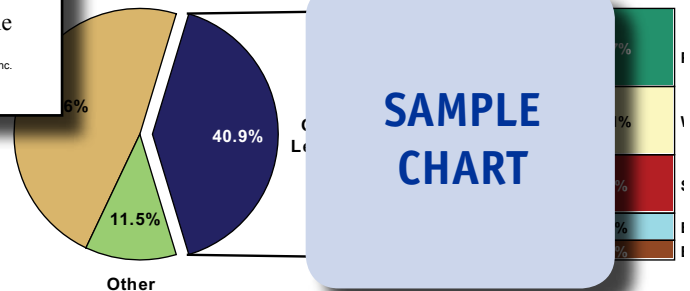
SILICONE DEMAND BY PRODUCT
(million dollars)

Item	1997	2002	2007	2012	2017
Gross Domestic Product (bil \$)					
\$ silicone/000\$ GDP					
Silicone Demand					
Fluids					
Resins					
Elastomers					
Gels					
Foam & Other					
\$/lb					
Silicone Demand (mil lbs)					

SAMPLE TABLE

CHART VI-1

SILICONE MARKET SHARE, 2007
(\$3.2 billion)

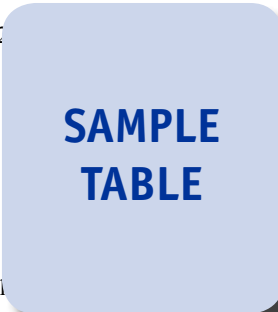


SAMPLE CHART

Sample Profile, Table & Forecast

TABLE IV-4
MOTOR VEHICLE MARKET FOR SILICONES BY APPLICATION
 (million dollars)

Item	1997	2002	2007	2012	2017
Motor Vehicle Production (000 units) 12					50
\$ silicone/vehicle					3.7
Motor Vehicle Market					10
Adhesives, Sealants & Coatings					06
Elastomeric Components					60
Other Applications					44
% motor vehicle					5.5
Industrial Silicone Demand					85



COMPANY PROFILES

Hercules Incorporated

Hercules
 1313 No
 Wilming
 302-594
 http://wv



Sales: \$
 US Sale:
 Employ

Key Products: silicone-based foam control resins

Hercules is a worldwide producer of chemicals. The Company operates through two segments: Aqualon Group, and Paper Technologies and Ventures Group. Hercules maintains a third reporting segment, FiberVisions, to account for historical reporting of the segment, which operates as an equity investment that is 34.5-percent owned by the Company.

The Company participates in the US silicone industry through the Paper Technologies and Ventures Group, which had sales of \$1.2 billion in 2007. The segment is comprised of two divisions: Paper Technologies and Ventures. Of these, the Paper Technologies division, which had 2007 sales of \$903 million, produces chemicals, functional additives and water treatment chemicals for the pulp and paper industry. Among the division's chemical products are silicone-based foam control chemicals. These foam control chemicals are marketed under such brand names as ADVANTAGE, DE-AIREX and PROTOCOL. The silicone-based foam control chemicals feature low feed rates and optimal handling.

"Motor vehicle polishes accounted for 78 percent of total silicone polish demand in 2007. Demand in this segment is projected to expand 2.7 percent per year through 2012 to \$240 million. The market for machinery and equipment polishes will also grow at a below-average pace, hampered by a slowdown in industry production through 2012."

--Section V, pg. 131

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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 11/2008..... \$4600

Engineering Plastics

US engineering plastic demand will rise 3.1% yearly through 2012, driven by the ongoing replacement of metal parts with high-performance plastic. ABS, polycarbonate and nylon will stay the largest volume types, with polycarbonate leading gains based on opportunities in motor vehicles, medical products and construction. This study analyzes the 4.7 billion pound US engineering plastic industry, with forecasts for 2012 and 2017 by resin and market. It also evaluates company market share and profiles industry players.

#2404 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

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