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Plastic Sheet

US Industry Study with Forecasts for **2011 & 2016**

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Plastic Sheet

US Industry Study with Forecasts for ***2011 & 2016***

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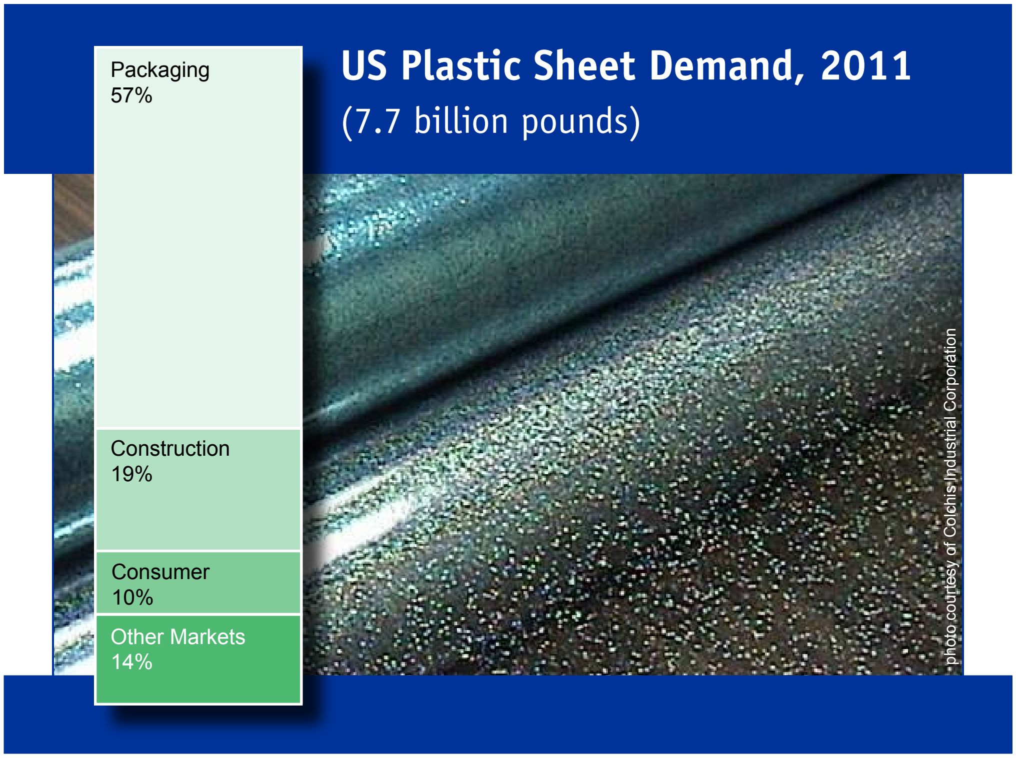
Demand will be bolstered by opportunities in food packaging, as well as sheet's versatility, good aesthetics, material combining capabilities, and resin and technology improvements.

US demand to reach 7.7 billion pounds in 2011

Demand for plastic sheet in the US is projected to grow nearly three percent yearly to 7.7 billion pounds in 2011, valued at $7.2 billion (resin content only). Resins will account for 39 percent of the final product cost of $18.5 billion. Demand will be bolstered by opportunities in food packaging, as well as sheet's versatility, good aesthetics, material combining capabilities, and resin and technology improvements. Further growth will be constrained by the maturity of many applications, and efforts to reduce the packaging waste stream. Aggregate sheet prices will stay relatively stable through 2011, as pricing is expected to moderate from the steep increases experienced in the 2004 to 2006 period that saw high raw material and energy costs affecting all resins and production costs. Polystyrene is the leading resin, with best advances anticipated for polypropylene and polyester sheet.



Food packaging to offer best market opportunities

Food packaging markets will present the best opportunities and increase 3.6 percent annually to 3.8 billion pounds in 2011, accounting for nearly half of all sheet applications. Advances will be driven by above-average growth in tubs, cups, bowls and lids used in foodservice applications and the packaging of such foods as baked goods, frozen foods, fresh produce, and meat and dairy products. Advances for pharmaceutical and medical packaging, the next largest packaging market, will be stimulated by opportunities in pharmaceutical blister packs based on convenience, safety and governmental regulations. Other markets include cosmetics and toiletries, hardware, sporting goods, electronic products and diverse consumer items.

Consumer, sign/display markets also show promise

Construction markets will expand at a much slower 1.8 percent annual pace to 1.5 billion pounds in 2011. Increases will be attributable to above-average glazing and insulation uses, yet be constrained by slumping single-family housing starts. Consumer markets are led by appliances, lawn and garden, and sports and recreational applications. Growth in appliance applications will be bolstered by plastic sheet's light weight, moisture and corrosion resistance, and excellent design flexibility. However, demand in these applications is expected to expand slowly due to increased appliance longevity and competition from imported appliances. Sign and display markets will benefit from growing economic activity and needs for marketing and informational messages. Sheet demand in motor vehicle uses will be fueled by rebounding motor vehicle production and needs for lighter weight, more fuel efficient vehicles. Instrument panels are a leading application.

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Sample Text, Table & Chart

TABLE III-2

PLASTIC SHEET DEMAND BY RESIN
(million pounds)

Item	1996	2001	2006	2011	2016
Manufacturers' Shipments (bil 2000$)	[illegible]				[illegible]30
lbs sheet/000$ mfrs' shpts					[illegible]9
Plastic Sheet Demand					[illegible]0
Polystyrene					[illegible]0
Polypropylene					[illegible]0
Polyvinyl Chloride					[illegible]0
High Density Polyethylene					[illegible]0
Acrylic					[illegible]0
Polycarbonate					[illegible]0
Polyester					[illegible]0
Acrylonitrile-Butadiene-Styrene					[illegible]5
Low Density Polyethylene					[illegible]5
Other	27	27	30	35	40

SAMPLE TABLE

RESINS

Packaging - Demand for polypropylene sheet in packa[illegible] cations is predicted to expand nearly seven percent yearly to [illegible] pounds in 2011. Tubs, cups a[illegible]ry gr[illegible] expanding 6.5 percent annua[illegible] 201[illegible] counting for 73 percent of a[illegible]ill be[illegible] continued opportunities in e[illegible]garin[illegible] and cottage cheese, and grow[illegible] crow[illegible] entrees and single-serving s[illegible]s and[illegible]

SAMPLE TEXT

The advent of thermoforming equipment designed for f[illegible] ers has also enabled the production of lighter weight polypro[illegible] containers. Demand for polypropylene sheet used in tubs, cu[illegible] bowls is expected to increase 6.5 percent yearly to 480 million pounds in 2011. Polypropylene cups, because of their better thinwalling capability, use less resin per cup than HDPE cups, which also results in less waste as most dairy cups are landfilled rather than recycled. For example, a thermoformed polypropylene yogurt cup is up to 30 percent lighter than its injection molded counterpart. There is also ongoing development of polypropylene grades with clarity that approaches that of polyethylene terephthalate. Attributes of polypropylene include low cost, stiffness, chemical inertness and heat resistance. In addition, metallocene technology has led to the development of stronger polypropylene resin grades (which enable thinwalling, leading to even thinner containers and lighter weights) and grades which do not impart odor to the container's contents.

Demand for polypropylene sheet used in food trays is expected to grow 4.7 percent per year to 63 million pounds in 2011 based on the expanding use of case-ready meats and increasing demand for microwaveable meal and entree containers. Growth will be supported by polypropylene's various benefits, such as light weight, low cost, stress-crack resistance and enhanced rigidity. In addition, strong demand for

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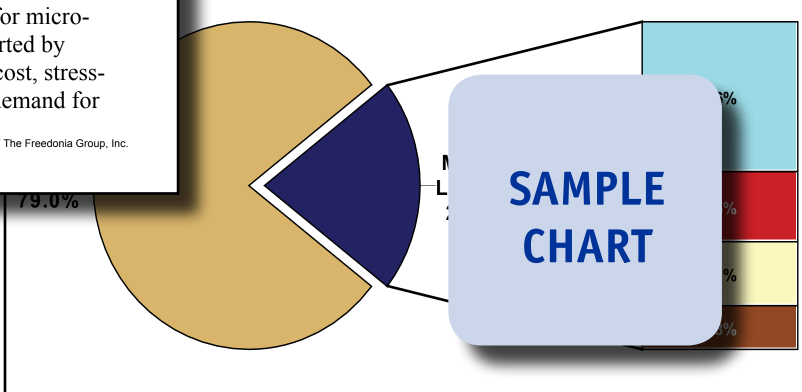
CHART V-1

[illegible]STOM PLASTIC SHEET MARKET SHARE, 2006*
($8.15 billion)



SAMPLE CHART

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Sample Profile, Table & Forecast

TABLE IV-7

CONSTRUCTION MARKET FOR PLASTIC SHEET BY RESIN (million pounds)

Item	1996	2001	2006	2011	2016
Bldg Construction Expend (bil 2000$)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
lbs sheet/000$ construction	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Plastic Sheet in Construction	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Polystyrene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Polyvinyl Chloride	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Polycarbonate	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Acrylic	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
High Density Polyethylene	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% construction	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Plastic Sheet Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SAMPLE TABLE

COMPANY PROFILES

GOEX Corporation
2532 Foster Avenue
Janesville, WI 53545
608-754-3303
http://www.goex.com

Sales: $1[illegible]
Employ[illegible]

Key Pro[illegible] [illegible]lycarbonate and polyethy[illegible] [illegible] sheet

GO[illegible] [illegible]id extruded plastic sheet for [illegible] packaging applications. T[illegible] [illegible]Wisconsin headquarters facility.

SAMPLE PROFILE

GOEX produces polyvinyl chloride (PVC), polystyrene, polycarbonate and polyethylene terephthalate glycol (PETG) extruded plastic sheet products. GOEX's PVC plastic sheet consists of the CAROM and IMPRESS product lines. Among the CAROM PVC plastic sheet products are CAROM 45 CS and CAROM 50/60. CAROM 45 CS features precise gauge control, consistent color and opacity, and superior die cutting and punching qualities. This sheet product is available with gloss or matte finish and is ideal for plastic card and graphic art printing applications. CAROM 50/60 is engineered with high ink receptivity, consistent color and opacity, and is specifically designed for graphic art printing applications. GOEX's IMPRESS 90 is an extruded PVC plastic sheet produced primarily for stress-white embossing applications.

GOEX's polystyrene plastic sheet is marketed under the STYREX brand name and includes STYREX 300 and STYREX 320. STYREX.

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"Demand for plastic sheet in construction markets is expected to grow 1.8 percent per annum to 1.5 billion pounds in 2011. Opportunities are anticipated due to the many advantages plastics have over wood, metal, glass and other materials. These include low cost, light weight, ease of processing and reduced maintenance requirements. Continued improvements in resins and processing technologies will also broaden applications. Polystyrene and polyvinyl chloride will remain the leading resins, together accounting for .."
--Section IV, pg. 121

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Other Studies

Labels

US label shipments will grow 5.1% annually through 2011. Best opportunities are anticipated for the dominant pressure sensitive segment. However, stretch sleeve and heat shrink labels will grow the fastest. Paper will remain the largest stock material but will continue losing market share to plastic. This study analyzes the $14.3 billion US label industry, with forecasts for 2011 and 2016 by material, application method, printing technology and function. It also details market share and profiles leading producers.

#2268 .... 12/2007 .... $4500

Stretch & Shrink Film

US stretch and shrink film demand will grow 4.7% annually through 2011, driven in part by retail trends favoring shrink-wrapped multipacks and pallet wrap. Stretch and shrink film will grow at a similar pace, with stretch film remaining the larger segment. The dominant resin, LDPE, offers the best growth opportunities. This study analyzes the $3.7 billion US stretch and shrink film industry, with forecasts for 2011 and 2016 by type, market and resin. It also evaluates market share and profiles major players.

#2254 .... 10/2007 .... $4400

Flexible Bulk Packaging

US demand for flexible bulk packaging will grow 3.4% yearly through 2011. Film wrap, plastic strapping and plastic shipping sacks will lead gains. Plastic such as polyethylene will remain the dominant material, with the limiting effect of downgauging softened by new applications and further inroads on paper sacks. This study analyzes the $6.1 billion US flexible bulk packaging industry, with forecasts for 2011 and 2016 by material, product and market. It also details market share and profiles major players.

#2238 .... 09/2007 .... $4500

Extruded Plastics

US demand for extruded plastics will reach 40 billion pounds in 2011, driven by extrusion's cost efficiency, processing ease and high volume uses. PVC and LDPE will remain the dominant extruded resins while HDPE will grow the fastest. Construction and packaging uses will offer the best market prospects. This study analyzes the $27 billion (resin content) US extruded plastic industry, with forecasts for 2011 and 2016 by resin and market. It also presents company market share data and profiles leading players.

#2241 .... 09/2007 .... $4500

Metallocene & 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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