



[CLICK TO VIEW](#)

[Table of Contents 2](#)

[List of Tables & Charts 3](#)

[Study Overview 4](#)

[Sample Text, Table & Chart 5](#)

[Sample Profile, Table & Forecast 6](#)

[Order Form 7](#)

[About Freedonia, Custom Research, Related Studies, Corporate Use License 8](#)

Plastic Sheet

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

Study #2283 | December 2007 | \$4500 | 242 pages

www.freedoniagroup.com



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

Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General	4
Macroeconomic Outlook	4
Demographic Trends	9
Consumer Income & Spending	11
Manufacturing Outlook.....	14
Food Industry Overview.....	17
Foodservice Industry Outlook.....	20
Sheet Manufacturing	22
Extrusion	22
Calendering.....	23
Casting.....	23
Competitive Processes	24
Thermoformed Sheet.....	25
Thermoplastic Resin Outlook.....	27
Pricing Trends	30
Regulatory Considerations	32
Environmental Issues.....	33
Degradable Materials	34
Recycling.....	35
International Activity & Foreign Trade.....	36

RESINS

General	38
Sheet Demand by Resin.....	39
Polystyrene	41
Types	43
Foamed	44
Solid.....	44
Applications.....	45
Packaging	47
Cups & Lids.....	47
Tubs, Plates & Bowls	47
Clamshells & Blister Packs	48
Food Trays	49
Egg Cartons & Other	51
Construction	52
Appliances & Other	53
Polypropylene.....	53
Applications.....	55
Packaging	57
Other	59
Polyvinyl Chloride	60
Applications.....	62
Construction	64
Packaging	65
Other	65

High Density Polyethylene.....	66
Applications.....	67
Producers	70
Acrylic.....	71
Types	73
Applications.....	75
Signs & Displays	77
Glazing.....	77
Other	78
Polycarbonate	78
Applications.....	79
Construction	81
Appliances, Packaging & Other.....	81
Producers	83
Polyester	84
Types	85
Applications.....	87
Acrylonitrile-Butadiene-Styrene.....	90
Low Density Polyethylene.....	92
Other	95
Resins & Applications	96
Producers	97

MARKETS

General	99
Packaging	101
Packaging Overview.....	101
Resins	104
Applications.....	106
Cups & Lids.....	108
Tubs, Bowls & Plates	108
Trays.....	109
Clamshells & Blister Packs	111
Other	112
End Uses	113
Food	114
Pharmaceutical & Medical.....	115
Other	116
Producers	117
Construction	119
Construction Outlook.....	119
Resins	121
End Uses	124
Insulation.....	126
Glazing.....	127
Geomembranes	128
Flooring	129
Single-Ply Roofing	130
Other	131

Consumer.....	132
Resins	132
Major Appliance Outlook	136
End Uses	137
Other Markets.....	139
Signs & Displays	141
Motor Vehicles.....	141
Industrial	143
All Other	144

INDUSTRY STRUCTURE

General	145
Types of Producers	147
Market Share	147
Spartech.....	148
Primex Plastics	149
Alcoa KAMA	149
SABIC Innovative Plastics.....	150
Others.....	150
Mergers & Acquisitions.....	151
Marketing Strategies.....	154
Channels of Distribution.....	155
Research & Development.....	156
Competitive Strategies.....	158
Cooperative Agreements.....	159

COMPANY PROFILES

Alcoa Incorporated.....	163
Arkema SA	166
Armstrong World Industries	168
Ashland Incorporated	170
Atlantic Plastics.....	171
Bayer AG	172
Berkshire Hathaway.....	174
Berry Plastics	175
Carlisle Companies	177
Clondalkin Group.....	178
Dart Container	179
Dow Chemical.....	180
DuPont (EI) de Nemours.....	182
ENSINGER GmbH	184
Fabri-Kal Corporation.....	185
Formosa Plastics	187
G-I Holdings	188
GOEX Corporation	190
Gundle/SLT Environmental.....	191
Highland Plastics	193

(continued on next page)

[Click here to purchase online](#)

COMPANY PROFILES

(continued from previous page)

HPG International	194
ICC Industries.....	195
Illinois Tool Works.....	198
King Plastic.....	199
Kloeckner Pentaplast	202
Lucite International	203
Mitsubishi Corporation.....	204
O'Sullivan Films	206
OMNOVA Solutions.....	207
Owens Corning.....	208
Pactiv Corporation.....	209
Pattison (Jim) Group	211
Plaskolite Incorporated	213
Pregis Holding II	216
RAG AG.....	217
Repsco Incorporated.....	219
Rowmark LLC.....	220
RTP Company	222
Saudi Basic Industries	223
Schulman (A.) Incorporated.....	226
Sekisui Chemical.....	228
Select Plastics	230
Sigma Plastics	231
Solo Cup Company.....	232
Spartech Corporation	235
Tarkett SA.....	239
Additional Companies Mentioned in Study	242

List of Tables/Charts

EXECUTIVE SUMMARY

1 Summary Table	3
-----------------------	---

MARKET ENVIRONMENT

1 Macroeconomic Indicators	8
2 Resident Population by Age Group	11
3 Personal Consumption Expenditures ..	14
4 Manufacturers' Shipments.....	17
5 Food Shipments.....	19
6 Foodservice Revenues by Establishment Type	21
7 Thermoplastic Resin Demand by Type	29

Cht Thermoplastic Resin Demand by Type, 2006	29
8 Plastic Sheet Pricing.....	31

RESINS

1 Plastic Sheet Demand in Pounds & Dollars	39
2 Plastic Sheet Demand by Resin.....	40
Cht Plastic Sheet Demand by Resin, 2006	41
3 Polystyrene Sheet Demand by Type ...	43
4 Polystyrene Sheet Demand by Application.....	46
Cht Polystyrene Sheet Demand by Application, 2006	46
5 Polypropylene Sheet Demand	55
6 Polypropylene Sheet Demand by Application.....	56
Cht Polypropylene Sheet Demand by Application, 2006	56
7 Polyvinyl Chloride Sheet Demand.....	62
8 Polyvinyl Chloride Sheet Demand by Application	63
Cht Polyvinyl Chloride Sheet Demand by Application, 2006	63
9 High Density Polyethylene Sheet Demand	67
10 High Density Polyethylene Sheet Demand by Application	69
Cht High Density Polyethylene Sheet Demand by Application, 2006	70
11 Acrylic Sheet Demand by Type	75
12 Acrylic Sheet Demand by Application.....	76
Cht Acrylic Sheet Demand by Application, 2006	76
13 Polycarbonate Sheet Demand	79
14 Polycarbonate Sheet Demand by Application	80
Cht Polycarbonate Sheet Demand by Application, 2006	80
15 Polyester Sheet Demand	85
16 Polyester Sheet Demand by Application.....	89
Cht Polyester Sheet Demand by Application, 2006	90
17 Acrylonitrile-Butadiene-Styrene Sheet Demand by Application	92
18 Low Density Polyethylene Sheet Demand by Application	94

Cht Low Density Polyethylene Sheet Demand by Application, 2006	95
19 Other Plastic Sheet Demand.....	96

MARKETS

1 Plastic Sheet Demand by Market.....	100
Cht Plastic Sheet Demand by Market, 2006	100
2 Packaging Shipments.....	103
3 Packaging Market for Plastic Sheet by Resin	105
Cht Packaging Market for Plastic Sheet by Resin, 2006	106
4 Packaging Market for Plastic Sheet by Application.....	107
Cht Packaging Market for Plastic Sheet by Application, 2006	107
5 Packaging Market for Plastic Sheet by End Use	114
6 Construction Expenditures	121
7 Construction Market for Plastic Sheet by Resin	123
Cht Construction Market for Plastic Sheet by Resin, 2006	124
8 Construction Market for Plastic Sheet by End Use	125
Cht Construction Market for Plastic Sheet by End Use, 2006.....	125
9 Consumer Market for Plastic Sheet by Resin	135
Cht Consumer Market for Plastic Sheet by Resin, 2006	135
10 Appliance Shipments	136
11 Consumer Market for Plastic Sheet by End Use	138
Cht Consumer Market for Plastic Sheet by End Use, 2006.....	139
12 Other Markets for Plastic Sheet by End Use	140
Cht Other Markets for Plastic Sheet by End Use, 2006	140

INDUSTRY STRUCTURE

1 US Custom Plastic Sheet Sales by Company, 2006.....	146
Cht US Custom Plastic Sheet Market Share, 2006	148
2 Selected Acquisitions & Divestitures	153
3 Selected Cooperative Agreements ...	161

[Click here to purchase online](#)

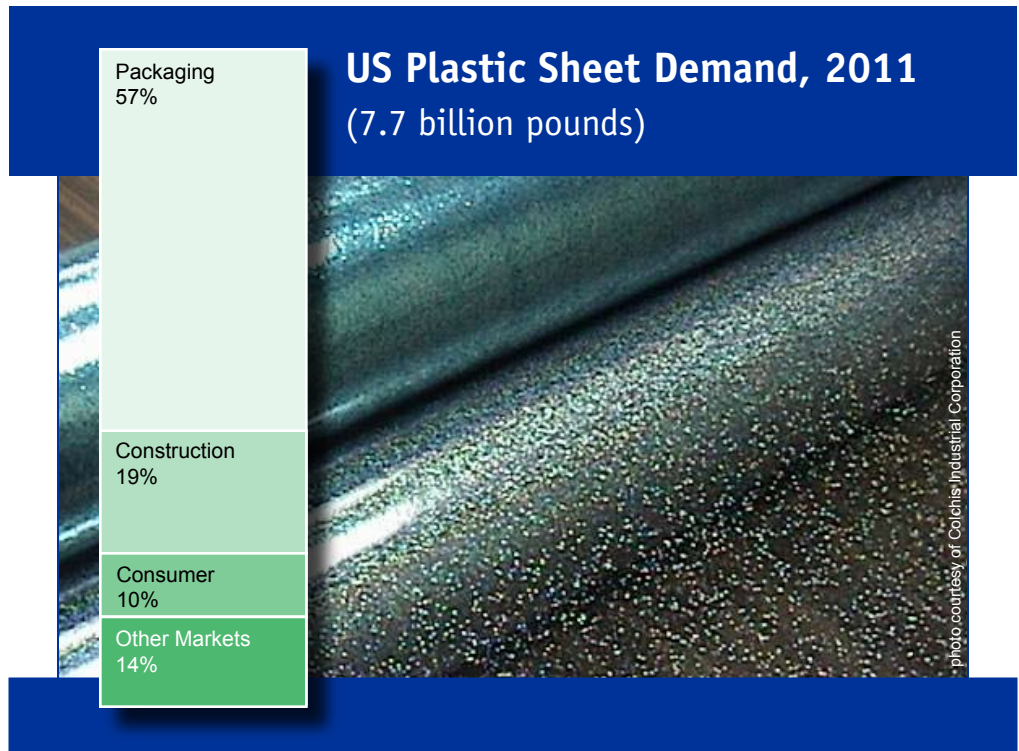
Demand will be bolstered by opportunities in food packaging, as well as sheet's versatility, good aesthetics, material combining capabilities, and resin and technology improvements.

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.

Sample Text, Table & Chart

RESINS

Packaging - Demand for polypropylene sheet in packaging is predicted to expand nearly seven percent yearly to 480 million pounds in 2011. Tubs, cups and bowls are the primary growth drivers, expanding 6.5 percent annually through 2011. Dairy containers are accounting for 73 percent of all polypropylene sheet demand. Continued opportunities exist in expanded use of polypropylene in margarine and cottage cheese, and growth in fast-food and grocery store containers and single-serving sizes.

SAMPLE TEXT

The advent of thermoforming equipment designed for food containers has also enabled the production of lighter weight polypropylene containers. Demand for polypropylene sheet used in tubs, cups and 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

57

Copyright 2007 The Freedonia Group, Inc.

TABLE III-2

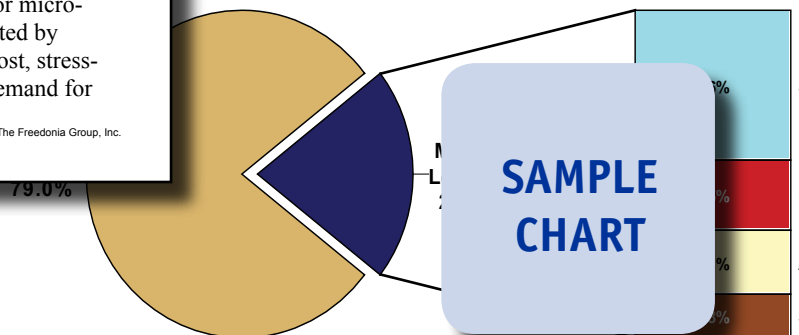
PLASTIC SHEET DEMAND BY RESIN
(million pounds)

Item	1996	2001	2006	2011	2016
Manufacturers' Shipments (bil 2000\$) ? lbs sheet/000\$ mfrs' shpts					30
Plastic Sheet Demand					0
Polystyrene					0
Polypropylene					0
Polyvinyl Chloride					0
High Density Polyethylene					0
Acrylic					0
Polycarbonate					0
Polyester					0
Acrylonitrile-Butadiene-Styrene					5
Low Density Polyethylene					5
Other	27	27	30	33	40

SAMPLE TABLE

CHART V-1

CUSTOM PLASTIC SHEET MARKET SHARE, 2006*
(\$8.15 billion)



SAMPLE CHART

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\$)	500	550	600	650	700
lbs sheet/000\$ construction	1.5	1.5	1.5	1.5	1.5
Plastic Sheet in Construction	750	825	900	975	1050
Polystyrene	150	165	180	195	210
Polyvinyl Chloride	450	495	540	585	630
Polycarbonate	150	165	180	195	210
Acrylic	150	165	180	195	210
High Density Polyethylene	150	165	180	195	210
Other	150	165	180	195	210
% construction	1.5	1.5	1.5	1.5	1.5
Plastic Sheet Demand	500	550	600	650	700

SAMPLE PROFILE

COMPANY PROFILES

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

Sales: \$1
 Employe

Key Pro
 polyethy

GOEX produces 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.

SAMPLE TABLE

"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

ONLINE: www.freedoniagroup.com

MAIL: Print out and complete the order form and send to The Freedonia Group (see address at the bottom of this form)

PHONE: Call toll free, 800.927.5900 (US) or + 1 440.684.9600

FAX: + 1 440.646.0484 (US)

EMAIL: info@freedoniagroup.com

Free Handling & Shipping

There is NO charge for handling or UPS shipping in the US. Expect delivery in 3 to 5 business days. Outside the US, Freedonia provides free airmail service. Express delivery is available at cost.

Orders Outside of the US

Checks must be made payable in US funds, drawn against a US bank and mailed directly to The Freedonia Group. For wire transfers please contact our customer service department at info@freedoniagroup.com. Credit cards accepted.

Credit Card Orders

For convenience, Freedonia accepts American Express, MasterCard or Visa. Credit card purchases must include account number, expiration date and authorized signature.

Save 15%

If you order three (3) different titles at the same time, you can receive a 15% discount. If your order is accompanied by a check or wire transfer, you may take a 5% cash discount (discounts do not apply to Corporate Use Licenses).

Corporate Use License

Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional \$2300, companies receive unlimited use of an electronic version (PDF) of the study. Place it on your intranet, e-mail it to coworkers around the world, or print it as many times as you like,

[Click here to learn more about the Corporate Use License](#)

ORDER FORM

F-WEB.2283

Plastic Sheet..... \$4500

Corporate Use License (add to study price) * + \$ 2300

___ Additional Print Copies @ \$500 each *
Total (including selected option) \$_____

Enclosed is my check (5% discount) drawn on a US bank and payable to The Freedonia Group, Inc., in US funds (Ohio residents add 7.75% sales tax)

Bill my company American Express MasterCard Visa

Credit Card #

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

MM YY
Expiration

--	--	--	--

Signature _____

Name _____

Title _____

Company _____

Division _____

Street _____
(No PO Box please)

City/State/Zip _____

Country _____

Phone _____ Fax _____

Email _____

* Please check appropriate option and sign below to order an electronic version of the study.

Corporate Use License Agreement

The above captioned study may be stored on the company’s intranet or shared directory, available to company employees. Copies of the study may be made, but the undersigned represents that distribution of the study will be limited to employees of the company.

Signature _____

Individual Use License Agreement

The undersigned hereby represents that the above captioned study will be used by only ___ individual(s) who are employees of the company and that the study will not be loaded on a network for multiple users. In the event that usage of the study changes, the Company will promptly notify Freedonia of such change and will pay to Freedonia the appropriate fee based on Freedonia’s standard fee schedule then in effect. Note: Entire company corporate use license, add \$2300; one additional user, add \$500; two additional users, add \$1000; three additional users, add \$1500.

Signature _____

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

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

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, the emerging China market, and other world markets. Industries analyzed by Freedonia include:

- Chemicals • Plastics • Life Sciences • Packaging • Building Materials • Security & Electronics • Industrial Components & Equipment • Automotive & Transportation Equipment • Household Goods • Energy/Power Equipment

[Click here to learn more about Freedonia](#)

Freedonia Custom Research

Freedonia Custom Research delivers the same high quality, thorough and unbiased assessment of an industry or market as an industry study. Since the research initiative is based upon a company's specific needs, companies harness Freedonia's research capabilities and resources to answer unique questions. When you leverage the results of a Freedonia Custom Research engagement, you are able to obtain important answers to specific questions and issues associated with: mergers and acquisitions, new product launches/development, geographic expansion, entry into new markets, strategic business planning, and investment and funding decisions.

Freedonia Custom Research is ideal for companies seeking to make a strategic difference in the status quo and focus on future business growth. Working side by side with clients, Freedonia's team is able to define a research project that is custom-tailored to answer specific questions and provide the basis from which a company can make informed business decisions.

[Click here to learn more about Custom Research](#)



[Click here for complete title list](#)

[Click here to visit freedoniagroup.com](http://www.freedoniagroup.com)