



[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](#)

Green Packaging

US Industry Study with Forecasts for **2013 & 2018**

Study #2471 | March 2009 | \$4700 | 343 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	5
Demographic & Household Trends	9
Consumer Income & Spending	12
Retail Sales	14
Manufacturing Outlook	16
Packaging Industry Overview	19
Environmental & Regulatory Considerations	23
Recycling Regulations	25
Solid Waste Issues	27
Landfill Space	29
Recycling	30
Combustion & Incineration	32
Composting Programs	33
Degradability Standards	34
International Activity	37

GREEN PACKAGING OVERVIEW

Definition of Green Packaging	40
Source Reduction	45
Recycling	48
Paper	50
Metal	52
Glass	53
Plastic	54
Renewable Resources	58
Nontoxic Materials	59
Energy Efficiency	61
Packaging Cost	63
Standards & Certification Programs	63

RECYCLED CONTENT PACKAGING

General	67
Materials	70
Paper	71
Boxes	73
Corrugated Boxes	74
Folding Cartons	75
Set-Up Boxes	76
Other Paper Packaging	77
Protective Packaging	78
Composite Cans	79
Molded Pulp	79
All Other	80

Metal	81
Aluminum	82
Steel	84
Plastic	86
Glass	90
Markets	93

REUSABLE PACKAGING

General	96
Drums	99
Reusable Plastic Containers	102
Intermediate Bulk Containers	106
Other	109
Markets	111

BIODEGRADABLE PLASTIC PACKAGING

General	115
Containers	118
Film	122
Ring Carriers	126
Cups, Plates & Bowls	128
Loose-Fill	131
Materials	133
Starch-Based Plastics	137
Polylactic Acid	140
Other	142
Markets	146

MARKETS

General	150
Food	153
Food Industry Outlook	153
Green Packaging Demand	155
Recycled Content Packaging	156
Biodegradable Plastic & Reusable Packaging	158
Consumer Products	159
Recycled Content Packaging	160
Biodegradable Plastic & Reusable Packaging	162
Beverages	164
Beverage Industry Outlook	164
Green Packaging Demand	166
Recycled Content Packaging	167
Biodegradable Plastic & Reusable Packaging	170

Chemicals	171
Chemical Industry Outlook	172
Green Packaging Demand	175
Reusable Packaging	176
Recycled Content Packaging	176
Shipping	177
Recycled Content Packaging	178
Reusable Packaging	179
Biodegradable Plastic Packaging	180
Foodservice	181
Foodservice Industry Outlook	181
Green Packaging Demand	183
Recycled Content Packaging	184
Biodegradable Plastic Packaging	185
Other	186

INDUSTRY STRUCTURE

General	189
Market Leaders	190
Recycled Content Packaging	194
Reusable Packaging	195
Biodegradable Packaging	197
Acquisitions & Divestitures	198
Competitive Strategies	203
Manufacturing	206
Marketing	208
Distribution	210
Cooperative Agreements	211

COMPANY PROFILES

Amcor Limited	218
Associated Packaging Technologies	220
Ball Corporation	221
Bemis Company	224
Caraustar Industries	227
Cargill Incorporated	229
Cereplast Incorporated	231
Clear Lam Packaging	233
Coextruded Plastic Technologies	235
Crown Holdings	237
D. Logistics AG	240
DuPont (EI) de Nemours	241
Fabri-Kal Corporation	243
Graham Packaging	245
Graphic Packaging	248
Greif Incorporated	250
Huhtamaki Oyj	255
Illinois Tool Works	258

(continued on next page)

Table of Contents

(continued from previous page)

COMPANY PROFILES

Impaxx Incorporated	261
Innovia Films	262
International Paper	264
Kloeckner Pentaplast	269
Koch Industries	270
KW Plastics	273
MAUSER AG	274
MeadWestvaco Corporation	277
Menasha Corporation	281
Metabolix Incorporated.....	284
Myers Industries	286
Owens-Illinois Group	288
Packaging Dynamics	290
Pactiv Corporation.....	291
Plastic Suppliers	293
Plastipak Holdings	295
Pregis Corporation.....	296
Printpack Incorporated	300
Rexam plc.....	301
Reynolds Packaging.....	303
Rio Tinto Group	305
Rock-Tenn Company	307
Saint-Gobain	311
SCHUETZ GmbH.....	313
Sealed Air Corporation	315
Smurfit-Stone Container.....	319
Sonoco Products	322
Temple-Inland Incorporated.....	326
Tetra Laval International.....	328
Visy Pty Limited	330
Wilkinson Industries.....	332
Other Companies Mentioned in Study	334

List of Tables/Charts

EXECUTIVE SUMMARY

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

MARKET ENVIRONMENT

1 Macroeconomic Indicators	9
2 Population & Households.....	12
3 Personal Consumption Expenditures	14
4 Retail Sales	16
5 Manufacturers' Shipments	19
6 Packaging Demand by Material & Market ..	23

7 Municipal Solid Waste Management by Process	29
--------------------------------------------------------	----

GREEN PACKAGING OVERVIEW

1 Green Packaging Demand by Type	44
Cht Green Packaging Demand by Type, 2008...	44
2 Selected Packaging Recycling Rates	50

RECYCLED CONTENT PACKAGING

1 Recycled Content Packaging Demand by Type	69
Cht Recycled Content Packaging Demand by Material, 1998-2018.....	69
Cht Recycled Content Packaging Share of Total Packaging Demand by Material, 2008 ...	70
2 Paper Recycled Content Packaging Demand by Type	73
3 Recycled Content Box Demand by Type	74
4 Other Recycled Content Paper Packaging Demand by Type	78
5 Metal Recycled Content Packaging Demand by Material.....	82
6 Plastic Recycled Content Packaging Demand by Type & Material	90
7 Glass Bottle Recycled Content Packaging Demand	93
8 Recycled Content Packaging Demand by Market	95
Cht Recycled Content Packaging Demand by Market, 2008.....	95

REUSABLE PACKAGING

1 Reusable Packaging Demand by Type	98
Cht Reusable Packaging Demand by Type, 2008	98
2 Reusable Drum Demand by Type.....	102
3 Reusable Plastic Container Demand	106
4 Reusable Intermediate Bulk Container Demand by Type	109
5 Other Reusable Packaging Demand	111
6 Reusable Packaging Demand by Market ..	114
Cht Reusable Packaging Demand by Market, 2008	114

BIODEGRADABLE PLASTIC PACKAGING

1 Biodegradable Plastic Packaging Demand by Type	117
-----------------------------------------------------------	-----

Cht Biodegradable Plastic Packaging Demand by Type, 2008.....	117
2 Biodegradable Plastic Container Demand.....	121
3 Biodegradable Plastic Packaging Film Demand	125
4 Biodegradable Plastic Ring Carrier Demand.....	127
5 Biodegradable Plastic Cup, Plate & Bowl Demand	130
6 Biodegradable Plastic Loose-Fill Demand.....	133
7 Biodegradable Plastic Packaging Demand by Material.....	136
Cht Biodegradable Plastic Packaging Demand by Material, 2008.....	136
8 Starch-Based Biodegradable Plastic Packaging Demand	139
9 Polylactic Acid Packaging Demand.....	142
10 Other Biodegradable Packaging Material Demand.....	145
11 Biodegradable Plastic Packaging Demand by Market	148
Cht Biodegradable Plastic Packaging Demand by Market, 2008.....	149

MARKETS

1 Green Packaging Demand by Market.....	152
Cht Green Packaging Demand by Market, 2008	153
2 Food Shipments	155
3 Food Market for Green Packaging	156
4 Consumer Products Market for Green Packaging	160
5 Beverage Shipments	166
6 Beverage Market for Green Packaging	167
7 Chemical Product Shipments	174
8 Chemical Market for Green Packaging.....	175
9 Shipping Market for Green Packaging.....	178
10 Foodservice Revenues by Establishment Type	183
11 Foodservice Market for Green Packaging .	184
12 Other Markets for Green Packaging	188

INDUSTRY STRUCTURE

1 Selected Green Packaging Companies.....	191
2 Selected Acquisitions & Divestitures.....	201
3 Selected Cooperative Agreements.....	215

[Click here to purchase online](#)

The fastest gains are anticipated for biodegradable plastic packaging, driven by better price competitiveness and lower pricing volatility than petroleum-based plastic packaging materials.

US demand to grow 3.4% annually through 2013

US demand for green packaging -- comprised of recycled content, biodegradable and reusable packaging -- is projected to increase 3.4 percent annually to \$43.9 billion in 2013. Growth will outpace overall packaging but will remain modest due to the maturity of many products and the fact that recycled content packaging has a large existing presence in paperboard and metal packaging.

Biodegradable plastic packaging to grow fastest

The fastest gains are anticipated for biodegradable plastic packaging. Gains in this segment will be driven by increased price competitiveness with conventional resins, rapidly expanding capacity and lower pricing volatility than petroleum-based plastic packaging materials. Additional stimulants include enhanced performance properties brought about by more sophisticated polymerization and blending techniques; efforts by brand owners to improve the environmental footprint of their packaging; and legislative bans on polystyrene foam foodservice disposables in some parts of the country. Preventing faster advances will be capacity limitations and disposal problems due to the lack of consumer composting networks in most areas of the US.



Recycled packaging to be driven by plastic types

While recycled content packaging demand is expected to increase in line with the overall green packaging average, robust growth for plastic recycled content packaging will be aided by more concerted efforts to boost collection volume, an increased focus on the development of food-contact approved resin grades, and further sustainability initiatives by plastic processors and brand owners. Gains will be moderated by slow growth for paper recycled content packaging, which is dominated by the large but mature corrugated and paperboard box segment.

Plastic containers, IBCs to pace reusable packaging

Reusable packaging is forecast to expand more slowly, held back by marginal growth for drums, which face competition from larger formats such as intermediate bulk containers (IBCs). More favorable prospects are anticipated for reusable plastic containers, IBCs and other reusable packaging types. In general, value gains will decelerate due to an expected moderation in raw material prices, especially for plastic and steel. The relatively long service life of most reusable packaging also limits the need for replacements, a factor that restricts growth in demand for new units.

Sample Text, Table & Chart

BIODEGRADABLE PLASTIC PACKAGING

Starch-Based Plastics

Demand for biodegradable starch-based plastic packaging is projected to increase 5 million pounds. Growth will reflect greater availability of improved resin blends. Consumers are demanding environmentally-friendly products due to solid waste sustainability and the desire to use starch-based resins.

SAMPLE TEXT

Above-average gains are anticipated for cups, plates and containers. Gains in these markets will be predicated on spending for food eaten or prepared away from home and the rising popularity of biodegradable disposable plates and bowls for home use. Additionally, increased demand will result from efforts to divert materials from landfills and increase the use of sustainable materials. Biodegradable loose-fill packaging demand will rise more slowly based on competition from expanded polystyrene loose-fill, as well as bubble packaging and air pillows.

Starch is an inexpensive material that is available year round. It is also biodegradable within various environments. There are two basic types of starch-based plastics: thermoplastic starch (containing between 75 percent and 95 percent starch) and starch blends with synthetic polymers (containing between 60 percent and 75 percent starch). Early biodegradable plastics were not fully degradable because the corn starch would decompose, leaving behind a nondegradable polyethylene residue, or starch would be trapped within the polyethylene, which protected the starch from the forces of decomposition. These drawbacks initially gave biodegradable plastics a bad reputation. Newer generations of biodegradable plastics are formulated to degrade completely to carbon dioxide, water and harmless biomass. Starch-based plastic can be fabricated on the same machinery as conventional plastic, and can be colored and

137

Copyright 2009 The Freedonia Group, Inc.

TABLE V-2

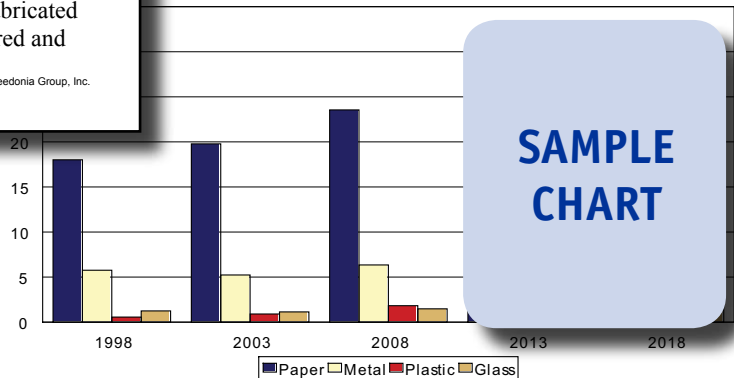
REUSABLE DRUM DEMAND BY TYPE
(million dollars)

Item	1998	2003	2008	2013	2018
Nondurable Goods Shipments (bil \$)					
\$ drums/000\$ nondurables					
Reusable Drum Demand					
Steel					
Plastic					
Fibre					
\$/lb					
Reusable Drum Demand (mil lbs)					
% drum					
Total Reusable Packaging (mil lbs)	21				20

SAMPLE TABLE

CHART IV-1

RECYCLED CONTENT PACKAGING DEMAND BY MATERIAL, 1998-2018
(billion dollars)



SAMPLE CHART

Sample Profile, Table & Forecast

TABLE VII-9
SHIPPING MARKET FOR GREEN PACKAGING
 (million dollars)

Item	1998	2003	2008	2013	2018
Gross Domestic Product (bil \$)	87	115	141	168	195
\$ green pkg/000\$ GDP	0.0001	0.0001	0.0001	0.0001	0.0001
Shipping Green Packaging Demand	1	1	1	1	1
Recycled Content					
Reusable Packaging					
Biodegradable					
% shipping					
Total Green Packaging Demand	27	27	27	27	27



COMPANY PROFILES

Clear Lam Packaging Incorporated
 1950 Pratt Boulevard
 Elk Grove Village, IL 60007
 847-439-8570
<http://www.clearlam.com>

Annual Sales (2008/09)
 Employment (2008/09)

Key Products: stock and flexible films

Clear Lam Packaging produces films and laminates, thermoformed containers and other products for packaging. The Company operates in three divisions: Clear Lam Thermoforming, Clear Lam Rigid Rollstock and Flexible Films. In March 2008, Clear Lam sold a fourth division, MAP Systems Equipment, to Packaging Technologies Incorporated (Davenport, Iowa).

The Company is active in the US green packaging industry via all three divisions. The Company's Clear Lam Thermoforming division manufactures thermoformed containers suitable for packaging baked goods, delicatessen items, candy, produce and meats. These containers are available in clear and pigmented types in multicompartment, round, octagonal, rectangular, square and hinged-lid configurations, among other styles. Clear Lam Packaging produces thermoformed containers from amorphous polyethylene terephthalate (APET), as well as NATUREWORKS polylactic acid (PLA) from NatureWorks LLC (Minnetonka, Minnesota), a 50/50 joint venture held between Cargill Incorporated (Minneapolis, Minnesota) and Teijin Limited (Japan). NATUREWORKS PLA resin is derived entirely from natural corn

233 Copyright 2009 The Freedonia Group, Inc.



"Demand for reusable packaging in the chemical market is expected to rise 1.4 percent per year to \$1.8 billion in 2013. Below-average advances will reflect slow growth for drums due to competition from larger capacity bulk packaging types such as intermediate bulk containers (IBCs) along with more moderate price increases following spikes in raw material costs in the 2003-2008 period. Additionally, limited expansion in chemical production will constrain opportunities for drums since chemicals are the largest drum market. Other reusable packaging types, such as ..."

--Section VII, pg. 176

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.2471

Green Packaging \$4700

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 # grid

Credit Card #

Expiration MM YY grid

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

World Corrugated Boxes

This study analyzes the global corrugated box industry. It presents historical demand data for the years 1998, 2003 and 2008 and forecasts for 2013 and 2018 by containerboard grade (kraft linerboard, semichemical medium, recycled board), corrugated box market (food and beverages, other), world regional market (e.g., Asia/Pacific, North America, Western Europe) and major national market. The study also considers market environment factors, evaluates company market share and profiles industry participants.

#2485 04/2009..... \$5600

Beverage Containers in China

This study analyzes the beverage container industry in China. It presents historical demand data for the years 1997, 2002 and 2007 and forecasts for 2012 and 2017 by beverage container market (e.g., milk, carbonated soft drinks, water, fruit beverages, teas, beer, distilled spirits, rice wine, wine) and material (e.g., plastic, glass, paperboard, metal, ceramic). The study also considers market environment factors, details industry structure, evaluates company market share and profiles industry participants.

#2484 04/2009..... \$5200

Paper vs Plastic in Packaging

US demand for plastic packaging will continue to outpace paper in markets where they compete, albeit more slowly as applications mature. The fastest market share increases for plastic will occur in pet food and soy beverage packaging, followed by protective packaging, foodservice and dairy products, among others. This study analyzes selected competitive markets in the US for paper and plastic packaging, with forecasts for 2012 and 2017 by material and market. It also discusses market leaders and profiles industry players.

#2443 01/2009..... \$4700

Cups & Lids

US demand for cups and lids will advance 4.3% annually through 2012. Drinking cups will remain the dominant cup type while packaging cups will grow the fastest. Growth in lids will outpace cups as more drinking cups use lids, especially higher-value specialty lids. Foodservice will remain the dominant market while food packaging grows more rapidly. This study analyzes the \$6.3 billion US cup and lid industry, with forecasts for 2012 and 2017 by product and market. It also details market share and profiles major players.

#2429 11/2008..... \$4600

Beverage Containers

US demand for beverage containers will grow 2.4% annually through 2012. Gains will be driven a healthy outlook for single serving containers and enhanced or functional beverages. Plastic containers will remain the largest and fastest growing segment. Bottled water will continue to post above-average market gains. This study analyzes the \$22.5 billion US beverage container industry, with forecasts for 2012 and 2017 by type and market. It also evaluates company market share and profiles major players.

#2423 11/2008..... \$4700

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)