Packaging Inks, Coatings & Additives

US Industry Study with Forecasts for 2013 & 2018

Study #2587 | December 2009 | $4600 | 260 pages
Table of Contents

EXECUTIVE SUMMARY

MARKET ENVIRONMENT

General ................................................. 4
Macroeconomic Outlook ............................ 4
Demographic Outlook ................................ 9
Personal Consumption Expenditures ............ 12
Manufacturing Outlook ............................. 14
Packaging Industry Overview ................. 17

Paper & Paperboard Packaging .......... 19
Plastic Packaging ................................. 21
Metal Packaging ................................... 22
Glass Packaging .................................... 23
Flexible Packaging ................................ 24

Environmental & Regulatory Considerations ........................................ 26
Competitive Products ............................... 33
Historical Market Trends ...................... 34
Pricing Trends ........................................ 37
International Activity & Foreign Trade .... 39

OVERVIEW

General .................................................. 42
Demand by Value ................................... 43
Demand by Volume ................................. 45
Demand by Substrate ............................. 47
Demand by Packaging Type ................. 50

Rigid Packaging .................................... 54
Metal Containers ................................. 56
Paperboard Containers ....................... 59
Plastic Containers ................................. 61
Glass & Other Containers ................. 65
Flexible Packaging ............................. 67

PACKAGING ADDITIVES

General .................................................. 137
Demand by Type .................................... 138
Stabilizers ........................................... 140
Clarifiers ............................................. 142
Antimicrobial Agents ......................... 144
Oxygen Scavengers .............................. 147
Antioxidants ....................................... 150
Other Additives .................................... 151
Impact Modifiers ................................. 152
Colorants ........................................... 153
Antistatic Agents ................................. 154
Brightening Agents ............................ 155
All Other Packaging Additives .......... 156
Demand by Substrate ............................. 157
Demand by Packaging Type ................. 158

Rigid Packaging .................................... 161
Plastic Containers ................................. 162
Paperboard & Other Containers .......... 163
Flexible Packaging ............................. 164
Suppliers & Market Share ................. 165

PACKAGING INKS

General ............................................... 70
Demand by Substrate ............................. 71
Demand by Formulation ....................... 72
Demand by Type .................................... 75

Flexographic ....................................... 77
Lithographic ....................................... 78
Gravure ............................................. 80
Letterpress .......................................... 82
Other ................................................... 83
Demand by Packaging Type ................. 84

Rigid Packaging .................................... 86
Paperboard Containers ....................... 88

Plastic Containers ..................... 90
Metal Containers ................................. 92
Glass & Other Rigid Containers ........... 94
Flexible Packaging ......................... 95
Suppliers & Market Share .......... 98

PACKAGING COATINGS

General ................................................. 101
Demand by Substrate ............................. 102
Demand by Formulation ....................... 104
Water-Based ....................................... 106
Solvent-Based ...................................... 107
Radiation-Cured ................................. 107
Powder ............................................. 109

Demand by Polymer ............................. 110
Demand by Packaging Type ................. 113

Rigid Packaging .................................... 115
Metal Containers ................................. 117
Cans ................................................. 120
Drums, Pails & Other ......................... 122

Paperboard Containers ....................... 123
Demand by Polymer ............................. 125
Demand by Function ............................ 126
Demand by Packaging Type ................. 127

Plastic Containers ................................. 128
Glass & Other Rigid Containers .......... 129
Flexible Packaging ............................. 131
Suppliers & Market Share ................. 134

INdUSTRY STRUCTURE

General ................................................. 169
Market Share ....................................... 172
Competitive Strategies ....................... 174
Acquisitions & Divestitures ............... 175
Marketing & Distribution ................. 177
Manufacturing .................................... 179
Research & Development ............... 180

COMPANY PROFILES

Akzo Nobel ........................................... 183
AllCoat Technology .............................. 185
American Inks & Coatings ................... 186
Arkema ............................................. 187
Ashland Incorporated ......................... 189
BASF SE ............................................. 191
Chemtura Corporation ......................... 194
Clariant International ......................... 196
Color Resolutions International ........... 198
Crown Holdings .................................. 200
Cytec Industries .................................. 202
DICCorporation .................................. 204
Dow Chemical ..................................... 208
Dow Corning ....................................... 211
Eastman Chemical .............................. 212
EFI Incorporated .................................. 214
Enviro-Coatings Canada ..................... 216
Flint Group ......................................... 218
Grace (WR) & Company ....................... 219
Graphic Packaging .............................. 221
Henkel AG & Company ......................... 223
Honeywell International ....................... 225
Huber Group ....................................... 227
Jamestown Coating Technologies ....... 229
Koch Industries ................................... 231
Michelman Incorporated ...................... 233
Milliken & Company ............................. 236
Owens-Illinois Group ......................... 237
PPG Industries .................................... 239
Sacata INX ........................................... 241
Sealed Air .......................................... 243
Siegewerk Druckfarben ...................... 245
Superior Printing Ink ......................... 246
Toyo Ink Manufacturing .................... 247
Valspar Corporation ......................... 249
Vertis Incorporated ......................... 251
Wacker-Chemie AG ............................. 253
Watson-Standard Corporation ............ 256
Wikoff Color ....................................... 257

Other Companies Mentioned in Study .... 259

Click here to purchase online
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 Manufacturers’ Shipments ....................17
5 Packaging Supply & Demand ...............19
6 Paper & Paperboard Packaging Shipments ..................20
7 Plastic Container Shipments ..............22
8 Metal Can Shipments by Type & Material ..........23
9 Glass Container Production ...............24
10 Flexible Packaging Demand ..............26
11 Packaging Inks, Coatings & Additives Market, 1998-2008 ......36
Cht Packaging Inks, Coatings & Additives Market, 1998-2008 ..........37
12 Packaging Inks, Coatings & Additives Pricing ..................39

OVERVIEW
1 Packaging Inks, Coatings & Additives Demand by Value ..................45
2 Packaging Inks, Coatings & Additives Demand by Volume ..........47
3 Inks, Coatings & Additives Demand by Packaging Substrate ..........49
Cht Inks, Coatings & Additives Demand by Packaging Substrate, 2008 ......50
4 Inks, Coatings & Additives Demand by Packaging Type ............53
Cht Inks, Coatings & Additives Demand by Packaging Type, 2008 ......54
5 Rigid Packaging: Inks, Coatings & Additives Demand by Type & Substrate ..........56
6 Metal Containers: Coatings & Inks Demand ..........58
7 Paperboard Containers: Inks, Coatings & Additives Demand ..........61
8 Advantages & Disadvantages of Selected Plastic Packaging Resins..62
9 Plastic Containers: Inks, Coatings & Additives Demand by Type & Container Type ..........65
10 Glass & Other Rigid Containers: Coatings & Inks Demand ..........67
11 Flexible Packaging: Inks, Coatings & Additives Demand by Type & Substrate ..........69

PACKAGING INKS
1 Packaging Inks Demand by Substrate 72
2 Packaging Inks Demand by Formulation ....................75
3 Packaging Inks Demand by Type ..........76
4 Inks Demand by Packaging Type ..........86
5 Rigid Packaging: Inks Demand by Substrate ..........87
6 Paperboard Containers: Inks Demand by Type & Packaging Type ..........90
7 Plastic Containers: Inks Demand by Type & Container Type ..........92
8 Metal Containers: Inks Demand by Type & Material ..........94
9 Glass & Other Rigid Containers: Inks Demand ..........95
10 Flexible Packaging: Inks Demand by Type & Substrate ..........98
Cht Packaging Inks Market Share by Company, 2008 ..................100

PACKAGING COATINGS
1 Packaging Coatings Demand by Substrate ..................104
2 Packaging Coatings Demand by Formulation ..................106
3 Packaging Coatings Demand by Polymer ....................113
4 Coatings Demand by Packaging Type 115
5 Rigid Packaging: Coatings Demand by Substrate ..........117
6 Metal Containers: Coatings Demand by Polymer & Container Type ..........120
7 Metal Cans: Coatings Demand by Polymer & Material ..........122
8 Paperboard Containers: Coatings Demand by Polymer, Function & Packaging Type ..........124
9 Plastic Containers: Coatings Demand by Polymer & Container Type ..........129
10 Glass & Other Rigid Containers: Coatings Demand by Polymer & Substrate ..........131
11 Flexible Packaging: Coatings Demand by Polymer & Substrate ..........134
Cht Packaging Coatings Market Share by Company, 2008 ..................136

PACKAGING ADDITIVES
1 Packaging Additives Demand by Formulation ..................140
2 Stabilizer Demand by Type & Packaging Type ..................142
3 Clarifier Demand by Packaging Type 144
4 Antimicrobial Agent Demand ..................147
5 Oxygen Scavenger Demand .................149
6 Antioxidant Demand ..................151
7 Other Packaging Additives Demand ..........152
8 Packaging Additives Demand by Substrate ..........158
9 Additives Demand by Packaging Type ..........160
10 Rigid Packaging: Additives Demand by Substrate ..........162
11 Plastic Containers: Additives Demand ..........163
12 Paperboard & Other Containers: Additives Demand ..........164
13 Flexible Packaging: Additives Demand by Substrate ..........165
Cht Packaging Additives Market Share by Company, 2008 ..................168

INDUSTRY STRUCTURE
1 US Packaging Inks, Coatings & Additives Sales by Company, 2008 171
2 Selected Acquisitions & Divestitures 177
Overall packaging ink, coating and additive demand will benefit from efforts to make packaging more environmentally friendly, which will promote the use of bioplastics and flexible packaging.

US demand to reach $3 billion in 2013

US demand for packaging inks, coatings and additives is forecast to expand 2.5 percent annually to $3.0 billion in 2013, with volume rising to 1.4 billion pounds. Value gains are expected to decelerate from the pace of the 2003-2008 period due to an expected moderation in pricing. However, market volume is projected to grow somewhat faster due to improving real growth in packaging production. Overall demand will benefit from efforts to make packaging more environmentally friendly, which will promote the use of bioplastics and flexible packaging. This in turn will support the development of new high performance products designed to be sustainable and efficient, including powder coatings, energy-curable inks and coatings, and additives specifically formulated to enhance the properties of bioplastics.

Packaging additives to be fastest growing segment

Among the three product categories, packaging inks account for the single largest share of market value. Flexographic inks will remain the leading type of ink used on packaging, supported by the growing popularity of flexible packaging, which utilizes flexographic printing as its process of choice. Smaller and increasingly sophisticated job runs will also favor flexographic inks, based on improvements in both quality and consistency which have enabled them to compete with other inks, including gravure and lithographic types.

Packaging coatings market value will benefit from growing demand for more environmentally friendly products, such as powder and radiation-curable coatings, which provide greater efficiency. Although increased efficiency will limit volume gains, these formulations are priced higher than conventional products, thus supporting overall market value. Additionally, growing use of coatings that provide advanced performance characteristics, such as increased barrier properties and moisture resistance, will promote advances. However, gains will be restrained by the fact that coatings continue to find much of their use in the more mature packaging segments, including metal, paperboard and glass containers.

Packaging additives are projected to achieve the most rapid gains through 2013, with plastic packaging accounting for the vast majority of demand. Additives can be used to improve the clarity, strength, shatter resistance and barrier properties of plastic. For example, polypropylene would find minimal use in the packaging industry were it not for antioxidants and clarifying agents. Additionally, source reduction efforts will promote the use of thinner materials, which will aid additives demand, as thinner plastics typically require more additives and more advanced formulations per unit.
The packaging market for flexographic inks is forecast to increase 2.6 percent annually to 185 million pounds in 2013. This represents a significant increase from the 2008 level. Demand will be aided by advances in flexible packaging printing, which utilizes flexographic processing. Flexible packaging is largely used in food-related applications, which has somewhat limited the impact of recent economic difficulties on flexographic inks demand. Future demand will also be driven by smaller and increasingly sophisticated jobs, benefiting from improvements in both quality and consistency which will enable them to effectively compete with other inks, such as gravure and lithographic types. Overall advances will be further promoted by greater demand for UV flexo inks due to their environmental advantages.

The flexographic process utilizes flexible, raised plates to transfer an image onto a substrate. Flexo plates are mounted on a cylinder and are inked with anilox rollers containing minute recessed cells. Flexography has lower equipment and labor costs than do letterpress or lithographic processes, and since it does not require ink/water balancing, this process is much more efficient and less costly than gravure printing, for example.

Flexographic inks are liquid formulations available in both solvent- and water-based versions. Growing environmental concerns have also accelerated the development of UV and electron beam technology, which are forecast to experience rapid growth at the expense of water-based and solvent-based types. Water-based formulations benefit from improved wash-up times and lower volatile organic compound content, lowered fire/safety hazards, and heat resistance. Additionally, users of solvent-based inks remain under pressure to eliminate hazardous air pollutants. However, solvent-based formulations can provide higher gloss, better edge definition, and cleaner edge-to-edge register compared to water-based inks.
Sample Profile, Table & Forecast

COMPANY PROFILES

Color Resolutions International
575 Quality Boulevard
Fairfield, OH 45014
800-543-1670
http://www.colorresolutions.com

Annual Sales: $50 million (estimated)
Employment: 125 (estimated)

Key Products: aqueous and metallic inks for corrugated packaging, ice cream container and cup, bag, folding carton and other end uses

Color Resolutions is a manufacturer of inks for corrugated packaging, specialty and security applications. The Company is privately held.

The Company participates in the US packaging inks, coatings and additives industry through the production of inks for corrugated packaging and specialty applications. Color Resolutions produces various inks using its proprietary INKCHEMISTRY system, which includes laboratory, technical, and manufacturing activities. The INKCHEMISTRY system uses over 40 ink base concentrates, which can be combined with more than twelve blending vehicles and a range of color-dispersing additives. These combinations are then modified for use with specific substrates and applications, including flexographic and gravure printing, and coatings.

Corrugated packaging inks from Color Resolutions include BOX BLACK, CASCADE WHITE, CLIC-N-KOTE, HI GRAPHICS T, HYDRO FLUORESCENT and NEWTROL types. BOX BLACK aqueous inks are engineered for flexographic printing on high-speed, multi-unit

TABLE VI-1
PACKAGING ADDITIVES DEMAND BY FORMULATION
(million dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>1998</th>
<th>2003</th>
<th>2008</th>
<th>2013</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packaging Shipments (bil $)</td>
<td>96.4</td>
<td>102.8</td>
<td>124.7</td>
<td>135.0</td>
<td>154.0</td>
</tr>
<tr>
<td>$ additives/000$ packaging</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Packaging Additives Demand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stabilizers</td>
<td>73</td>
<td>84</td>
<td>92</td>
<td>94</td>
<td>100</td>
</tr>
<tr>
<td>Clarifiers</td>
<td>28</td>
<td>45</td>
<td>71</td>
<td>100</td>
<td>140</td>
</tr>
<tr>
<td>Oxygen Scavengers</td>
<td>--</td>
<td>23</td>
<td>50</td>
<td>85</td>
<td>140</td>
</tr>
<tr>
<td>Antioxidants</td>
<td>23</td>
<td>30</td>
<td>43</td>
<td>53</td>
<td>65</td>
</tr>
<tr>
<td>Antimicrobial Agents</td>
<td>23</td>
<td>28</td>
<td>38</td>
<td>47</td>
<td>58</td>
</tr>
<tr>
<td>Other</td>
<td>93</td>
<td>110</td>
<td>146</td>
<td>171</td>
<td>207</td>
</tr>
<tr>
<td>S/lb</td>
<td>2.82</td>
<td>3.20</td>
<td>4.19</td>
<td>4.58</td>
<td>5.26</td>
</tr>
<tr>
<td>Packaging Additives Demand</td>
<td>85</td>
<td>100</td>
<td>105</td>
<td>120</td>
<td>135</td>
</tr>
</tbody>
</table>

“Demand for oxygen scavengers in the packaging industry is forecast to expand nearly ten percent annually to eight million pounds in 2013. Rapid gains in oxygen scavenger demand will result from continued development of new applications in plastic packaging. In particular, increased demand for PET bottles in applications requiring high barrier requirements will support advances. Trends favoring the elimination of trans fats will also promote growth, as such foods can spoil or discolor more rapidly than foods containing trans fats. However, ...”

--Section VI, pg. 147
The Freedonia Group, Inc. 767 Beta Drive • Cleveland, OH • 44143-2326 • USA • Web site: www.freedoniagroup.com
Tel US: 800.927.5900 or +1 440.684.9600 • Fax: +1 440.646.0484 • e-mail: info@freedoniagroup.com

[Image -1x-1 to 613x106]
[Image -1x687 to 613x793]

Order Information

Five Convenient Ways to Order

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 $2600, 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

Packaging Ink, Coatings & Additives ............... $4600

☐ Corporate Use License (add to study price) *

☐ 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)

☐ Additional Print Copies @ $600 each *

☐ Bill my company ☐ American Express ☐ MasterCard ☐ Visa

☐ 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 $2600; one additional user, add $600; two additional users, add $1200; three additional users, add $1800.

☐ 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.

Name __________________________________________
Title __________________________________________
Company _________________________________________
Division _________________________________________
Street ______________________ (No PO Box please)
City/State/Zip ________________________________
Country ________________________________________
Phone ________________________________________
Fax __________________________________________
Email _________________________________________

Corporate Use License Agreement
Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, 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.

Corporate Use License Agreement
Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, 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.

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 $2600, 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

Packaging Ink, Coatings & Additives ............... $4600

☐ Corporate Use License (add to study price) *

☐ 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)

☐ Additional Print Copies @ $600 each *

☐ Bill my company ☐ American Express ☐ MasterCard ☐ Visa

☐ 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 $2600; one additional user, add $600; two additional users, add $1200; three additional users, add $1800.

☐ 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.

Name __________________________________________
Title __________________________________________
Company _________________________________________
Division _________________________________________
Street ______________________ (No PO Box please)
City/State/Zip ________________________________
Country ________________________________________
Phone ________________________________________
Fax __________________________________________
Email _________________________________________

Corporate Use License Agreement
Now every decision maker in your organization can act on the key intelligence found in all Freedonia studies. For an additional $2600, 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.
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

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.