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Packaging Inks, Coatings & Additives

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

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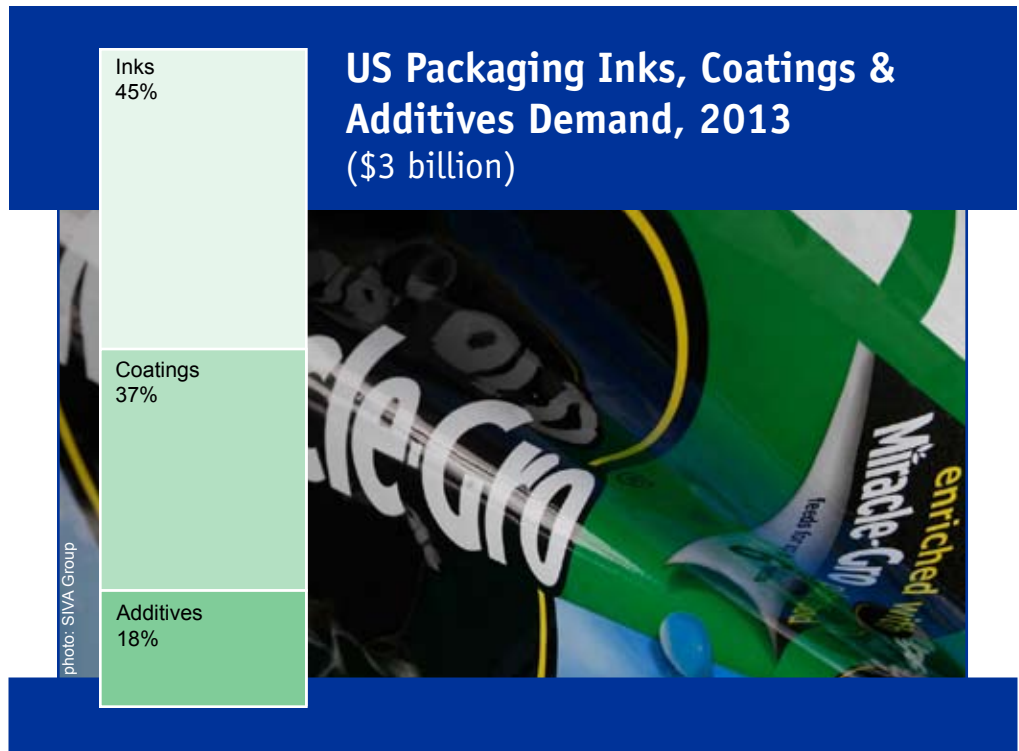
Overall packaging ink, coating and additive demand will benefit from efforts to make packaging more environmentally friendly, which will promote the use of bioplastics and flexible packaging.

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 packag-

ing segments, including metal, paper-board 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.

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**Sample Text,
 Table & Chart**

PACKAGING INKS

Flexographic

The packaging market for flexographic inks is forecast to increase 2.5 million pounds in 2013. Flexographic inks represent 15% of the total ink demand. Demand will be driven by advances in printing, which utilizes flexible packaging is large. Demand for flexographic inks is somewhat limited in recent years due to the demand for flexographic inks demand. Flexographic inks get both smaller and more sophisticated, benefitting from improvements in both quality and consistency which will enable them to effectively compete with other types 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 technologies. Water-based formulations are forecast to experience rapid growth at the expense of water-based solvent-based types. Water-based formulations benefit from their lower volatile organic compound content, lowered fire/safety concerns, improved wash-up time and heat resistance. Additionally, water-based solvent-based inks remain under pressure to eliminate hazardous materials. However, solvent-based formulations can provide high

**SAMPLE
 TEXT**

TABLE V-4

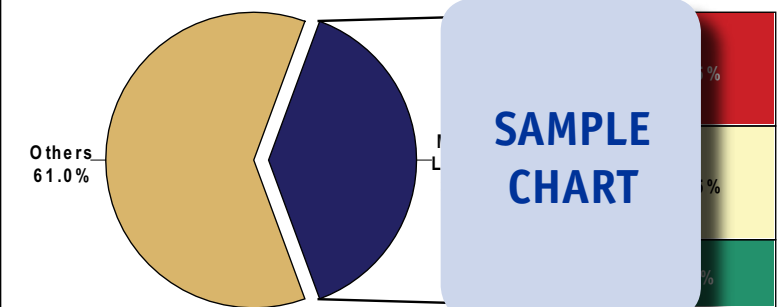
**COATINGS DEMAND BY PACKAGING TYPE
 (million pounds)**

Item	1998	2003	2008	2013	2018
Packaging Coatings Demand					
Rigid Packaging:					
Cans					
Boxes & Cartons					
Bottles & Jars					
Drums, Pails & Other					
Flexible Packaging:					
Film					
Other					
\$/lb					
Packaging Coatings Demand (mil \$)					

**SAMPLE
 TABLE**

CHART VII-1

**US PACKAGING INKS, COATINGS & ADDITIVES
 MARKET SHARE BY COMPANY, 2008
 (\$2.6 billion)**



**SAMPLE
 CHART**

Sample Profile, Table & Forecast

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

Item	1998	2003	2008	2013	2018
Packaging Shipments (bil \$)	96	100	105	110	115
\$ additives/000\$ packaging	0.0001	0.0001	0.0001	0.0001	0.0001
Packaging Additives Demand	9.6	10.0	10.5	11.0	11.5
Stabilizers	0.0	0.0	0.0	0.0	0.0
Clarifiers	0.0	0.0	0.0	0.0	0.0
Oxygen Scavengers	0.0	0.0	0.0	0.0	0.0
Antioxidants	0.0	0.0	0.0	0.0	0.0
Antimicrobial Agents	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0
\$/lb	2.6	2.6	2.6	2.6	2.6
Packaging Additives Demand (mil lbs)	369	385	404	423	442



COMPANY PROFILES

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

Annual Sales:
 Employment:

Key Products: packaging, ice cream contain
 cream contain
 packaging, ice and uses

Color Resolutions International 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

SAMPLE PROFILE

“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

OTHER STUDIES

World Kaolin

Global demand for processed kaolin clay products will reach 24.8 million metric tons in 2013, based in part on an improved paper market, which will offset a slower ceramics market. Strong growth in developing Asian countries will account for most new kaolin demand, with China alone claiming over half of the global gain. This study analyzes the \$3.1 billion world kaolin industry, with forecasts for 2013 and 2018 by market, world region and for 20 countries. It also evaluates company market share and profiles industry players.

#2579 12/2009..... \$5700

Soy Chemicals

US soy chemical demand will grow 7.8% annually through 2013, driven by the continued penetration of biodiesel, and by the adoption of alternatives to traditional, petrochemical-based materials in manufacturing. Soy oil derivatives such as methyl soyate, polyols, soy-based foamed plastics, waxes and fatty acids hold particularly good prospects. This study analyzes the \$1.9 billion US soy chemical industry, with forecasts for 2013 and 2018 by product and market. It also evaluates market share and profiles industry players.

#2538 09/2009..... \$4700

Powder Coatings

US demand for powder coatings is forecast to grow 3.5% annually through 2013. The key motor vehicle market will be the fastest growing segment, followed by construction materials and lawn and garden equipment. Both thermoset and thermoplastic powder coatings will grow at the same pace. This study analyzes the 375 million pound US powder coating industry, with forecasts for 2013 and 2018 by raw material, product and market. It also evaluates company market share and profiles industry competitors.

#2518 06/2009..... \$4700

Waxes

Demand for waxes in the US is forecast to reach \$2.5 billion in 2013. Value gains will be based on a shift to more expensive types. Volume growth will be driven by use of waxes in building boards, coatings, adhesives, plastics and rubber. Petroleum waxes will stay the largest market but will lose share to faster growing synthetic and natural types. This study analyzes the 2.3 billion pound US wax industry, with forecasts for 2013 and 2018 by product and market. It also evaluates market share and profiles industry players.

#2456 04/2009..... \$4600

Printing Inks

US printing ink demand will reach \$4.8 billion in 2013, supported by shifts toward more environmentally friendly ink formulations and digital inks. Among raw materials, additives and colorants will benefit from demand for better performing printing inks with brighter colors. Packaging will remain the largest and fastest-growing market. This study analyzes the US printing ink industry, with forecasts for 2013 and 2018 by raw material, product and market. It also evaluates company market share and profiles industry players.

#2462 02/2009..... \$4700

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