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[Table of Contents 2](#)

[List of Tables & Charts 3](#)

[Study Overview 4](#)

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

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

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# Solvents

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US Industry Study with Forecasts for **2016 & 2021**

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## Table of Contents

### EXECUTIVE SUMMARY

### MARKET ENVIRONMENT

General .....	4
Demographic Trends .....	5
Macroeconomic Outlook .....	8
Consumer Spending .....	11
Manufacturing Outlook.....	14
Food & Beverage Outlook .....	18
Chemical Industry Outlook.....	20
Electronics Industry Outlook.....	23
Plastics & Rubber Industry Outlook.....	25
Petroleum Refining Outlook .....	27
Environmental & Regulatory Issues .....	28
Air Quality Issues.....	30
Worker Safety Issues.....	32
Solvent Recycling.....	33
Historical Market Trends.....	34
Pricing Trends .....	36
International Activity & Foreign Trade .....	38

### PRODUCTS

Demand Overview.....	42
Functions .....	46
Green Solvents .....	49
Alcohols .....	51
Ethanol .....	54
Methanol.....	58
Isopropanol .....	61
Butanol.....	64
Other Alcohols.....	67
Market Share .....	70
Glycols .....	71
Ethylene Glycol.....	73
Propylene Glycol .....	76
E-Series Glycol Ethers .....	79
P-Series Glycol Ethers .....	82
Dipropylene Glycol .....	85
Other Glycols.....	87
Market Share .....	89
Hydrocarbons .....	90
Ketones .....	95
Acetone.....	98
Methyl Ethyl Ketone .....	100
Methyl Isobutyl Ketone .....	102
Other Ketones .....	104
Market Share .....	106
Esters.....	107

Ethyl Acetate .....	109
Butyl Acetate .....	111
Other Esters .....	113
Market Share .....	114
Chlorinated Solvents.....	115
Methylene Chloride.....	119
Perchloroethylene .....	120
Trichloroethylene .....	121
Other Chlorinated Solvents .....	121
Markets .....	122
Market Share .....	123
Butanediol & Derivative Solvents.....	124
Butanediol.....	125
Gamma-Butyrolactone & Derivatives ..	127
Tetrahydrofuran .....	129
Market Share .....	131
Soy Oil & Derivatives .....	132
Terpenes.....	133
Other Solvents.....	135

### MARKETS

General .....	139
Transportation .....	141
Industry Overview .....	141
Solvents Demand .....	143
Paints & Coatings.....	147
Industry Overview .....	148
Solvents Demand .....	149
Printing Inks.....	153
Industry Overview .....	153
Solvents Demand .....	155
Cleaning Products .....	158
Industry Overview .....	158
Solvents Demand .....	160
Cosmetics & Toiletries.....	163
Industry Overview .....	163
Solvents Demand .....	166
Adhesives & Sealants.....	167
Industry Overview .....	168
Solvents Demand .....	170
Chemical Processing .....	172
Industry Overview .....	172
Solvents Demand .....	174
Construction .....	176
Industry Overview .....	176
Solvents Demand .....	179
Other Markets.....	182
Pharmaceuticals.....	183
Asphalt Production.....	186
Dry Cleaning .....	187

Electronic Components.....	189
Plastics & Rubber Processing .....	192
Metal Processing.....	193
Food & Beverage Processing .....	195
Agricultural Chemicals .....	197
Petroleum Refining.....	199
All Other Markets .....	200

### INDUSTRY STRUCTURE

General .....	202
Market Share .....	205
Industry Restructuring .....	208
Competitive Strategies.....	210
Low-Cost Leadership.....	211
Cooperative Agreements.....	211
Product Differentiation .....	213
Research & Development.....	214
Marketing & Distribution .....	215

### COMPANY PROFILES

Archer-Daniels-Midland .....	217
Arizona Chemical .....	219
Arkema SA .....	220
Ashland Incorporated .....	222
BASF SE.....	224
BP plc.....	227
Celanese Corporation .....	228
Chevron Phillips Chemical.....	230
ConocoPhillips.....	232
Croda International .....	233
Dow Chemical.....	235
DuPont (EI) de Nemours.....	242
Eastman Chemical .....	244
Exxon Mobil .....	248
Florida Chemical .....	250
Georgia Gulf.....	252
Honeywell International.....	253
Huntsman Corporation .....	255
Indorama Corporation .....	257
INEOS Group .....	258
Koch Industries .....	260
Lonza Group.....	263
LyondellBasell Industries.....	265
Marathon Petroleum .....	271
Methanex Corporation.....	272
Occidental Petroleum.....	274
OXEA GmbH.....	275
PBF Energy.....	276

(continued on following page)

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## Table of Contents

### COMPANY PROFILES

(continued on following page)

Petroleos de Venezuela .....	277
Phillips 66 .....	279
PPG Industries.....	281
Renessenz LLC .....	283
Royal Dutch Shell.....	284
Solvay SA .....	288
Sunoco Incorporated .....	291
Total SA.....	293
Valero Energy .....	294

## List of Tables/Charts

### EXECUTIVE SUMMARY

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

### MARKET ENVIRONMENT

1 Population & Households .....	8
2 Macroeconomic Indicators .....	11
3 Personal Consumption Expenditures ..	14
4 Manufacturers' Shipments.....	17
5 Food & Beverage Shipments.....	20
6 Chemical Shipments .....	23
7 Electronic Component Shipments.....	25
8 Plastics & Rubber Product Shipments	26
9 Refined Petroleum Products	
Consumption & Production .....	28
10 Solvents Market, 2001-2011 .....	35
Cht Solvents Demand, 2002-2011.....	36
11 Solvents Pricing.....	38

### PRODUCTS

1 Solvents Demand by Product.....	44
Cht Solvents Demand by Type,	
2011: Volume & Value.....	45
2 Solvent Demand by Function.....	48
Cht Solvent Demand by Function, 2011...	48
3 Solvents Demand: Conventional	
vs. Green .....	50
Cht Conventional vs. Green Solvent	
Demand, 2001-2021 .....	51
4 Alcohol Solvents Demand by Type.....	53
Cht Alcohol Solvents Demand	
by Type, 2011 .....	54

5 Ethanol Solvents Demand .....	58
6 Methanol Solvents Demand.....	61
7 Isopropanol Solvents Demand .....	64
8 Butanol Solvents Demand.....	67
9 Other Alcohol Solvents Demand.....	70
Cht Alcohol Solvents Market Share, 2011.	71
10 Glycol Solvents Demand by Type.....	72
Cht Glycol Solvents Demand	
by Type, 2011 .....	73
11 Ethylene Glycol Solvents Demand .....	76
12 Propylene Glycol Solvents Demand....	79
13 E-Series Glycol Ether	
Solvents Demand .....	82
14 P-Series Glycol Ether	
Solvents Demand .....	85
15 Dipropylene Glycol Solvents Demand .	87
16 Other Glycol Solvents Demand.....	89
Cht Glycol Solvents Market Share, 2011...	90
17 Hydrocarbon Solvents Demand	
by Type & Market .....	93
18 Ketone Solvents Demand by Type.....	97
Cht Ketone Solvents Demand	
by Type, 2011 .....	98
19 Acetone Solvents Demand .....	100
20 Methyl Ethyl Ketone	
Solvents Demand .....	102
21 Methyl Isobutyl Ketone	
Solvents Demand .....	104
22 Other Ketone Solvents Demand.....	106
Cht Ketone Solvents Market Share, 2011	107
23 Ester Solvents Demand by Type .....	108
Cht Ester Solvents Demand	
by Type, 2011 .....	109
24 Ethyl Acetate Solvents Demand .....	111
25 Butyl Acetate Solvents Demand.....	112
26 Other Ester Solvents Demand .....	114
Cht Ester Solvents Market Share, 2011 ..	115
27 Chlorinated Solvents	
Demand by Type .....	118
Cht Chlorinated Solvents Demand	
by Type, 2011 .....	119
28 Chlorinated Solvents	
Demand by Market .....	123
29 Butanediol & Derivative	
Solvents Demand .....	125
30 Butanediol Solvents Demand.....	126
31 Gamma-Butyrolactone & Derivatives	
Solvents Demand .....	129
32 Tetrahydrofuran Solvents Demand ...	131
33 Soy Oil & Derivative	
Solvents Demand .....	133
34 Terpene Solvents Demand.....	135

35 Other Solvents Demand	
by Product & Market.....	138

### MARKETS

1 Solvents Demand by Market .....	140
Cht Solvent Demand by Market, 2011....	141
2 Transportation Indicators .....	143
3 Transportation Market for Solvents..	146
4 Paints & Coatings Shipments .....	149
5 Paints/Coatings Market for Solvents	152
6 Printing Ink Shipments .....	155
7 Printing Ink Market for Solvents.....	157
8 Cleaning Product Shipments .....	160
9 Cleaning Product Market	
for Solvents .....	162
10 Cosmetic & Toiletry	
Supply & Demand.....	165
11 Cosmetics & Toiletries	
Market for Solvents .....	167
12 Adhesives & Sealants Shipments.....	169
13 Adhesives & Sealants	
Market for Solvents .....	171
14 Chemical Product Shipments .....	174
15 Chemical Processing Market	
for Solvents .....	175
16 Construction Expenditures .....	179
17 Construction Market for Solvents ....	181
18 Other Markets for Solvents.....	183
19 Pharmaceutical Market for Solvents.	185
20 Asphalt Production	
Market for Solvents .....	187
21 Dry Cleaning Solvents Demand .....	189
22 Electronics Market for Solvents.....	191
23 Plastics & Rubber Market	
for Solvents .....	193
24 Metal Processing Market	
for Solvents .....	195
25 Food & Beverage Processing	
Market for Solvents .....	197
26 Agricultural Chemicals	
Market for Solvents .....	198
27 Refined Petroleum Products	
Market for Solvents .....	200
28 All Other Markets for Solvents.....	201

### INDUSTRY STRUCTURE

1 Solvent Sales by Company, 2011.....	203
Cht US Solvents Market Share, 2011 .....	206
2 Selected Acquisitions & Divestitures	209
3 Selected Cooperative Agreements ...	212

*A rebound in construction activity will drive increases in solvent demand in the construction and paints and coatings markets, while growth in consumer markets will benefit “green” solvents.*

## US demand to rise 1.5% per year through 2016

US solvents demand will continue to rebound from its recessionary lows, rising 1.5 percent per year in volume terms through 2016 to 10.9 billion pounds. A strong rebound in construction activity will drive strong increases in solvent demand in the construction and paints and coatings markets. Above average growth in consumer oriented markets such as cleaning products and cosmetics and toiletries will stimulate demand for “green” solvents, particularly butanediol derivatives, terpenes, and alcohols. Strong growth in green solvent demand will also reflect ongoing efforts by the industry to address regulatory concerns such as solvent volatility and toxicity. On the other hand, these regulatory issues will also have a dampening effect on solvent demand as companies work to reduce solvent usage in their products and processes. Additionally, the long term decline in after-market motor vehicle engine coolant consumption, a result of lengthening engine coolant flush intervals, will temper solvent demand growth.

## Construction, coatings markets to grow the fastest

Increased construction spending through 2016, particularly for new residential housing, will help reverse recent declines in construction and related markets such as paints and coatings, adhesives and sealants, and plastics and rubber processing. Of these, the

## US Solvents Demand by Market (10.9 billion pounds, 2016)



construction and paints and coatings markets will realize the fastest growth. Even faster advances in paints and coatings solvents demand will be limited by the ongoing transition toward water-borne coatings that do not require hydrocarbon or chlorinated solvents.

## Green solvents to rapidly outpace conventional types

Demand growth for green solvents will significantly outpace that for conventional types, rising nearly four times faster than conventional solvents. The rising use of green solvents will reflect increasing consumer demand for environmentally friendly products. Government regulations are also driving

the shift, both at the state and federal levels. In particular, the need to meet volatile organic compound (VOC) regulations has benefited demand for glycol solvents in the paints and coatings market. Chemical processors looking to comply with VOC regulations are increasingly turning toward butanediol and its derivatives to lower VOC content while continuing to use solvents. Likewise, the construction market has been increasingly turning towards alcohols and ketones like MEK for solvent uses. In the cleaning products, cosmetic and toiletries, and pharmaceutical markets, the need to meet stringent FDA and EPA regulations has prompted greater demand for alcohols -- in particular, ethanol.

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## Sample Text, Table & Chart

### PRODUCTS

#### Green Solvents

Demand for green, renewable solvents will increase year to year. Advances will be driven by business and a need to reduce on oil and gas. Solvents and coatings, cosmetics and toiletries will lead volume gains with growth in rubber as key solvents used in applications. Products manufactured from bio-based solvents such as terpenes and soy will post growth higher solvents demand.

**SAMPLE  
TEXT**

An advancing consumer preference for renewable products will fuel growth for markets that can incorporate green solvents into their products. As a result, consumer related industries such as paints and coatings, cosmetics and toiletries, and cleaning products have seen the most growth in green solvents usage. Coatings and cleaning products manufacturers have met demand in several ways. For example, these markets are heavily regulated in the amount of VOC content they can put into their products. As a result, less harmful, environmentally friendly chemicals have been added to products to comply with strict federal and state regulations.

Corn based ethanol demand grew significantly over the previous decade as producers saw demand rise as a result of the Renewable Fuel Standard (RFS) that requires the addition of renewable fuels to the domestic fuel supply. Increasing consumer awareness will increase demand for corn based ethanol faster than that overall. Demand for soy (oil and methyl soyate) and terpenes (orange-oil) has increased as well over the last decade as manufacturers incorporated them into their products. While the market for solvents has largely matured, terpenes will continue to experience better

49

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TABLE III-4

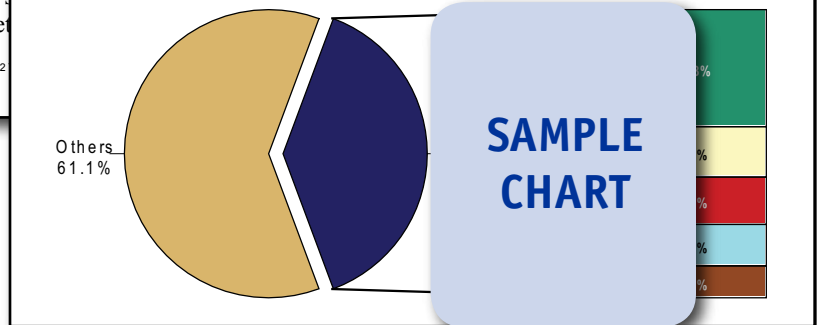
ALCOHOL SOLVENTS DEMAND BY TYPE

Item	2001	2006	2011	2016	2021
Solvents Demand % alcohols					
Alcohol Solvents Demand					
Ethanol					
Methanol					
Isopropanol					
Butanol					
Other					
\$/lb					
Alcohol Solvents Demand (mil \$)					
% alcohols					
Solvents Demand (mil \$)					

**SAMPLE  
TABLE**

CHART V-1

US SOLVENTS MARKET SHARE, 2011  
(\$5.8 billion)

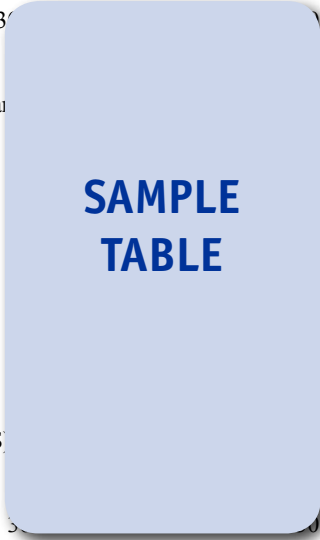


**SAMPLE  
CHART**

## Sample Profile, Table & Forecast

**TABLE IV-11**  
**COSMETICS & TOILETRIES MARKET FOR SOLVENTS**  
 (million pounds)

Item	2001	2006	2011	2016	2021
Cosmetic/Toiletry Shpts (mil 2005\$) 3					
lb solvent/000\$ C&T					
Cosmetics & Toiletries Solvents Dema					
By Product:					
Alcohols					
Glycols					
Ketones					
Hydrocarbons					
Esters					
By Type:					
Conventional					
Green					
\$/lb					
Cosmetics & Toiletries Solvents (mil \$					
% C&T					
Solvents Demand (mil \$)					



### COMPANY PROFILES

**Arizona Chemical Company LLC**  
 4600 Touchton Road East, Suite 1200  
 Jacksonville, FL 32246  
 904-928-8700  
<http://www.arizonachemical.com>

Annual Sales  
 Employment:

Key Products

Arizona Chemical is a manufacturer of naturally derived specialty resins and pine based chemicals. The Company's chemicals are used in the adhesive, ink and coatings, lubricant, mining, fuel additive, and oleochemical markets. Arizona Chemical is majority owned by private equity firm American Securities LLC (New York, New York) and 25 percent owned by private equity firm Rhone Capital III LP (New York, New York).

The Company competes in the US solvents industry through the manufacture of terpene chemicals and esters. Arizona Chemical's terpene chemicals include grades that have applications as solvents, including various alpha pinene chemicals that are marketed under the SYLVAPINE brand name. Among other uses, SYLVAPINE pinenes are employed as solvents in such applications as flavors and fragrances, cleaners, insecticides, and metalworking fluids. Other solvent chemicals made by Arizona Chemical include several esters of tall oil fatty acids, which are marketed under the SYLFAT and SYLVAPRINT brand names. As solvents, these methyl ester and butyl ester products can be used in pigment dispersants for polyolefin based plastics; lithographic press cleaning systems; and lithographic, offset, and sheetfed inks.

"Demand for solvents in cosmetics and toiletries will increase 1.9 percent per year to 715 million pounds in 2016, valued at \$500 million. Gains will be driven by growth in cosmetic and toiletry production. Additionally, because most of the solvents used in cosmetics and toiletries already adhere to stringent toxicity standards, there is less of a drive toward solvent reduction and replacement than in other markets. However, ..."  
 --Section IV, pg. 166



**OTHER STUDIES**

**Adhesives & Sealants**

US demand for adhesives and sealants will rise 2.2 percent per year to 9.8 billion pounds in 2017, valued at \$11.9 billion. Natural adhesives and sealants will remain the largest product segment, while reactive and hot melt types grow the fastest. Solvent-based products will also do well based in part on reformulation efforts to lower VOC emissions. This study analyzes the 8.8 billion pound US adhesives and sealants industry, with forecasts for 2017 and 2022 by market and product. The study also evaluates company market share and profiles industry players.  
 #2982 ..... March 2013 ..... \$5300

**World Industrial & Institutional Cleaning Chemicals**

World demand for industrial and institutional (I&I) cleaning chemicals will rise 4.7 percent yearly to \$44.4 billion in 2016. North America and Western Europe will remain dominant but developing regions will grow faster. Disinfectants and sanitizers will benefit from use in fast growing health care and food processing markets. This study analyzes the \$35.3 billion world I&I cleaning chemical industry, with forecasts for 2016 and 2021 by product, market, world region and for 18 countries. The study also evaluates company market share and profiles industry participants.  
 #2945 ..... October 2012 ..... \$6100

**Industrial & Institutional Cleaning Chemicals**

Demand in the US for industrial and institutional (I&I) cleaning chemicals will increase 3.7 percent per year to \$11 billion in 2016. Disinfectants and sanitizers and hand cleansers will be the fastest growing products. The manufacturing market will lead gains, driven by the food and beverage processing and fabricated metals processing segments. This study analyzes the \$9.3 billion US I&I cleaning chemical industry, with forecasts for 2016 and 2021 by market, product and raw material. The study also evaluates company market share and profiles industry players.  
 #2916 ..... July 2012 ..... \$5100

**Cosmetic & Toiletry Chemicals**

US demand for cosmetic and toiletry chemicals will rise 4.9 percent yearly to \$9.4 billion in 2016. Botanical extracts will lead gains based on their favorable natural profile, which many consumers perceive as being more healthful and beneficial than synthetic chemicals. Emollients and moisturizers will be the fastest growing chemicals by function. This study analyzes the \$7.4 billion US cosmetic and toiletry chemical industry, with forecasts for 2016 and 2021 by product, function and market. The study also evaluates company market share and profiles industry players.  
 #2865 ..... April 2012 ..... \$4900

**World Paint & Coatings**

Global paint and coatings demand will rise 5.4 percent annually to 45.6 million metric tons in 2015. The Asia/Pacific region will remain the largest market and will grow the fastest. The key architectural segment will lead gains worldwide. High-solids formulations will continue gaining market share on solvent-based types. This study analyzes the 35 million metric ton world paint and coatings industry, with forecasts for 2015 and 2020 by formulation, market, world region and for 23 countries. The study also evaluates company market share and profiles industry participants.  
 #2845 ..... February 2012 ..... \$6100

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