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Amines

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

Study #2962 | December 2012 | \$4900 | 219 pages

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The agricultural chemical and cleaning product markets will see the largest gains, while the fastest growth will occur in the wood treatment products market, but from a smaller base.

US demand to rise 2.4% annually through 2016

US demand for amines (excluding those used to produce other amines) is forecast to advance 2.4 percent annually to 3.1 billion pounds in 2016, valued at \$4.3 billion. Growth will accelerate from that of the 2006-2011 period as most markets for amines continue to recover from the 2007-2009 recession. The agricultural chemical and cleaning product markets will be responsible for the largest increases in amines demand, with agricultural chemical amine sales rising above the overall average. The fastest growth will occur in the wood treatment products market, though from a much smaller base, due to a robust rebound in construction spending. While demand for most amine products will grow near or just above the overall average pace, polyetheramines will continue to outperform due to their rising use in coatings and composites.

Ethanolamines to remain key product segment

Ethanolamines will be the largest and second fastest growing product segment in the US amines market. Diethanolamine will remain the most commercially significant of the ethanolamines, providing strong support as it continues to benefit from use in herbicides such as glyphosate and atrazine. The fast growth in the wood treatment market will benefit monoethanolamine, while triethanolamine demand will be aided by new uses in fabric softeners and cleaning

US Amines Demand, 2016 (3.1 billion pounds)



products. Due to their importance in polyurea coatings and composites, and as epoxy resin curing agents, polyetheramines will continue to grow at a faster pace than all other amine product types.

Pesticides, cleaning products among best market opportunities

Healthy demand for alkylamines and ethanolamines as intermediates in pesticide active ingredient production will drive above average increases in the agricultural chemical market through 2016, particularly as pesticide exports rise due to the expanded planting in developing countries of crops resistant to

the pesticides in which the amines are used. Alkylamines and ethanolamines will also lead gains in cleaning products, the largest outlet for amines; however, increases in the personal care market will be somewhat slower due to the maturity of key applications such as liquid personal bath soaps. The fastest growth will be achieved in the wood treatment market, driven by a rebound in residential construction; however, increasing competition from wood-alternative products will limit gains over the long term. Among the smaller markets, rubber, plastics, and pharmaceuticals will post above average growth, while the natural gas and water treatment markets will rise at below average paces.

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Sample Text, Table & Chart

PRODUCTS

Ethanolamines

Demand for ethanolamines, excluding the amount used in production of other amines, totaled 900 million pounds in 2011, accounting for 33 percent of amines demand in volume terms. In value terms, ethanolamines demand was \$430 million, representing 13 percent of total amines demand.

Monoethanolamine is produced by reacting ethylene oxide with aqueous ammonia, which also produces diethanolamine and triethanolamine as well as unreacted ammonia that is then reutilized. The production of the three ethanolamines produced is dictated by the reaction conditions and the ratio of ammonia and ethylene oxide used. Of the three, monoethanolamine is generally produced due to its use in ethylenediamine production. However, diethanolamine has the largest commercial presence in terms of nonamine intermediate applications.

Because ethanolamines combine the properties of amines and alcohols, they exhibit the unique capability of undergoing reactions common to both groups. As amines, they are mildly alkaline and react with acids to form salts or soaps. As alcohols, they are hygroscopic and can be esterified.

Supply & Demand

Excluding demand for use as feedstock for other amines production, US ethanolamine supply is expected to grow at a rate of 1.5 percent annually through 2021. Global supply is expected to grow at a rate of 1.5 percent annually through 2021. Global supply is expected to grow at a rate of 1.5 percent annually through 2021. Advances for diethanolamine in agricultural applications. In the cleaning products market, which is expected to continue its growth through 2021.

37

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SAMPLE TEXT

TABLE III-4

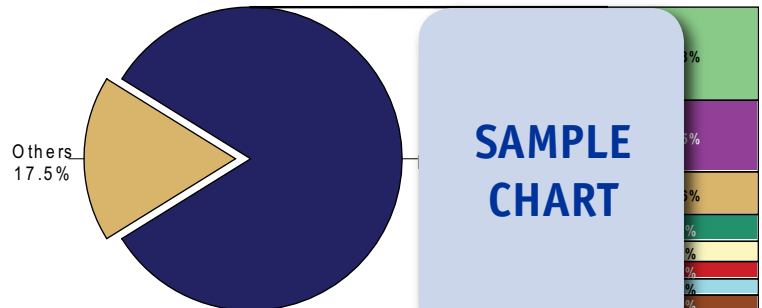
DIETHANOLAMINE DEMAND BY MARKET
(million pounds)

| Item | 2001 | 2006 | 2011 | 2016 | 2021 |
|---------------------------------------|------|------|------|------|------|
| Nondurable Goods Shpts (bil 2005\$) | | | | | |
| lbs diethanolamine/mil \$ nondurables | | | | | |
| Diethanolamine Demand | | | | | |
| Agricultural Chemicals | | | | | |
| Cleaning Products | | | | | |
| Natural Gas | | | | | |
| Other | | | | | |
| \$/lb | | | | | |
| Diethanolamine Demand (mil \$) | | | | | |
| % diethanolamine | | | | | |
| Ethanolamines Demand (mil \$) | | | | | |

SAMPLE TABLE

CHART V-1

US AMINES MARKET SHARE
(\$3.4 billion, 2011)



SAMPLE CHART

Sample Profile, Table & Forecast

TABLE IV-1
AMINES DEMAND BY MARKET
(million pounds)

| Item | 2001 | 2006 | 2011 | 2016 | 2021 |
|-------------------------------------|------|------|------|------|------|
| Nondurable Goods Shpts (bil 2005\$) | | | | | |
| lbs amines/mil \$ nondurables | | | | | |
| Amines Demand | | | | | |
| Cleaning Products | | | | | |
| Agricultural Chemicals | | | | | |
| Personal Care Products | | | | | |
| Natural Gas | | | | | |
| Water Treatment | | | | | |
| Lubricants | | | | | |
| Wood Treatment | | | | | |
| Other | | | | | |
| \$/lb | | | | | |
| Amines Demand (mil \$) | | | | | |

**SAMPLE
PROFILE**

**SAMPLE
TABLE**

COMPANY PROFILES

Chemtura Corporation

199 Benson Road
 Middlebury, CT 06749
 203-573-
<http://www.chemtura.com>

Sales: \$
 US Sales
 Employe

Key Pro

Chemtura is a global diversified producer of specialty chemicals and polymer products, and a leading supplier of home pool and spa chemicals. The Company operates in four segments: Consumer Products, Industrial Performance Products, Chemtura AgroSolutions, and Industrial Engineered Products.

The Company is active in the US amines industry through the Industrial Performance Products segment, which reported sales of \$1.4 billion in 2011. Via this segment, Chemtura develops, produces, and sells a variety of antioxidants, petroleum additives, and urethanes. The Company's antioxidants, which include various chemicals based on amines, are engineered to inhibit the degradation of polymers caused by air and heat during manufacture and use.

Chemtura's amine based antioxidants are manufactured and sold via two main product lines: NAUGARD and NAUGALUBE. The Company's NAUGARD products include NAUGARD PHR, which contains triisopropanolamine (TIPA) to provide enhanced hydrolysis resistance when used as a stabilizer in rubber; and NAUGARD 445, an aromatic amine type antioxidant that is used as a thermal stabilizer in a

"Demand for amines used in agricultural chemicals will grow 3.2 percent per year to 700 million pounds in 2016, valued at \$650 million. Driving gains will be new advances in seed technology, type of crops planted, and new product development. Additionally, healthy gains will be supported by increasing exports to global markets. However, even further growth will be restrained by several factors, including ..."

--Section IV, pg. 102

OTHER STUDIES

Solvents

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. Growth in consumer oriented markets and regulations aimed at solvent volatility and toxicity will favor "green" solvents such as butanediol derivatives, terpenes, and alcohols. The construction market will grow the fastest. This study analyzes the 10.1 billion pound US solvent industry, with forecasts for 2016 and 2021 by product and market. The study also evaluates company market share and profiles industry players.

#2925 November 2012 \$4900

Home & Garden Pesticides

US demand for home and garden pesticides is projected to increase 3.2 percent per year to \$2.3 billion in 2016. Insecticides and fungicides will be the fastest growing types. Household applications will outpace lawn and garden uses, promoted by increased awareness of pest-borne diseases and by continued problems with aggressive insects. This study analyzes the \$2 billion US home and garden pesticide industry, with forecasts for 2016 and 2021 by product, application and raw material. The study also evaluates company market share and profiles industry players.

#2947 October 2012 \$4900

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

World Agricultural Pesticides

World demand for formulated agricultural pesticides is forecast grow 3.8 percent annually through 2016 to \$59 billion. The fastest growth is expected in developing countries of Eastern Europe, South America, and Asia. Product demand will benefit from more value-added pesticide formulations with multiple active ingredients. This study analyzes the \$49 billion world agricultural pesticide industry, with forecasts for 2016 and 2021 by product, market, world region and for 43 countries. The study also evaluates company market share and profiles industry participants.

#2902 August 2012 \$6200

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

About The Freedonia Group

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