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Amines

US Industry Study with Forecasts for **2019 & 2024**

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Demand will be driven by greater amounts of amine-based pesticides used in agriculture, rising demand for natural gas power generation, and growing construction activity that benefits amines used in adhesives.

US demand to rise 2.1% annually through 2019

US demand for amines will expand 2.1 percent per year to 3.2 billion pounds in 2019, valued at \$3.8 billion. The growing use of pesticide-resistant crops will drive amine demand in agricultural chemicals as greater amounts of glyphosate and other amine-based pesticides are applied. Ethanolamines and specialty amines will benefit from rising demand for natural gas as power generation companies continue to replace coal-fired power plants with more efficient natural gas burning plants.

Rising construction activity will also help drive strong demand for polyetheramines, as well as other amines used in adhesives. However, the use of amines in wood treatment chemicals will not recover significantly as consumers shift to wood-alternative decking, and as treated wood producers increasingly turn to micronized and non-metal-based preservatives that are not formulated with amines. Additionally, growth will be limited by the maturity of some of the largest markets for amines, such as cleaning products and personal care products.

Agricultural chemicals to remain key market

Amine demand in agricultural chemicals has expanded rapidly in recent years as the widespread planting of glyphosate-resistant crops resulted in robust growth

US Amines Demand, 2019 (3.2 billion pounds)



in the herbicide's demand, and as Monsanto (the sole US producer of glyphosate) chose to pursue market share in 2010 by cutting prices. More recently, growing weed resistance to glyphosate, both in the US and abroad, has continued to drive amine demand for glyphosate as farmers have increased usage to maintain weed control. Agricultural companies have also responded by developing new varieties of corn and soybeans resistant to other herbicides beyond glyphosate, including the well-known herbicides 2,4-D and dicamba. Increased use of these crops going forward will drive growth in amine demand as farmers increase their herbicide use on crops containing the new genes.

Polyetheramines to be fastest growing product

Robust growth in building construction will help boost the production of coatings and adhesives, benefiting most of the commodity amines. Polyetheramines, which have found growing use in adhesives and advanced composites, will be among the biggest beneficiaries and will achieve the fastest growth of all amine types. However, rapid consumer adoption of wood-alternative decking options will limit demand for amines in wood preservatives. Additionally, an industry shift toward non-metal-based and micronized preservatives, which do not require amines in their formulations, will further restrain amine demand.

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Sample Text, Table & Chart

MARKETS

Cleaning Products

Demand for amines in cleaning products totaled 595 million lbs in 2014, valued at \$655 million. Demand is expected to grow through 2024. Applications include: household and industrial cleaning products, carpet care, floor care, clothing, dishes, countertops, furniture, and automotive care. Amines are also used in a variety of benefits -- including: deodorizing, brightening, and whitening. Attributes, antibacterial effectiveness, and safety are key factors in product formulations.

SAMPLE
TEXT

Cleaning Products Outlook

Detergent and cleaning product shipments from facilities are expected to rise 2.9 percent per annum to \$35.1 billion in 2019, with growth in real dollars averaging less than one percent yearly through the same period. Factors constraining growth will include slow -- though improving -- gains in polishes and sanitation goods, as well as demographic factors such as slow US population growth and the aging of the American populace. Nonetheless, increases in the value of detergent and cleaning product output will be supported by demand for new entries to these markets, which feature unique properties that typically command higher prices. Laundry detergent "pods," for example, are helping to drive growth in laundry detergents by offering single unit doses of detergent in an easy-to-use format that makes laundry simpler and less time consuming. However, an increasing number of reports of accidental poisoning of children after ingestion of laundry pods may curtail advances.

While the US cleaning product market is most often divided into household and industrial and institutional (I&I) segments, it is viewed in terms of three product types: polishes and sanitizers, detergents, and other cleaning products.

104

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TABLE III-10

METHYLAMINES DEMAND BY TYPE

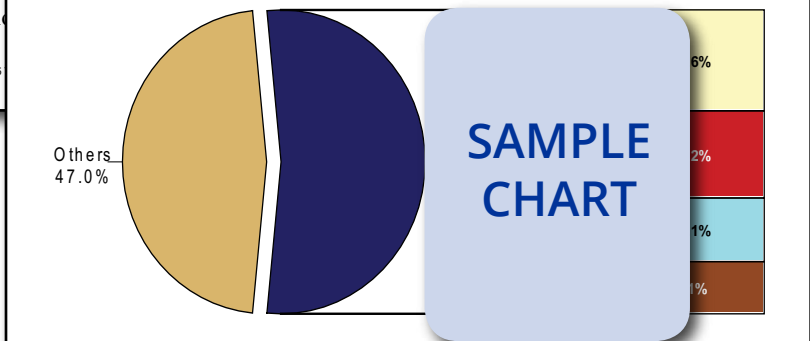
Item	2004	2009	2014	2019	2024
Nondurable Goods Shipments (bil 2009\$)					
lbs methylamines/mil \$ nondurables					
Methylamines Demand (mil lbs)*					
Dimethylamine*					
Monomethylamine*					
Trimethylamine					
\$/lb					
Methylamines Demand (mil \$)					
Dimethylamine					
Monomethylamine					
Trimethylamine					
% methylamines					
Alkylamines Demand (mil \$)					

*Excludes amount used in the production of other amines. Source: The Freedonia Group, Inc.

SAMPLE
TABLE

CHART V-1

US AMINES MARKET SHARE, 2014
(\$3.3 billion)



SAMPLE
CHART

Sample Profile & Table, & Study Coverage

TABLE IV-3
AGRICULTURAL CHEMICALS MARKET: AMINES DEMAND
 (million pounds)

Item	2004	2009	2014	2019	2024
Formulated Pesticides Production (mil \$)	9	10	11	12	13
\$ formulated pesticides/lb amines					
Agricultural Amines Demand					
Ethanolamines					
Alkylamines					
Specialty Amines					
Fatty Amines					
Other Amines					
 \$ /lb					
Agricultural Amines Demand (mil \$)					
 % agricultural chemicals					
Amines Demand (mil \$)	2	2	2	2	2

Source: The Freedonia Group, Inc.

SAMPLE PROFILE

SAMPLE TABLE

STUDY COVERAGE

This Freedonia study, *Amines*, presents historical demand data (2004, 2009, 2014) plus forecasts (2019 and 2024) by product and market. The study also considers key market environment factors, assesses the industry structure, analyzes company market share and profiles 27 participants in the US amines industry.

COMPANY PROFILES

Koch Industries

4111 East 37th Street North
 Wichita, KS 67220
 316-828-5500
<http://www.kochindustries.com>

Annual Revenue: \$15.5 billion (2014)
 Employment: 100,000 (2014)
 Key Products: aliphatic, cycloaliphatic, and aromatic amines

Koch Industries, one of the largest private companies in the US, operates through a diverse group of companies. The Company is active through 12 main segments: Refining, Chemicals, and Biofuels; Process & Pollution Control Equipment and Technologies; Minerals; Forest and Consumer Products; Fertilizers; Commodity Trading; Glass; Energy; Polymers and Fibers; Ranching; Electronic Components; and Investments.

The Company is part of the US amines industry through the Polymers and Fibers segment, which includes the operations of INVISTA Sarl (Wichita, Kansas), a subsidiary that manufactures premium fibers, polymers, and intermediates primarily for nylon, spandex, and polyester applications. INVISTA's activities include the Intermediates business, via which the company makes nylon intermediates and polymers for a wide range of specialty materials and other applications. Among INVISTA's products are DYTEK multifunctional amine-, nitrile-, and boron-based chemicals intended to provide enhanced synthesis properties. Specifically, DYTEK amines are manufactured in aliphatic, cycloaliphatic, and aromatic varieties for a range of applications, including elastomers, epoxy curing agents, resins, adhesives, sealants, coatings, and scale and corrosion inhibitors. The company's DYTEK line includes A, BHMT, DCH-99, EP, HMD, and HMI grades.

Related Studies

Paint & Coatings

US demand for paint and coatings is forecast to grow 3.8 percent annually to 1.4 billion gallons in 2019. Architecture will remain the largest market and grow the fastest. Water-based formulations will remain dominant and continue to gain market share. New technologies such as nanostructured coatings will drive future growth. This study analyzes the 1.2 billion gallon US paint and coatings industry, with forecasts for 2019 and 2024 by market, formulation and substrate. The study also evaluates company market share and profiles industry players.

#3317.....August 2015.....\$5300

Waxes

US demand for waxes will rise 1.8 percent annually through 2019 to three billion pounds, with value demand reaching \$3.2 billion. Petroleum and mineral waxes will remain the dominant types, while synthetic waxes will grow the fastest. The leading industrial market will provide the best opportunities, particularly in the production of coatings and inks, adhesives, and building boards. This study analyzes the \$2.4 billion US wax industry, with forecasts for 2019 and 2024 by type and market. The study also evaluates company market share and profiles industry players.

#3271.....May 2015.....\$5200

Adhesives & Sealants

US demand for adhesives and sealants is forecast to increase 2.8 percent per year to 6.4 billion pounds in 2019, valued at \$12.8 billion. Reactive adhesives and sealants will be the fastest growing types. The construction market will lead gains, while the manufacturing and assembly market will remain the largest segment. This study analyzes the 5.6 billion pound US adhesives and sealants industry, with forecasts for 2019 and 2024 by product and market. The study also evaluates company market share and profiles industry players.

#3257.....February 2015.....\$5400

Surfactants

US demand for surfactants will rise 3.2 percent per year to 10.9 billion pounds in 2018, valued at \$14.4 billion. Industrial markets will grow the fastest, benefiting specialty surfactants the most. Personal care products will also offer good market opportunities, led by surfactants that are gentle on skin and hair and are environmentally sustainable. This study analyzes the 9.3 billion pound US surfactants industry, with forecasts for 2018 and 2023 by market and product. The study also evaluates company market share and profiles industry participants.

#3247.....January 2015.....\$5200

World Industrial & Institutional (I&I) Cleaning Chemicals

Global demand for I&I cleaning chemicals is projected to increase 4.3 percent per year to \$46.3 billion in 2018. The fastest growth will occur in healthcare, due to a rise in the number of hospital stays and concerns about healthcare-associated infections (HAIs). China and the Asia/Pacific region will be the fastest growing markets. This study analyzes the \$37.5 billion world I&I cleaning chemical industry, with forecasts for 2018 and 2023 by product, market, world region, and for 18 countries. The study also evaluates company market share and profiles industry participants.

#3207.....November 2014.....\$6300

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 and other world markets. Industries analyzed by Freedonia include:

- Automotive & Transport • Chemicals • Construction & Building Products • Consumer Goods • Energy & Petroleum • Industrial Components • Healthcare & Life Sciences • Machinery & Equipment • Metals, Minerals & Glass • Packaging • Plastics & Other Polymers • Security • Services • Textiles & Nonwovens • Water Treatment

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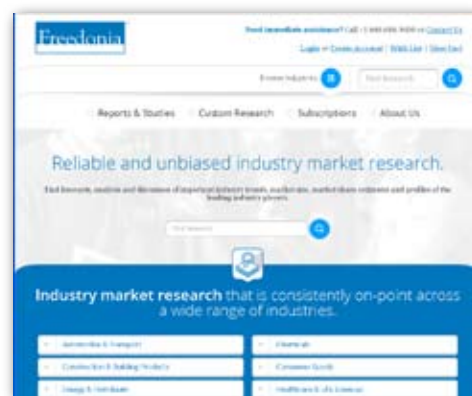
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