

NEW US industry forecasts for 2017 & 2022

Lubricant Additives

Study # 3020

April 2013

\$4900

US demand to reach 2.5 billion pounds in 2017

Demand for lubricant additives in the US is expected to increase to 2.4 billion pounds in 2017, valued at \$3.8 billion, with growth resulting from rebounding lubricant production and modestly rising additive treat rates. Additives such as antioxidants and friction modifiers, which are capable of providing longer lubricant service life or fuel efficiency benefits, will see the strongest demand growth, while those such as antiwear and extreme pressure additives containing potentially undesirable chemistries will experience below average advances. OEM specifications for lubricant performance will continue to drive changes in formulations, with particular focus on lubricants' contribution to meeting fuel economy and emissions regulations leading to increased demands placed on related lubricant characteristics.

Industrial uses to outpace automotive applications

Automotive applications tend to be highly technical and present a larger market for both finished lubricants and lubricant additives than do industrial uses. However, demand for additives in automotive lubricants will be restrained due to weak growth in vehicle usage, lengthening service intervals, and little room to further increase additive concentrations. This will have the largest impact on deposit control additives, including dispersants and detergents, which are a major component of engine oils and account for the largest share of total lubricant additives demand. Deposit control additives will grow at a below



average rate, despite benefiting from strict requirements for engine cleanliness present in the upcoming GF-6 passenger car engine oil specification.

Though smaller in volume than automotive markets, industrial lubricants will exhibit stronger growth in both lubricant production and additive concentrations. Treat rates will rise most rapidly in general oils and hydraulic fluids, with trends in finished lubricant production favoring these fluids as well. Industrial engine oils, such as those used in rail and marine applications, power generation, and other stationary engines, contain among the highest levels of additives used in industrial lubricants, and will thus continue to be important markets for additives. Industrial engine lubricants will face many of the same future challenges as automotive engine oils,

with fuel efficiency, equipment protection, and lubricant service life all important factors influencing the demand for additives.

Environmental concerns to continue affecting demand

Environmental concerns will continue to play a major role in lubricant formulation and use. Reduction of elements such as chlorine, phosphorus, sulfur, and metals has proceeded at a rapid pace over the past decade, particularly in automotive lubricants. Although there is no immediate regulatory push for further reduction of these chemicals in automotive lubricants, end users in all markets will increasingly demand lubricants perceived to be less harmful to equipment, worker health, and the environment. Use of more environmentally friendly fuels, including renewable fuels, in both automotive and industrial engines will also drive changes in lubricant formulation and additive demand. For example, expanding use of biodiesel in the motor vehicle fuel pool will require better oxidation and corrosion protection from lubricants. In contrast, falling sulfur content in marine fuel oil may reduce the need for detergents in marine engine lubricants.

Study coverage

This upcoming Freedonia industry study, *Lubricant Additives*, is priced at \$4900. It presents historical demand data (2002, 2007, 2012) plus forecasts for 2017 and 2022 by type and market. The study also assesses key market environment factors, examines industry structure, evaluates company market share, and profiles US industry players.

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#3020 - Lubricant Additives

Introduction

EXECUTIVE SUMMARY

- 1 Summary Table

MARKET ENVIRONMENT

General

Macroeconomic Overview

Motor Vehicle Outlook

Manufacturing Outlook

Crude Oil & Refined Petroleum

Products Outlook

Market Volatility

Pricing Trends

Environmental & Regulatory Issues

Federal Regulations

Environmentally Friendly Lubricants

Metalworking Fluids

Hybrid & Alternative Fuel Vehicles

Other Environmental & Regulatory Issues

Technology

Motor Vehicle Design

Light Vehicle Design

Diesel Engines

Industrial Machinery Trends

International Activity

Foreign Trade

Exports

Imports

LIST OF TABLES & CHARTS:

- 1 Macroeconomic Outlook
- 2 Motor Vehicle Indicators
- 3 Manufacturers' Shipments
- 4 Crude Oil & Refined Petroleum Products Supply & Demand
- 5 Lubricant Additives Market Volatility, 2002-2012
- 6 Lubricant Additives Pricing Trends
- 7 Lubricant Additives US Foreign Trade
- Cht US Lubricant Additives Exports, 2012
- Cht US Lubricant Additives Imports, 2012

LUBRICANT INDUSTRY OVERVIEW

General

Lubricants Outlook

Automotive Lubricants

Industrial Lubricants

Basestocks

Petroleum

Other Basestocks

Synthetic Lubricants

Re-Refined Lubricants

Motor Vehicle Lubricant

Classification & Testing

Passenger Car Specifications

Diesel Engine Oil Specifications

Lubricant Production Trends

LIST OF TABLES & CHARTS:

- 1 Finished Lubricant Demand
- 2 Automotive Lubricant Demand
- 3 Automotive Engine Oils Demand
- 4 Transmission & Other Automotive Lubricants Demand
- 5 Total Base Oil Demand
- 6 Petroleum Base Oil Supply & Demand
- 7 Re-Refined Lubricant Demand
- 8 Finished Lubricants Production
- Cht Lubricant Production Flowchart

LUBRICANT ADDITIVES BY TYPE

General

Deposit Control Additives

Dispersants

Detergents

Viscosity Index Improvers

Antiwear & Extreme Pressure Additives

Antiwear Additives

Extreme Pressure Additives

Antioxidants

Corrosion Inhibitors

Friction Modifiers

Emulsifiers

Other Lubricant Additives

LIST OF TABLES & CHARTS:

- 1 Lubricant Additives Demand by Type
- Cht Lubricant Additives Demand by Type: Value & Volume, 2012
- 2 Deposit Control Additives Demand
- 3 Dispersant Additives Demand
- 4 Detergent Additives Demand
- 5 Viscosity Modifiers Demand
- 6 Antiwear & Extreme Pressure Additives Demand
- 7 Antiwear Additives Demand
- 8 Extreme Pressure Additives Demand
- 9 Antioxidant Additives Demand
- 10 Corrosion Inhibitors Demand
- 11 Friction Modifiers Demand
- 12 Emulsifiers Demand
- 13 Other Lubricant Additives Demand

LUBRICANT ADDITIVES BY MARKET

General

Automotive Lubricant Additives

Engine Oil Additives

Gasoline Engine Oil Additives

Diesel Engine Oil Additives

Transmission Fluid & Other

Auto Lubricant Additives

Automatic Transmission Fluids

Tractor Hydraulic & Transmission Fluids

Power Steering & Other

Transmission Fluids

Other Automotive Lubricants

Industrial Lubricant Additives

Industrial Engine Oil Additives

Metalworking Fluids Additives

Metalworking Fluids Characteristics

Safety & Environmental Issues

Technology

Alternative Basestocks

Other Industrial Lubricant Additives

Hydraulic Fluids

Industrial Gear Oils

Industrial Greases

Other Industrial Lubricants

LIST OF TABLES & CHARTS:

- 1 Lubricant Additives Demand by Market
- Cht Lubricant Additives Demand by Market: Value & Volume, 2012
- 2 Automotive Lubricant Additives Demand
- 3 Engine Oil Additives Demand
- 4 Gasoline Engine Oil Additives Demand
- 5 Diesel Engine Oil Additives Demand
- 6 Transmission & Other Automotive Lubricant Additives Demand
- 7 Industrial Lubricant Additives Demand
- Cht Industrial Lubricant Additives Demand, 2012
- 8 Industrial Engine Oil Additives Demand
- 9 Metalworking Fluid Additives Demand
- 10 Other Industrial Lubricants Additives Demand

INDUSTRY STRUCTURE

General

Market Share

Automotive Lubricant Additives

Industrial Lubricant Additives

Competitive Strategies

Research & Development

Product Differentiation

Market Segmentation

Cost Controls

Merger & Acquisition Activity

Cooperative Agreements

LIST OF TABLES & CHARTS:

- 1 Selected Lubricant Additives Suppliers, 2012
- Cht US Lubricant Additives Market Share, 2012
- 2 US Lubricant Additives Leading Suppliers, 2012
- 3 Research & Development Spending Patterns: Selected Lubricant Additives Companies
- 4 Selected Acquisitions & Divestitures
- 5 Selected Cooperative Agreements

Company Profiles

This study can help you:

- Determine your market & sales potential
- Learn more about industry competitors
- Assess new products & technologies
- Identify firms to merge with or acquire
- Complement your research & planning
- Gather data for presentations
- Confirm your own internal data
- Make better business decisions

LUBRICANT ADDITIVES BY MARKET

Industrial Engine Oil Additives

Demand for additives used in industrial engine oil is forecast to increase in 2017. As with motor vehicle lubricants, industrial engine oil has been significantly impacted by the equipment capable of operating at higher temperatures, increased stress on lubricants, and have a variety of additives (e.g., antioxidants, deposit control agents) that can enhance lubricant performance, extend equipment lifetime, and equipment protection.

Diesel, gasoline, and natural gas engine oils in industrial applications incorporate many of the same additives used in their automotive counterparts; examples include detergents, dispersants, antioxidants, and antiwear and extreme pressure agents. However, there are significant differences in the demands placed on the two types of lubricants, and between those placed on different types of industrial engine oils. These include the exposure to low ambient temperatures (which is significant for aircraft and marine applications, but often absent for indoor, stationary equipment), fuel quality, engine design and operating speed, exposure to water, and others. For example, heavy duty marine engines require both a cylinder lubricant and a crankcase lubricant. The cylinder lubricant requires a very high level of detergency to cope with acids produced in the combustion of lower quality marine fuels, while water separation and deposit control are most important for the crankcase oil. Natural gas engines contend with higher temperatures and high levels of nitrogen oxides (known as nitration).

COMPANY PROFILES

Profiles for US industry competitors such as Afton Chemical, Chevron Oronite, Infineum, and Lubrizol

LUBRICANT ADDITIVES BY TYPE

based on sulfurized olefins, fatty acids, and esters; potassium borates; and sulfur-phosphorus chemistries. Sulfur containing EP additives can be further described by their content of "active" sulfur. Active sulfur refers to the tendency of sulfur to react chemically at low temperatures. High active sulfur content is desirable when EP performance is needed at comparatively low temperature, but can also lead to corrosion, particularly of copper.

Extreme pressure additives are produced by a number of companies, and sold as part of additive packages as well as individual additive components. In addition to Dover Chemical's line of chlorinated paraffin additives, the company also offers products free from chlorinated paraffins. Suppliers of chlorine free EP additives include King Industries, RT Vanderbilt, and Rhein Chemie.

TABLE IV-8
EXTREME PRESSURE ADDITIVES DEMAND
(million pounds)

Item	2002	2007	2012	2017	2022
Lubricants Production (mil gallons) lb additives/000 gal lubricants					
Extreme Pressure Additives Demand					
By Type:					
Chlorinated Paraffins					
Other					
By Market:					
Automotive					
Industrial					
\$/lb					
Extreme Pressure Additives (mil \$)					
% extreme pressure					
Total Antiwear/EP Demand (mil \$)					

SAMPLE TABLE

Presents historical data for 2002, 2007, and 2012 plus Freedonia forecasts for 2017 and 2022; data illustrated with the aid of 51 tables and charts

Freedonia's methods involve:

- Establishing consistent economic and market forecasts
- Using input/output ratios, flow charts and other economic methods to quantify data
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- Interviewing key industry participants, experts and end users
- Researching a proprietary database that includes trade publications, government reports and corporate literature

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Corrosion Inhibitors

US demand for corrosion inhibitors will rise 4.1 percent annually to \$2.5 billion in 2017. The oil and gas industry's continued expansion of horizontal drilling and hydrofracturing well stimulation in shale formations will drive advances in demand. Concrete and cement additives will grow the fastest due to a rebound in construction spending. This study analyzes the \$2 billion US corrosion inhibitors industry, with forecasts for 2017 and 2022 by application, market and product. The study also evaluates company market share and profiles industry competitors.

#2994..... *March 2013*..... \$5100

World Catalysts

World demand for catalysts will rise 5.8 percent per year to \$19.5 billion in 2016. Rapid growth will occur in both Asia and the Middle East. Brazil will lead strong growth in Central and South America. Polymerization catalysts will experience the fastest growth, driven by healthy expansion of polymer resin production. This study analyzes the \$14.7 billion world catalyst industry, with forecasts for 2016 and 2021 by material, type, market, world region and for 24 countries. The study also evaluates company market share and profiles industry players.

#2989..... *February 2013* \$6400

World Fuel Additives

The world fuel additives market will rise 8.0 percent yearly to \$59.4 billion in 2016. The rapidly growing fuel market in China will drive gains, especially as China's fuel standards become stricter and additive treat rates rise. Deposit control additives will see the greatest gains globally, while cold flow improvers grow at the fastest rate. This study analyzes the \$40.5 billion world specialty fuel additives industry, with forecasts for 2016 and 2021 by product, application, world region and for 19 countries. The study also evaluates company market share and profiles industry players.

#2977..... *December 2012* \$6100

World Oilfield Chemicals

World demand for oilfield chemicals is expected to increase 8.9 percent annually to \$28 billion in 2016. The US will remain the largest market based on its many mature wells and rapid growth in horizontal drilling and hydraulic fracturing. Brazil will be the fastest growing market. Drilling fluids and completion and work-over fluids will lead gains. This study analyzes the \$18 billion world oilfield chemical industry, with forecasts for 2016 and 2021 by product, world region and for 44 countries. The study also evaluates company market share and profiles industry participants.

#2973..... *December 2012* \$6200

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

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