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Synthetic Lubricants & Functional Fluids

US Industry Study with Forecasts for **2018 & 2023**

Study #3187 | August 2014 | \$5200 | 289 pages

www.freedoniagroup.com



The Freedonia Group

767 Beta Drive

Cleveland, OH • 44143-2326 • USA

Toll Free US Tel: 800.927.5900 or +1 440.684.9600

Fax: +1 440.646.0484

E-mail: info@freedoniagroup.com

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Growth will result from increasing market penetration at the expense of conventional fluids, driven by environmental concerns, user preferences, and higher performance requirements.

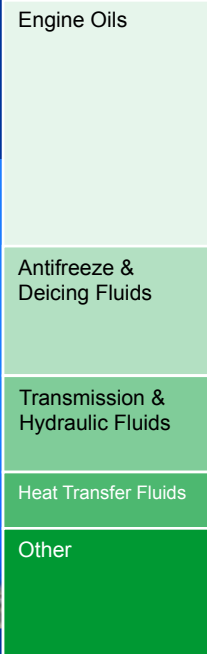
US demand to rise 6.8% annually through 2018

US demand for synthetic lubricants and functional fluids is forecast to increase 6.8 percent per year to \$6.3 billion in 2018, with volume rising to 555 million gallons. Growth will result from increasing market penetration of synthetic products at the expense of conventional fluids, driven by environmental concerns, user preferences, and increasingly stringent requirements for lubricant and fluid performance. The outlook for synthetic products will vary across markets and applications, with each product subject to a unique set of factors influencing demand.

Engine oils to claim biggest share of product gains

Engine oils will account for the largest share of gains through 2018. In the light vehicle market, synthetic engine oils will benefit from the trend toward low viscosity, energy efficient lubricants, which will often necessitate the use of synthetics. Over the past several years, motor vehicle manufacturers Honda and Toyota have begun specifying SAE 0W-20 motor oils for many of their new cars, while General Motors has introduced its DEXOS1 specification. In each case, these changes have increased demand for synthetic engine oils. The upcoming ILSAC GF-6 specification will facilitate the introduction of even lighter viscosity grades than those currently used, further promoting demand for synthetics.

Synthetic Functional Fluid Demand, 2018 (\$2.8 billion)



Synthetics will also begin to see wider use in the heavy-duty and off-highway segments, primarily resulting from the improved fuel efficiency and extended maintenance intervals they allow.

Aside from engine oils, a number of other synthetic products will see strong gains as well. Transmission and hydraulic fluids will be the fastest growing of these, benefiting from increasing demand for synthetic automatic transmission fluids and industrial hydraulic fluids. The impact of increasingly demanding equipment specifications, severe operating conditions, and the ability to improve energy efficiency will be key driving factors for sales of these fluids. Synthetic metalworking fluids and dielectric fluids

will continue to be used where they can provide worker safety or environmental benefits or meet a specific performance requirement.

Energy, automotive among strongest markets

The energy and power generation, automotive equipment, and industrial machinery markets will all offer strong growth opportunities for synthetics. In power generation, niche and emerging applications will boost growth. In automotive equipment and industrial machinery, in contrast, growth will be broad based, resulting from steady gains in market size paired with increasing penetration of synthetics.

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Sample Text, Table & Chart

MATERIALS

Silicone Fluids

Demand for silicone-based synthetic fluids is forecast to reach 1.5 million, with volume record below average general oil and other synthetic growth. Due to the liquid lubricants where their unique performance standpoint. Silicones are fire resistant, nontoxic, and stable, and will continue employed in chemical processing applications and in uses where fluid may come in contact with electricity.

Silicones are a broad group of synthetic polymers that are both inorganic and organic in structure. There are three major groups of silicones: fluids, resins and elastomers. Silicone fluids, including dimethyl, fluoro, methyl phenyl, and methyl alkyl types, are employed in the formulation of synthetic lubricants and functional fluids. The use of silicones in synthetic grease is excluded from this report.

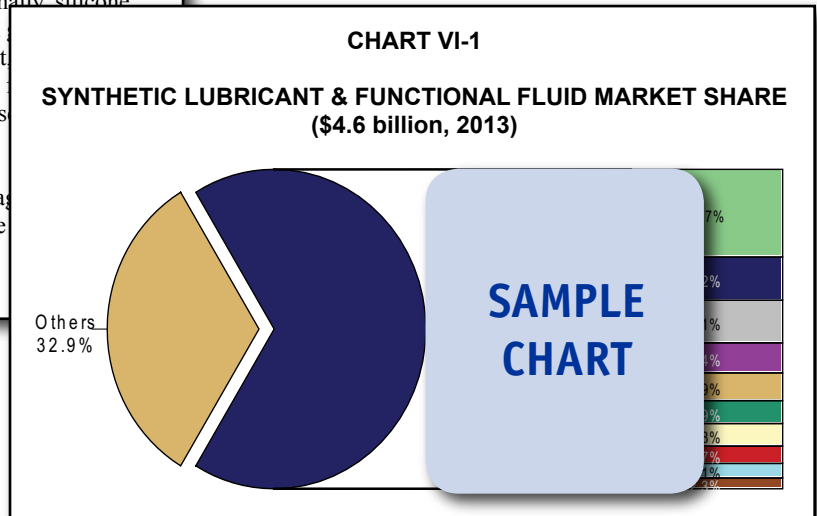
Silicone fluids can offer a number of performance benefits. Among these are a very high VI; enhanced low temperature performance; and thermal, hydrolytic, and oxidative stability. Other advantages include low volatility and good seal material compatibility. Additionally, silicone base oils have good electrical properties, high lubricity, and oxidation resistance. They are also chemically inert, fire resistant, non-staining, nontoxic, and water repellent. Silicone fluids blended with synthetic, organic fluids and are suitable for use at temperatures up to 450 degrees Fahrenheit.

However, advances will be restricted by the disadvantages associated with silicone fluids, such as high cost, very low surface

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TABLE V-3
AUTOMOTIVE MARKET FOR SYNTHETIC LUBRICANTS & FUNCTIONAL FLUIDS
 (million dollars)

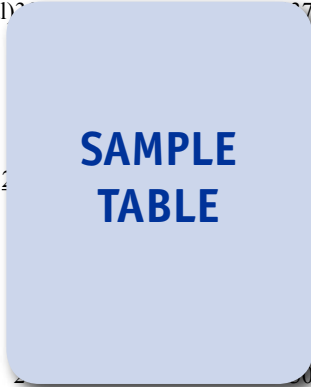
Item	2003	2008	2013	2018	2023
Motor Vehicles in Use (mil gal fluid/vehicle)	2				
Automotive Fluid Demand (mil gal) % synthetic					
Automotive Synthetic Fluids (mil gal) \$/gallon					
Synthetic Automotive Fluid Demand					
Light Vehicles					
Medium- & Heavy-Duty Vehicles					
Off-Highway Equipment					
% automotive					
Synthetic Lubricants/Functional Fluids 2					



Sample Profile, Table & Forecast

TABLE III-1
SYNTHETIC LUBRICANT & FUNCTIONAL FLUID DEMAND BY PRODUCT
 (million dollars)

Item	2003	2008	2013	2018	2023
Total Functional Fluid Demand (mil gal)					
% synthetic					
Synthetic Functional Fluid (mil gal) \$/gallon					
Synthetic Functional Fluid Demand					
Engine Oils					
Antifreeze & Deicing Fluids					
Transmission & Hydraulic Fluids					
Heat Transfer Fluids					
Metalworking Fluids					
Dielectric Fluids					
Other					



COMPANY PROFILES

Warren Oil Company Incorporated
 2340 US Highway 301 North
 Dunn, NC 28334
 910-892-6456
<http://www.warrenoil.com>

Annual Sales:
 Employment:

Key Products: motor oils, transmission fluids, greases, and antifreeze/coolants

Warren Oil compounds, blends and packages automotive, heavy-duty truck, agricultural equipment, and other lubricants, as well as household chemicals. The Company is privately held.

The Company is active in the US synthetic lubricant and functional fluid industry primarily through the production and marketing of a range of products, including synthetic and/or semi-synthetic motor oils, transmission fluids, heavy-duty lubricants, gear fluids, brake fluids, greases, and antifreeze/coolants. These products are primarily sold under the WARREN, COASTAL, LUBRIGOLD, LUBRIGUARD, and AUTOGUARD brand names. The Company also makes a wide range of private label motor oil, transmission fluid, brake fluid and other formulations. Warren Oil operates production and packaging facilities in Dunn, North Carolina; Benton, Alabama; San Antonio, Texas; Marion, Illinois; Johnstown, Pennsylvania; and West Memphis, Arkansas.

Among Warren Oil's motor oil offerings are fully synthetic and synthetic blend types. Fully synthetic motor oils feature high detergent levels for automotive applications, and are formulated with an additive

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STUDY COVERAGE

This Freedonia study, **Synthetic Lubricants & Functional Fluids**, offers historical data (2003, 2008, 2013) plus forecasts for 2018 and 2023 for demand by product type, chemical material, and market. The study also details key market environment factors, examines the industry structure, evaluates company market share and profiles 27 competitors in the US industry.

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OTHER STUDIES

World Biofuels

World demand for biofuels is expected to expand at a 3.6 percent annual pace, reaching 115 million metric tons in 2018. North America and Central and South America will remain the largest regional markets, while the Asia/Pacific region grows the strongest from a relatively small base. Bioethanol will remain the leading biofuel. This study analyzes the 96.3 million metric ton global biofuel industry, with forecasts for 2018 and 2023 by product, world region, and for 22 countries. The study also evaluates company market share and profiles industry participants.

#3179..... August 2014..... \$6200

World Graphite (Natural, Synthetic & Carbon Fiber)

World demand for natural and synthetic graphite (including carbon fiber) is forecast to expand 5.8 percent annually to 4.2 million metric tons in 2018, valued at \$30 billion. China will remain the largest and fastest growing market. Synthetic graphite will continue as the largest volume segment, while carbon fiber will grow the fastest. This study analyzes the 3.2 million metric ton world graphite industry, with forecasts for 2018 and 2023 by type, market, world region, and for 16 countries. The study also evaluates company market share and profiles industry players.

#3164..... August 2014..... \$6100

Solvents

US demand for solvents is expected to increase at a 1.5 percent annual pace through 2018 to 11 billion pounds. Growing environmental concerns and regulatory pressure will drive demand for "green" solvents that are derived from renewable raw materials. The paint and coatings market will replace the transportation market as the largest solvent consumer. This study analyzes the 10.2 billion pound US solvent industry, with forecasts for 2018 and 2023 by product and market. The study also evaluates company market share and profiles industry players.

#3169..... June 2014..... \$5100

Lubricants

US lubricant demand will rise less than one percent annually to 2.5 billion gallons in 2018, valued at \$27.5 billion. Although growth will be modest, this will be a reversal of an outright drop in demand between 2008 and 2013. Improved efficiency and less frequent oil replacement will be a common trend throughout light vehicle and other lubricant markets. This study analyzes the 2.4 billion gallon US lubricant industry, with forecasts for 2018 and 2023 by basestock, product and market. The study also evaluates company market share and profiles industry competitors.

#3143..... March 2014..... \$5200

World Lubricants

World demand for lubricants will rise 2.3 percent yearly to 43.9 million metric tons in 2017. Asia, South America, the Middle East, and Africa will lead gains based on rising vehicle ownership and ongoing industrialization. Hydraulic fluids and process oils will outpace engine oils due to longer drain intervals. This study analyzes the 39.2 million metric ton world lubricant industry, with forecasts for 2017 and 2022 by formulation, product, market, world region, and for 31 countries. The study also evaluates company market share and profiles industry players.

#3040..... July 2013..... \$6300

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