Lubricants

US Industry Study with Forecasts for 2014 & 2019

Study #2677 | October 2010 | $4900 | 375 pages
Table of Contents

COMPANY PROFILES
(continued from previous page)

Chevron Phillips Chemical..........................309
ConocoPhillips........................................310
Crona International................................315
cross Oil Refining & Marketing.................316
Dow Chemical........................................319
DuPont (ET) de Nemours..........................321
Ergon Incorporated................................323
Exxon Mobil..........................................325
FUCHS Petrolub.....................................329
Henkel AG.............................................332
Holly Corporation..................................334
Houghton International............................335
Illinois Tool Works................................337
Lubrizol Corporation...............................340
LyondellBasell Industries........................342
Marathon Oil.........................................343
Milacon LLC..........................................345
Petroleos de Venezuela............................347
Quaker Chemical....................................350
Rockwood Holdings................................353
Royal Dutch Shell....................................354
Safety-Kleen Systems..............................358
San Joaquin Refining..............................359
Sonneborn LLC......................................360
Suncor Energy.......................................362
Sunoco Incorporated................................367
Total SA..............................................366
Valero Energy.......................................370
Warren Oil...........................................371
Additional Firms Mentioned in the Study.....373

List of Tables/Charts

EXECUTIVE SUMMARY
1 Summary Table.....................................3

MARKET ENVIRONMENT
1 Macroeconomic Indicators.......................8
2 Manufacturers' Shipments......................11
3 Personal Consumption Expenditures..........13
4 Motor Vehicle Indicators.......................16
5 Petroleum Industry Indicators...............26
6 Lubricant Market, 1999-2009.................30
Cht Lubricant Market, 1999-2009.............31
7 Lubricant Pricing................................33
8 US Finished Lubricant Foreign Trade........43

LUBRICANT BASE OILS
Cht Lubricant Production Flowchart...........46
1 Lubricant Base Oil Demand..................49
Cht Petroleum Base Oil Refining Stages.....51
2 Petroleum Base Oil Supply & Demand......54

PRODUCTS
1 Lubricant Demand by Type......................73
Cht Lubricant Demand by Type, 2009 ..........74
2 Engine Oil Demand..............................77
3 Motor Vehicle Engine Oil Demand by Market....81
4 Motor Vehicle Engine Oil Demand by Grade......83
Cht Motor Vehicle Engine Oil Demand by Grade, 1999-2019 ....84
5 Other Engine Oil Demand.....................86
6 Process Oil Demand...........................88
Cht Process Oil Demand by Type, 2009 .........89
7 Rubber Oil Demand.............................91
8 White Oil Demand.............................94
9 Electrical Oil Demand.........................97
10 Other Process Oil Demand.............100
11 General Industrial Oil Demand......102
Cht General Industrial Oil Demand by Type, 2009 ....103
12 Industrial Hydraulic Fluid Demand.........106
13 Industrial Turbine Oil Demand...........108
14 Fire-Resistant Fluid Demand.............111
15 Other General Industrial Oil Demand......114
16 Transmission & Hydraulic Fluid Demand....116
Cht Transmission & Hydraulic Fluid Demand by Type, 2009 ....117
17 Metallworking Fluid Demand..............126
18 Gear Oil Demand...............................139
19 Grease Demand................................140

MARKETS
1 Lubricant Demand by Market..................144
Cht Lubricant Demand by Market, 2009 ..........145
2 Light Vehicles in Use..........................148
3 Light Vehicle Aftermarket Lubricant Demand......149
4 Light Vehicle Engine Oil Demand by Sector......151
5 Commercial & Industrial Lubricant Demand.....161
Cht Commercial & Industrial Lubricant Demand by End Use, 2009 ......162
6 Agricultural Indicators.........................165
7 Agricultural Lubricant Demand.............168
8 Electricity Generation........................170
9 Power Generation Lubricant Demand..........172
10 Construction Expenditures..................176
11 Construction Equipment Lubricant Demand.......178
12 Petroleum & Natural Gas Production......180
13 Petroleum & Natural Gas Lubricant Demand.......182
14 Mining Materials Handled...............184
15 Mining Lubricant Demand...............186
16 Other Commercial & Industrial Lubricant Demand......188
17 Transportation Equipment Aftermarket Lubricant Demand.......189
Cht Transportation Equipment Aftermarket for Lubricants, 2009 ..........190
18 Heavy Truck & Bus Indicators..............193
19 Heavy Truck & Bus Aftermarket Lubricant Demand...............195
20 Waterborne Commerce Indicators..........198
21 Marine Lubricant Demand..................200
22 Railroad Indicators.........................202
23 Railroad Lubricant Demand................203
24 Aircraft in Service..........................205
25 Aerospace Lubricant Demand...............207
26 Other Transportation Equipment Aftermarket Lubricant Demand....209
27 Nondurable Goods Lubricant Demand........211
Cht Nondurable Goods Lubricant Demand by Market, 2009 ..........212
28 Plastics & Rubber Demand...................214
29 Plastics & Rubber Lubricant Demand.........216
30 Food & Beverage Shipments...............219
31 Food & Beverage Lubricant Demand.........223
32 Cosmetic & Toiletry Supply & Demand......226
33 Cosmetic & Toiletry Lubricant Demand.....228
34 Chemical Product Shipments................231
35 Chemical Product Lubricant Demand.........232
36 Paper & Textile Products Shipments.......235
37 Paper & Textile Lubricant Demand.........237
38 Printing Ink Production......................239
39 Printing Ink Lubricant Demand...............241
40 Other Nondurable Goods Manufacturing Lubricant Demand.........242
41 Durable Goods Manufacturing Lubricant Demand..............244
Cht Durable Goods Manufacturing Lubricant Demand by Market, 2009 ......245
42 Transportation Equipment Shipments.......248
43 Transportation OEM Lubricant Demand.......250
44 Machinery Shipments........................252
45 Machinery Production Lubricant Demand......254
46 Metal Products Shipments..................256
47 Metal Production Lubricant Demand.........258
48 Other Durable Goods Manufacturing Lubricant Demand...........259

INDUSTRY STRUCTURE
1 US Lubricant Sales by Company, 2009 ..........262
Cht US Finished Lubricant Market Share, 2009.........263
2 Selected Cooperative Agreements...........271
3 Selected Acquisitions & Divestitures.........273
Lubricant demand will improve significantly on recent declines based in part on a turnaround in motor vehicle production and an acceleration in the number of automobiles in use.

**US demand to reach 2.25 billion gallons by 2014**

US demand for lubricants is forecast to expand 1.3 percent annually to 2.25 billion gallons in 2014, valued at $22 billion. This represents a significant improvement over the performance of the 2004-2009 period, when lubricant demand declined 5.0 percent annually. Going forward, renewed economic growth will propel lubricant market gains. In particular, a turnaround in motor vehicle production, along with an acceleration in the number of automobiles in use, will support demand for automotive lubricants. Additionally, increased manufacturing output will drive demand for industrial lubricants. However, total lubricant consumption is not expected to reach pre-recession levels. This will largely be due to the greater use of longer-lasting, higher-performing synthetic lubricants that extend drain intervals, therefore reducing overall lubricant requirements in volume terms. Average price increases will continue to be significant due to expected growth in crude oil prices and a shift in product mix toward higher-value lubricants.

**DIY engine oil aftermarket to lose share to DIFM**

Engine oils accounted for more than half of total US lubricant demand in volume terms in 2009. A significant rebound in motor vehicle output following the double-digit annual declines of the 2004-2009 period will propel engine oil demand in the factory fill segment. However, this represents only a small fraction of engine oil demand, and the overall outlook for these products in volume terms will be restricted by lengthening oil change intervals and the use of high performance synthetic lubricants. As such, aftermarket demand will decline, with the "do-it-yourself" segment continuing to lose out to "do-it-for-me" (DIFM) services, a trend which stalled in 2008 and 2009 as drivers sought out more economical alternatives for their vehicle service needs in the midst of difficult economic times. As the economy improves, many consumers will once again turn to professionals for their oil change needs due to the greater convenience that DIFM outlets provide.

**Process oils to be fastest growing segment**

Demand for process oils (e.g., white oils, rubber oils, electrical oils, ink oils, agricultural spray oils, defoamer oils) is forecast to advance at the most rapid pace. Gains will be promoted by re-bounding manufacturing activity following the real (inflation-adjusted) declines of the 2004-2009 period. In particular, an improved outlook for food and beverages, chemicals, and plastics and rubber will offer good opportunities for growth. However, process oils will continue to encounter challenges brought about by changing environmental and regulatory standards.
Fire-Resistant Fluids

Demand for fire-resistant fluids is expected to climb at a 4.2 percent annual rate to 16 million gallons in 2014, outpacing all other general industrial lubricants. This growth will be driven by increasingly stringent worker safety standards and the development of improved fire-resistant fluids, as well as the competition with a variety of conventional hydraulic fluids and lubricants.

Fire-resistant fluids are defined as lubricants which resist combustion and do not propagate flames once ignited. However, the designation of fire resistance does not mean that the fluid is nonflammable. Fire-resistant fluids are classified by the International Organization for Standardization (ISO). Standards include oil-in-water emulsions (ISO HFA), water-in-oil emulsions (ISO HFB), polymer-in-water (ISO HFC), and synthetics (ISO HFD). Widely accepted standards of flammability classification are set by FM Approvals, a business unit of Factory Mutual Insurance Company.

Oil-in-water emulsions, or high water base fluids, contain more than 90 percent water. A typical mixture is 95 percent water and 5 percent mineral oil with additives. Because these fluids are primarily water, they are the most fire-resistant. Other advantages include cost efficiency, stability, availability and nontoxicity. However, their use is limited because of corrosiveness and poor lubricity and viscosity characteristics.

Water-in-oil emulsions are also known as invert emulsions. Water levels are typically between 35 and 45 percent, since the fire-resistant properties are limited below 35 percent and mixtures above 45 percent show reduced antiwear properties. Advantages of invert emulsions include heat stability and compatibility with standard hydraulic systems.

### Table IV-1

<table>
<thead>
<tr>
<th>Item</th>
<th>1999</th>
<th>2004</th>
<th>2009</th>
<th>2014</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Domestic Product (bil 2005$)</td>
<td>10780</td>
<td>12264</td>
<td>12881</td>
<td>14800</td>
<td>16900</td>
</tr>
<tr>
<td>gal lubricant/000$ GDP</td>
<td>0.28</td>
<td>0.22</td>
<td>0.16</td>
<td>0.15</td>
<td>0.13</td>
</tr>
<tr>
<td>Lubricant Demand</td>
<td>2986</td>
<td>2727</td>
<td>2110</td>
<td>2250</td>
<td>2270</td>
</tr>
<tr>
<td>Engine Oils</td>
<td>1445</td>
<td>1325</td>
<td>1070</td>
<td>1070</td>
<td>1060</td>
</tr>
<tr>
<td>Process Oils</td>
<td>541</td>
<td>492</td>
<td>335</td>
<td>400</td>
<td>410</td>
</tr>
<tr>
<td>General Industrial Oils</td>
<td>381</td>
<td>358</td>
<td>290</td>
<td>310</td>
<td>310</td>
</tr>
<tr>
<td>Transmission &amp; Hydraulic Fluids</td>
<td>322</td>
<td>299</td>
<td>231</td>
<td>252</td>
<td>260</td>
</tr>
<tr>
<td>Metalworking Fluids</td>
<td>155</td>
<td>126</td>
<td>84</td>
<td>98</td>
<td>100</td>
</tr>
<tr>
<td>Gear Oils</td>
<td>86</td>
<td>77</td>
<td>58</td>
<td>73</td>
<td>80</td>
</tr>
<tr>
<td>Greases</td>
<td>56</td>
<td>50</td>
<td>42</td>
<td>47</td>
<td>50</td>
</tr>
<tr>
<td>$/gal lubricant/mil $</td>
<td>2.70</td>
<td>3.50</td>
<td>6.50</td>
<td>9.80</td>
<td>11.90</td>
</tr>
<tr>
<td>Lubricant Demand (mil $)</td>
<td>8050</td>
<td>9550</td>
<td>13800</td>
<td>22000</td>
<td>27000</td>
</tr>
</tbody>
</table>

### Chart VI-1

US Finished Lubricant Market Share, 2009
($13.8 billion)
Sample Profile, Table & Forecast

San Joaquin Refining Company Incorporated
3129 Standard Street
Bakersfield, CA 93308
661-327-4257
http://www.sjr.com

Annual Sales: over $400 million (estimated)
Employment: 130 (estimated)
Key Products:
naphthenic base oils, inhibited transformer oils and aromatic oils

San Joaquin Refining (SJR) is a privately held independent oil refiner that offers a wide range of petroleum-derived products. The Company’s products are employed in many applications, including lubricants, printing inks, rubber and plastics, adhesives, automotive, construction, paints and coatings, roofing, fuels and road paving.

The Company is involved in the US lubricant industry through the manufacture and supply of petroleum base oils, including HYNAP hydrotreated naphthenic base oils, RAFFENE severely solvent-refined naphthenic base oils, HYTRANS naphthenic inhibited transformer oils and RAFFEX aromatic oils. Available in several grades, HYNAP and RAFFENE oils are typically employed as rubber process and extender oils, lubricant base oils, and printing ink base oils. HYTRANS inhibited transformer oils feature hydrotreated naphthenic distillate and oxidation inhibitor chemicals. SJR’s RAFFEX aromatic oils exhibit low aniline points and high aromatic content. The Company refines heavy naphthenic crude oil at a single refinery in Bakersfield, California.

---

TABLE V-7
AGRICULTURAL LUBRICANT DEMAND (million gallons)

<table>
<thead>
<tr>
<th>Item</th>
<th>1999</th>
<th>2004</th>
<th>2009</th>
<th>2014</th>
<th>2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Farms (000)</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
<td>2200</td>
</tr>
<tr>
<td>gal lubricant/farm</td>
<td>59.8</td>
<td>61.2</td>
<td>49.5</td>
<td>52.7</td>
<td>54.1</td>
</tr>
<tr>
<td>Agricultural Lubricant Demand</td>
<td>132</td>
<td>132</td>
<td>109</td>
<td>116</td>
<td>119</td>
</tr>
<tr>
<td>Transmission &amp; Hydraulic Fluids</td>
<td>64</td>
<td>60</td>
<td>58</td>
<td>63</td>
<td>65</td>
</tr>
<tr>
<td>Engine Oil</td>
<td>22</td>
<td>21</td>
<td>20</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>Process Oils</td>
<td>31</td>
<td>36</td>
<td>17</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Other</td>
<td>15</td>
<td>15</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>% agricultural</td>
<td>27.5</td>
<td>27.6</td>
<td>26.0</td>
<td>25.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Commercial &amp; Industrial Lubricants</td>
<td>480</td>
<td>479</td>
<td>420</td>
<td>460</td>
<td>480</td>
</tr>
</tbody>
</table>

---

“Demand for oils and lubricants used by the agricultural market is forecast to expand 1.3 percent annually to 116 million gallons in 2014, rebounding from the declines of the 2004-2009 period based on increases in total land in farms and cropland planted. Demand for transmission and hydraulic fluids, as well as process oils, will support overall gains. There will be stable demand for more environmentally friendly hydraulic fluids, drip lubricants and other products due to ...”

--Section V, pg. 165
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World Oilfield Chemicals
Global oilfield chemical demand will rise 6.6% yearly through 2014, driven by a recovery in the oil and gas industry and higher oil and gas prices. North America will remain the dominant market while the Central and South American region grows the fastest. Stimulation and enhanced oil recovery chemicals will lead gains. This study analyzes the $13.7 billion world oilfield chemical industry, with forecasts for 2014 and 2019 by product, world region and for 26 countries. It also evaluates market share and profiles industry players.
#2702 December 2010 $5900

World Biofuels
Global biofuel demand will grow 10.3% annually through 2014. Bioethanol will see the greatest gains, driven by the large North American market as well as the faster growing markets in the Asia/Pacific region and Europe. The smaller biodiesel market will be the more rapidly growing segment. This study analyzes the 74.1 million metric ton global biofuel industry, with forecasts for 2014 and 2019 by product, world region and for 28 countries. It also evaluates company market share and profiles industry participants.
#2668 September 2010 $5900

Well Stimulation Materials
US demand for oil and gas well stimulation materials is projected to increase 14% annually through 2014. Gains will be buoyed by renewed efforts to reduce dependence on foreign energy sources. The largest segment, proppants, will also be one of the fastest growing, along with gases and other materials. This study analyzes the $3.8 billion US well stimulation material industry, with forecasts for 2014 and 2019 by product and US regional market. It also evaluates company market share and profiles industry players.
#2636 May 2010 $4900

Synthetic Lubricants & Functional Fluids
US demand for synthetic lubricants and functional fluids will expand 3.2% annually through 2013. Engine oils and hydraulic and transmission fluids will grow the fastest as synths finally begin to penetrate the medium- and heavy-duty truck market and expand market share in the light vehicle segment. This study analyzes the $4.1 billion US synthetic lubricant and functional fluid industry, with forecasts for 2013 and 2018 by product, material and market. It also evaluates company market share and profiles industry competitors.
#2582 March 2010 $4700

Soy Chemicals
US soy chemical demand will grow 7.8% annually through 2013, driven by the continued penetration of biodiesel, and by the adoption of alternatives to traditional, petrochemical-based materials in manufacturing. Soy oil derivatives such as methyl soyate, polyols, soy-based foamed plastics, waxes and fatty acids hold particularly good prospects. This study analyzes the $1.9 billion US soy chemical industry, with forecasts for 2013 and 2018 by product and market. It also evaluates market share and profiles industry players.
#2538 September 2009 $4700

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