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World Catalysts

Industry Study with Forecasts for **2012 & 2017**

Study #2407 | October 2008 | \$5900 | 428 pages



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Growth will be strong across all catalyst market segments as high energy prices help support increased catalyst demand as a means of improving productivity.

Global demand to expand 6% yearly through 2012

World catalyst demand will expand at a 6.0 percent annual pace to \$16.3 billion in 2012, with volume demand growing at a 2.0 percent annual pace to 5.3 million metric tons. Growth will be strong across all market segments as high energy prices help support increased catalyst demand as a means of improving productivity. Upward pressure on average prices will also continue due to a combination of underlying support from strong demand, and a shifting product mix toward higher cost/more efficient products.

From a materials perspective, the strongest growth in catalyst demand will be for enzyme catalysts, particularly those used in the production of biofuels. Organometallic catalysts, the majority of which are consumed in polymer production, will also experience above average gains.

Polymerization, petroleum refining catalysts to be fastest growing

Polymerization catalysts will experience the fastest growth through 2012, due in part to the rapid expansion in polymer capacity in the Africa/Mideast and Asia/Pacific regions. Additionally, companies are often opting to use newer, more active (and more expensive) single-site polymer catalysts in place of traditional alternatives, which will drive value gains.



Catalyst demand in the petroleum refining industry will also be quite strong due to healthy volume growth in hydro-processing catalysts, and higher refined product output in the Africa/Mideast and Asia/Pacific regions. Global efforts to reduce air pollution by lowering sulfur content in motor vehicle fuels will continue to boost catalyst loadings, as will the ongoing shift toward heavier grades of crude oil, and the development of unconventional petroleum resources such as Canada's tar sands. In the Africa/Mideast and Asia/Pacific regions, increasing motor fuel demand due to the rapid rise of the middle class and the rapid expansion of the motor vehicle fleet will lead to strong growth in new refinery construction and expanded refined product output.

The chemical industry will experience the slowest growth in catalyst demand going forward, though it will remain quite healthy. In particular, organic synthesis catalyst demand will be impacted in the near term by a dearth of new products in the pharmaceutical industry. However, this will be offset somewhat by the expansion of the petrochemical industry in Eastern Europe (especially in Russia), and the Africa/Mideast and Asia/Pacific regions. Additionally, the recovery of the global fertilizer industry and the development of new gas-, coal-, and biomass-to-liquids facilities will help drive strong synthesis gas catalyst demand, particularly over the longer term.

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Sample Text, Table & Chart

CATALYST PRODUCTS & MARKETS

Petroleum Refining Catalysts

Worldwide demand for petroleum refining catalysts is forecast to increase to 4.4 million metric tons per year in 2012. In volume terms, consumption is expected to grow at an average rate of 1.2% per year to 4.4 million metric tons per year in 2012. This growth will be driven by the need for processing and alkylation catalysts, which will all rise to 4.4 million metric tons per year in 2012, overcoming more moderate growth in fluid catalytic cracking catalysts. On a geographic basis, Asia/Pacific and the Other Regions will continue to be the primary drivers for the greatest opportunities for growth, while more technologically advanced regions (such as Western Europe, North America and Japan) will trail overall gains. Generally, the latter have already installed catalytic refining capacity (FCC, hydrocracking and reforming, for example), while developing nations tend to still be highly dependent on non-catalytic distillation and thermal cracking processes. In addition, a large portion of the gains in hydrotreating catalyst demand for North America, Western Europe and Japan have already been realized, as manufacturers prepared for new low sulfur regulations in motor vehicle fuels that were implemented in these regions during 2005 and 2006.

Average refining catalyst pricing experienced sharp swings over the 1997 to 2007 period; however, this is not reflective of catalyst pricing trends within all of the various segments of the market. Stagnant average catalyst pricing from 1997 to 2002 was a result both of weaker FCC catalyst pricing and a product mix shift which saw increasing demand for cheap sulfuric acid in alkylation processes. Conversely, average catalyst prices jumped across the board from 2002 to 2007 as catalyst manufacturers, beginning in late 2004, passed along increased raw material (primarily metal) and energy costs. It is also worth mentioning that catalyst price increases accelerated even further through the first half of 2008 as apparent speculation in the global energy and metal markets neared a fever pitch, and sulfur shortages resulted in a significant spike in sulfuric acid prices.

SAMPLE
TEXT

TABLE IV-3

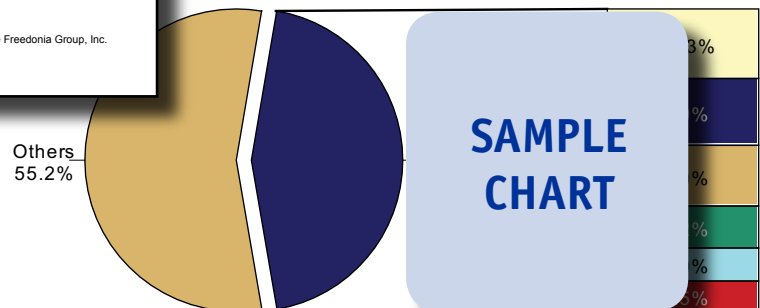
WORLD ORGANIC SYNTHESIS CATALYST DEMAND (million dollars)

Item	1997	2002	2007	2012	2017
World GDP (bil 2006\$)	44	50	55	60	65
metric tons catalyst/bil \$ GDP					
Organic Syn Catalysts (000 m tons)					
\$/metric ton					
Organic Synthesis Catalyst Demand					
North America					
Western Europe					
Asia/Pacific					
Other Regions					
% organic synthesis					
Chemical Catalyst Demand					

SAMPLE
TABLE

CHART IX-1

WORLD CATALYST MARKET SHARE, 2007 (\$12.2 billion)



SAMPLE
CHART

Sample Profile, Table & Forecast

COMPANY PROFILES

Univation Technologies LLC
 5555 San Felipe Drive, Suite 1950
 Houston, TX 77056
 713-892-3700
<http://www.univation.com>

Annual Sales
 Employment

Key Products
 catalysts

**SAMPLE
PROFILE**

Univation Technologies LLC is a technology development and catalyst supplier for polyethylene and the Exxon Mobil Corporation, all three of which are based in the US. The Company is a leading technology licensor and catalyst supplier for polyethylene production operations. Technology and catalysts from Univation are reportedly used in nearly 100 polyethylene facilities around the world.

The Company participates in the world catalyst industry through the production of metallocene, bimodal, chromium and Ziegler-Natta catalysts used in the polymerization of polyethylene. Specifically, Univation makes a range of catalysts intended for use with its licensed polyethylene production technologies, including the UNIPOL (Dow Chemical) gas-phase, fluidized-bed process for polyethylene production. Among Univation's catalysts for use in UNIPOL polyethylene systems are XCAT, PRODIGY and UCAT products. For example, XCAT metallocene catalysts are intended for producing linear low density polyethylene (LLDPE) resins. In particular, the XCAT range includes HP high-performance and EZ easy-processing grades for manufacturing resins with different properties.

TABLE VII-12

TAIWAN CATALYST DEMAND (million US dollars)

Item	1997	2002	2007	2012	2017
Gross Domestic Prdt (bil US 2006\$)	415	475	515	555	610
metric tons catalyst/bil \$ GDP	1.5	1.5	1.5	1.5	1.8
Catalyst Demand (000 metric tons)	620	710	770	830	910
\$/metric ton	60	60	60	60	60
Catalyst Demand					
Chemical Synthesis					
Petroleum Refining					
Polymerization					
% Taiwan	15	15	15	15	15
Asia/Pacific Catalyst Demand	15	15	15	15	15

**SAMPLE
TABLE**

"Demand for catalysts in Taiwan is forecast to increase 5.2 percent per year to US\$225 million, or 76,000 metric tons, in 2012. Although demand in petroleum refining applications will continue to exceed overall gains, growth will decelerate from the pace set over the past decade. In the past, growth was boosted by rapid capacity expansions to meet domestic demand, and more recently strong increases in refinery catalyst prices."

--Section VII, pg. 236

OTHER STUDIES

World Oilfield Chemicals

This study analyzes the global oilfield chemical industry. It presents historical demand data for (1997, 2002 and 2007) and forecasts for 2012 and 2017 by type (e.g., drilling fluids, oilfield cement and cement additives, demulsifiers, corrosion and scale inhibitors, biocides, stimulation chemicals, EOR chemicals, completion and workover fluids), world region and major country. The study also considers market environment factors, reviews oilfield technology, evaluates company market share and profiles industry competitors.

#2437 12/2008..... \$5700

Fuel Additives

The US market for fuel and lubricant additives is analyzed in this study. It presents historical demand data for 1997, 2002 and 2007 and forecasts for 2012 and 2017 by type and application. The study also considers market environment, environmental and regulatory factors affecting demand, as well as the overall outlook for the petroleum industry. Included are profiles of industry competitors and evaluations of company market share.

#2409 12/2008..... \$4500

World Activated Carbon

Global activated carbon demand will rise 5.2% yearly through 2012. Of the top three markets, China will gain market share while the US and Japan lose market share. Water treatment will remain the top segment, although other uses such as power plant flue gas treatment and motor vehicle emission canisters will grow faster. This study analyzes the world activated carbon industry, with forecasts for 2012 and 2017 by type, application, market, world region and for 17 countries. It also evaluates market share and profiles industry players.

#2363 05/2008..... \$5700

Enzymes

US demand for enzymes will grow 6% annually through 2012. Advances will be led by continued rapid expansion in the fuel ethanol segment of the starch processing enzyme market, as well as strong growth in the large pharmaceutical and smaller biocatalyst and pulp and paper markets. Animal feed will also contribute to gains. This study analyzes the \$1.9 billion US enzyme industry, with forecasts for 2012 and 2017 by market and product. It also evaluates market share and profiles industry competitors.

#2351 06/2008..... \$4600

World Biofuels

Global demand for biofuels will grow 20% annually through 2011, despite concerns about their impact on the environment and food supplies. Bioethanol and biodiesel will lead gains. North America will remain dominant while the Asia/Pacific region and Western Europe grow faster. This study analyzes the 37.7 million metric ton world biofuel industry, with demand and production forecasts for 2011 and 2016 by fuel, world region and for 16 countries. It also evaluates market share and profiles major players.

#2287 03/2008..... \$5500

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