photo: BASF

World Catalysts

Industry Study with Forecasts for **2016 & 2021**

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Industry Study with Forecasts for ***2016 & 2021***

Table of Contents

List of Tables/Charts

(continued on following page)

World Catalysts

Industry Study with Forecasts for ***2016 & 2021***

List of Tables/Charts

(continued from previous page)

World Catalysts

Industry Study with Forecasts for ***2016 & 2021***

Growth will result from rising output of the world's refining, chemical, and polymer industries, as well as an ongoing shift in the catalyst product mix toward higher value, more efficient catalysts.

World demand to rise 5.8% annually through 2016

World demand for petroleum refining, chemical synthesis, and polymerization catalysts will rise 5.8 percent per year to $19.5 billion in 2016. Growth will result from rising output of the world's refining, chemical, and polymer industries, particularly in developing nations, as well as an ongoing shift in the catalyst product mix toward higher value, more efficient catalysts.

Polymerization catalysts to see fastest gains

Polymerization catalysts will experience the fastest growth globally, driven by healthy expansion of polymer resin production. Plastic products will continue to displace other materials in a variety of applications, while rising incomes in developing nations will also contribute to additional plastic consumption. Ziegler-Natta and single-site catalysts will benefit most.

Asia/Pacific region to see rapid growth in demand

Rapid growth through 2016 will occur in both Asia and the Middle East. In Asia, growth will be led by China and India, and result from rapid industrialization and expansion of the refining, chemical, and polymer industries in both countries. China's rising income levels, vehicle ownership rates, and industrial activity will all contribute to strong growth in demand for catalysts. In the Middle East, Saudi Arabia and other large oil and natural gas producers will continue efforts to expand and diversify their economies by investing in new chemical and petroleum refining capacity. Polymer producers in the Middle East will increasingly compete in global markets.

Brazil will lead strong growth in Central and South America. The country is beginning to successfully develop its natural gas and oil resources. This will provide a competitive advantage for chemical and polymer producers, while the nation's large population will provide a strong market for products manufactured with the use of catalysts.

Catalyst demand in North America will see healthy growth as well, due largely to a rebound in chemical and polymer production as companies take advantage of comparatively low natural gas prices, which have fallen from the historical highs observed during the 2006-2011 period. The low gas prices will also encourage further development of catalyst technologies involved in converting natural gas to liquid fuels and other valuable products. Demand for refining catalysts in North America will be flat, as motor vehicle fuel demand stagnates due to competition from biofuels and increasing fuel efficiency of the vehicle fleet. Additionally, intense competition in global export markets will strain margins for North American refiners.

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Industry Study with Forecasts for ***2016 & 2021***

Sample Text, Table & Chart

TABLE VII-10

**INDIA:
CATALYST DEMAND BY MARKET**

Item	2001	2006	2011	2016	2021
Gross Domestic Product (bil 2010$)					
metric tons catalyst/bil $ GDP					
Catalyst Demand (000 metric tons)					
Petroleum Refining					
Chemical Synthesis					
Polymerization					
$/metric ton					
Catalyst Demand (mil $)					
Petroleum Refining					
Chemical Synthesis					
Polymerization					
% India					
Asia/Pacific Catalyst Demand (mil $)					

SAMPLE TABLE

ASIA/PACIFIC

India: Catalyst Demand

Demand for catalysts in India is forecast to advance year t ... metric tons, in 2016. Al catal ... double-digit growth. Th will r ... lyst consuming industrie leum ... esult from modernization refin ... on of catalytic processes, hydr

SAMPLE TEXT

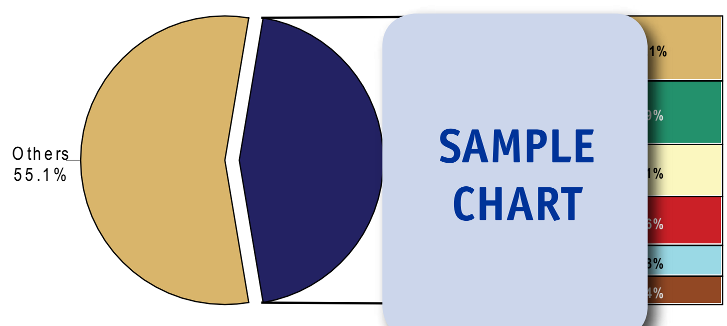
Chemical synthesis catalysts made up the largest por in value terms in 2011. The Indian chemical industry is t largest in the Asia/Pacific region in chemical manufacturi terms, behind only China. It will continue to experience both to meet the demands of a rapidly industrializing eco increase participation in export markets. Though the bulk production is currently in basic industrial chemicals, future growth is expected to be strongest in fine and specialty chemicals. India's pharmaceutical segment, in particular, is expected to grow at rates significantly faster than the chemical industry as a whole, with commensurately increasing catalyst consumption.

The second largest market in 2011 for catalysts in India was petroleum refining, which has also experienced the most rapid growth over recent years. Strong growth has been due to several large refining projects being completed during the 2006-2011 period, most notably the expansion of Reliance Industries' Jamnagar refinery com the largest in the world. Although growth has been seen for ing catalysts, they are still used in far smaller quantities in In most other petroleum refining nations, relative to the amount being processed. Over the next several years, the rapid expa catalyst market will continue, with the most significant gains hydrotreating catalysts.

223

CHART IX-1

**WORLD CATALYST MARKET SHARE
($14.7 billion, 2011)**



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Sample Profile, Table & Forecast

TABLE VII-9

**INDIA:
CATALYST MARKET INDICATORS**

Item	2001	2006	2011	2016	2021
Gross Domestic Product (bil 2010$)					
GDP/capita					
Population (mil persons)					
Manufacturing Value Added (bil 2010$)					
Refined Products Production (mil m ton					
Chemical Mfg Value Added (bil 2010$)					
Polymer Production (mil metric tons)					
$ catalyst demand/000$ GDP					
Catalyst Demand (mil $)					

SAMPLE
TABLE

COMPANY PROFILES

Univation Technologies LLC
5555 San Felipe, Suite 1950
Houston, TX 7
713-892-3700
http://www.un

Annual Sales:
Employment:

Key Products: bimodal catalysts

SAMPLE
PROFILE

Univation Technologies operates as a 50/50 technology development and licensing joint venture between Dow Chemical Company and the ExxonMobil Chemical Company subsidiary of 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.

The Company is involved in the world catalyst industry through the production of chromium, Ziegler-Natta, metallocene, and bimodal catalysts employed in the polymerization of polyethylene. Specifically, Univation Technologies produces a variety of catalysts intended for use with Dow Chemical's UNIPOL gas phase, fluidized bed process for polyethylene manufacturing.

Univation Technologies' catalysts for use in the UNIPOL polyethylene process are sold under the UCAT, XCAT, PRODIGY, and UT brand names. UCAT catalysts, which consist of conventional chromium and Ziegler-Natta types, can be used in the production of both high density polyethylene (HDPE) and linear low density polyethylene (LLDPE) resins. XCAT metallocene catalysts, which are intended for

404

"The polymerization catalyst market is the smallest of the three markets currently, though it will exhibit the fastest growth going forward. This growth will result from the rapid expansion of polymer output, as India's polymer industry adds capacity to meet domestic and export demand. The addition of new, modern petroleum refining capacity will improve the availability of petrochemical feedstocks used in the manufacture of polymer resins."
--Section VII, pg. 223-4

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Other Studies

Activated Carbon

US demand for activated carbon will rise 11.2 percent per year to 1.3 billion pounds in 2017, driven by the EPA's new mercury removal standards. Industrial air purification will be the fastest growing application, surpassing water treatment as the largest use by volume. Motor vehicle applications will lead gains among smaller uses. This study analyzes the 758 million pound US activated carbon industry, with forecasts for 2017 and 2022 by type, application, and US region. The study also evaluates company market share and profiles industry players.

#3018 .... May 2013 .... $5300

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 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 workover 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

World Hydrogen

Global demand for hydrogen is projected to increase 4.1 percent annually through 2016 to 286 billion cubic meters. Chemical manufacturing will be the fastest growing market while petroleum refining will remain dominant. The Asia/Pacific region will continue as the largest market and grow the fastest. This study analyzes the 233.7 billion cubic meter world hydrogen industry, with forecasts for 2016 and 2021 by market, source, world region and for 17 major countries. The study also evaluates company market share and profiles industry participants.

#2895 .... July 2012 .... $5900

World Rubber Processing Chemicals

Global demand for rubber processing chemicals will rise 4.7 percent yearly to 1.4 million metric tons in 2015. China will remain the largest and fastest growing market. Accelerators and processing aids will be among the fastest growing types, while antidegradants will remain the largest segment. This study analyzes the 1.1 million metric ton world rubber processing chemical industry, with forecasts for 2015 and 2020 by type of rubber, chemical, market, world region and for 27 countries. The study also evaluates company market shares and profiles industry players.

#2863 .... March 2012 .... $6100

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