World Fluorochemicals

Industry Study with Forecasts for **2011 & 2016**

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Value gains for fluorochemicals are expected to rise 5.5 percent per year through 2011 to $17.4 billion, aided by the positive outlook for higher value products such as HFCs and fluoropolymers.

World demand to rise 3.1% annually through 2011

Global demand for fluorochemicals is forecast to increase 3.1 percent per year through 2011 to 2.9 million metric tons, benefitting from the continued expansion of the global economy. Value gains for fluorochemicals are expected to rise 5.5 percent per year through 2011 to $17.4 billion, aided by the positive outlook for higher value products such as HFCs and fluoropolymers. Rising income levels and advancing manufacturing sectors are directing most of the demand growth to industrializing countries, where fluorochemical markets are also benefitting from a less restrictive regulatory environment, a trend illustrated by the recent emergence of China as the world's largest fluorochemical market. More aggressive regulations are restraining fluorochemical consumption in developed counties, particularly when in combination with slower manufacturing growth and higher market penetration of fluorochemical-using consumer goods.

World Fluorochemical Demand
(2.5 million metric tons, 2006)

Regulations causing flux in fluorocarbon market

International agreements such as the Kyoto and Montreal Protocols, in conjunction with national government regulations, are generating significant flux within the expanding fluorocarbon market. Although the ongoing phase-out for ozone depleting CFCs is nearly complete in most markets, global consumption of less damaging HCFCs continues to expand. Mirroring the historical trend in CFCs, HCFC demand has migrated from developed to developing countries, where rising personal income levels are supporting strong increases in consumer markets. HFC demand continues to expand strongly worldwide, although rising concerns over climate change and increasing competition from nonfluorinated alternatives will dampen HFC gains in Western Europe.

Fluoropolymers, fluorine gases to pace rest of market

Outside of the volatile fluorocarbon market, growth prospects for fluorochemicals are being led by higher value products such as fluoropolymers and specialty fluorine gases. The continued advancement of manufacturing, both technologically and geographically, is generating widespread industry demand for the high performance capabilities of fluoropolymers, particularly in the motor vehicle and electronics sectors. There are also strong longer term prospects in the emerging fuel cell market. Specialty fluorine gases, particularly nitrogen trifluoride, are also benefitting strongly from the continued global expansion of electronics production. More modest gains are expected for commodity inorganic fluorochemicals, with aluminum fluoride accounting for much of this growth, as consumption pursues the expansion of aluminum smelting into developing markets.

Sample Text, Table & Chart

TABLE VI-10

INDIA -- FLUOROCHEMICAL DEMAND BY MARKET
(000 metric tons)

Item	1996	2001	2006	2011	2016
Gross Domestic Product (bil 2005$)	2125	[illegible]	[illegible]	[illegible]	7300
kg fluorochem/mil $ GDP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fluorochemical Demand	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Refrigerants	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aluminum Production	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Blowing Agents	[illegible]	[illegible]	[illegible]	[illegible]	8
Components	[illegible]	[illegible]	[illegible]	[illegible]	4
Other	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
% India	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Asia/Pacific Fluorochemicals	[illegible]	660	990	1260	1590

Source: The Freedonia Group, Inc.

ASIA/PACIFIC

India: Markets

Demand for fluorochemicals in India is forecast to rea[…] metric tons in 2011, accounting for seven percent of the As[…] market. As the fastest growing major fluorochemical mark[…] undergoing rapid increases in demand across all fluoroche[…] tions, with the best growth prospects being in refrigerants […] nents, along with smaller markets such as pharmaceuticals […] intermediates.

As India's economy develops, rising income levels are enabling a greater portion of the citizenry to purchase luxuries such as refrigerators and air conditioners, which is helping to generate a strong expansion in the demand for fluorocarbon refrigerants. The recent gains in refrigerant demand are indicative of India's potential as a refrigerant market, as there continues to be very low market penetration of refrigerant-consuming products. India's motor vehicle industry is also expanding strongly, and although air conditioners have a lower market penetration among India's motor vehicles relative to the developed world, this does represent a growth market for HFCs. Nonfluorinated refrigerants are present in India, but cost concerns will limit them to a minor role through the forecast period.

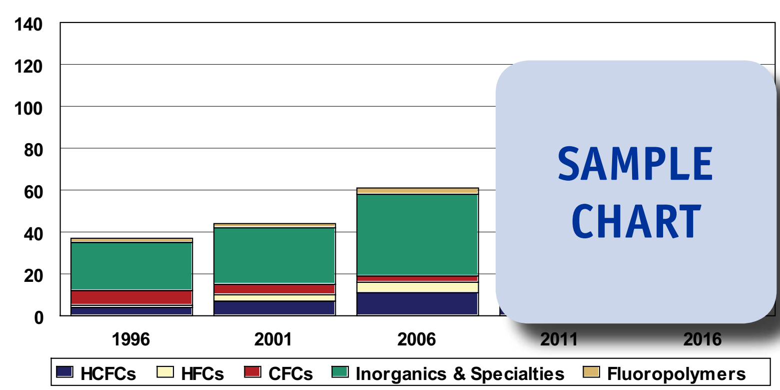
India's largest fluorochemical market, aluminum production, is also expanding strongly, although much of the ongoing expansion in aluminum smelting is being met with modern, chemically efficient equipment, which is becoming a modest restraining factor on demand. […] cal blowing ag[…]ted to post less i[…] gains, with de[…] environmental […] directed at cur[…]

SAMPLE TEXT

SAMPLE TABLE

CHART VI-3

INDIA FLUOROCHEMICAL DEMAND BY TYPE
(000 metric tons)



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Sample Profile, Table & Forecast

TABLE VI-8

INDIA -- FLUOROCHEMICAL SUPPLY & DEMAND
(000 metric tons)

Item	1996	2001	2006	2011	2016
Population (million persons)					
$ GDP/capita					
Gross Domestic Product (bil 2005$)					
Gross Capital Fixed Invest (bil 2005$)					
Motor Vehicle Production (000)					
Motor Vehicles in Use (mil)					
Comm Refrigeration Shpts (mil $)					
Aluminum Production					
Fluorochemical Demand					
+ net exports					
Fluorochemical Production					

SAMPLE TABLE

COMPANY PROFILES

Chemtura Corporation
199 Benson Road
Middlebury, CT 06749
203-573-2000
http://ww

Sales: $
Geograp ... 50%, Canada 3%,
Latin Ar ... sia/Pacific 15%
Employ

Key Pro ... bons, fluorosurfac-
tants an

SAMPLE PROFILE

Chemtura is a manufacturer of specialty chemicals and polymer products. The Company operates in six segments: Plastic Additives, Polymers, Specialty Additives, Crop Protection, Consumer Products and Other.

The Company competes in the global fluorochemicals market via the Other segment, which had 2006 sales of $145 million. Through the segment's Fluorine Chemicals division, Chemtura is engaged in the production fluorinated intermediates, fluorocarbons, fluorosurfactants and fluorochemical-based products. These products are chemically inert and have high thermal stability. The Company produces these products mainly at a facility in El Dorado, Arkansas.

Fluorinated intermediates from Chemtura include trifluoropropene, bromotrifluoropropane, bromodifluoroethane and bromofluoropropane, which are used in bioactive pharmaceuticals and agricultural compounds to enhance lipophilicity, decrease toxicity and maximize efficiency. Other fluorinated intermediates are engineered for use in the

295

"Demand for fluorochemicals in India is forecast to increase 7.1 percent annually through 2011 to 86,000 metric tons, establishing India as the fastest growing fluorochemical market in the world. This growth is being driven by India's strongly developing economy, particularly with respect to motor vehicle and aluminum production. Over half of India's fluorochemical consumption is inorganic and specialty fluorochemicals, most of which are aluminum fluoride and cryolite used in aluminum smelting. India is an emerging player in ..."

--Section VI, pg. 192

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Other Studies

HVAC Equipment

US HVAC equipment demand will rise 3.2% annually through 2011, driven mainly by robust growth in nonresidential construction and ongoing strength in residential replacement. Heat pumps are now the largest heating type and will continue to leads gains. Unitary air conditioners will remain the leading type of cooling eqipment. This study analyzes the $14.3 billion US HVAC equipment industry, with forecasts for 2011 and 2016 by fuel, type and market. It also details market share and profiles major players.

#2259 .... 10/2007 .... $4500

Flame Retardants

US demand for flame retardants will rise 3% annually through 2011, driven by increasingly stringent fire codes and flammability requirements, especially in building materials and consumer products. Phosphorus-based types will grow the fastest, while brominated compounds will continue to lead the market in total value. This study analyzes the $827 million US flame retardant industry, with forecasts for 2011 and 2016 by type and market. It also evaluates company market share and profiles leading competitors.

#2217 .... 08/2007 .... $4400

Specialty Gases

Specialty gas demand in the US will grow 5% annually through 2011. Best market opportunities are expected in electronics and manufacturing, as well as in a variety of new and/or lower volume uses such as home health care, propellants and packaging. Oxygen, noble gases and fluorine-based gases will lead gains by type. This study analyzes the $2.8 billion US specialty gas industry, with forecasts for 2011 and 2016 presented by product and market. It also evaluates market share and profiles major players.

#2192 .... 05/2007 .... $4400

Air Pollution Control in China

Demand for air pollution control equipment in the world's leading emitter of sulfur dioxide and other air pollutants will grow 18% annually through 2010. Particulate removal equipment will remain the largest product category and grow the fastest. Manufacturing and utilities will stay the top markets. This study analyzes the ¥30 billion Chinese air pollution control industry to 2010 and 2015 by product, market and region. The study also evaluates company market share and profiles leading industry players.

#2163 .... 04/2007 .... $4900

Industrial Gases

US industrial gas demand will grow 3.6% annually through 2010. Best opportunities will remain in the key petroleum and natural gas market while faster growth will occur in smaller volume uses such as electronics and healthcare. Hydrogen will continue as the most valuable market while argon will be the fastest growing gas. This study analyzes the $8.4 billion US industrial gas industry to 2010 and 2015 by type, delivery method and market. It also details company market share and profiles major players.

#2149 .... 02/2007 .... $4400

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