INDUSTRY MARKET RESEARCH FOR BUSINESS LEADERS, STRATEGISTS, DECISION MAKERS

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World Flame Retardants

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

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World Flame Retardants

Industry Study with Forecasts for *2016 & 2021*

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World Flame Retardants

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

Demand will benefit from an improved economic outlook, the rising use of plastic products in place of less flammable materials, and trends promoting more stringent safety and flammability standards.

World demand to rise 5.4% annually through 2016

World demand for flame retardant additives is forecast to rise 5.4 percent per year to 2.6 million metric tons in 2016. Advances will represent an acceleration from the pace of the 2006-2011 period, during which demand was severely impacted by the effects of a global economic slowdown. In addition to an improved economic outlook, flame retardant demand will benefit from the rising use of plastic products in place of less flammable materials and trends promoting more stringent safety and flammability standards, particularly in the developing world.

Asia/Pacific region to become dominant market

The Asia/Pacific region will continue to be largest and fastest growing market for flame retardants, accounting for over half of world demand in 2016. Advances will be fueled by over eight percent annual growth in the Chinese and Indian markets, strong increases in Thailand and other less developed countries in the region, and solid growth in major electronics-producing countries such as Taiwan and South Korea. Gains in North America will be driven by above average expansion of the markets in the US and Mexico. Central and South America will also see strong growth, driven by rapid gains in the Brazilian market. Demand in Western Europe will rise at a subdued pace, although it will rebound from the declines of the 2006-2011 period.

World Flame Retardant Demand
(2.6 million metric tons, 2016)

Boron and phosphorus compounds to grow the fastest

Alumina trihydrate, the leading flame retardant product by volume, is expected to post above average gains in demand through 2016, driven by trends toward non-halogenated chemicals. Even more rapid advances, however, are forecast for boron compounds, driven largely by the increased demand for cellulosic insulation in building construction. Above average growth is also anticipated for phosphorus compounds and other flame retardants such as magnesium hydroxide, which feature favorable environmental and health profiles. Although brominated flame retardants are being phased out of a number of applications, demand for these products will remain solid, supported by the development of new, more environmentally friendly types.

Building construction market to see fastest gains

Electrical and electronics applications were the leading market for flame retardants in 2011, accounting for one-quarter of total demand. However, faster gains are expected for the building construction market, fueled by the increasing use of flammable plastic construction materials and stricter flammability standards in the developing world. Motor vehicle, wire and cable, and textile markets for flame retardants will also see advances in demand.

World Flame Retardants

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

Sample Text, Table & Chart

TABLE VI-5

CHINA: FLAME RETARDANT DEMAND BY MARKET (thousand metric tons)

Item	2001	2006	2011	2016	2021
Manufacturing Value Added (bil 2010$)					
kg flame retardant/mil $ MVA					
Flame Retardant Demand					
Electrical/Electronic					
Construction					
Wire & Cable					
Motor Vehicles					
Textiles					
Other					

SAMPLE TABLE

ASIA/PACIFIC

China: Markets

Demand for flame retardants in China is forecast to gro percent ... ric tons in 2016. While al markets ... na are expected to see ve gains, t ... projected to increase at th Althoug ... struction will slow from digit gr ... d, advances in building c will fos ... etardant market. Additio growth i ... and polystyrene insulation in China and stricter (and more widely enforced) fire codes in Chinese buildings will also boost flame retardant demand. In particular, the Provisional Fire Regulations for External Insulation and Decoration of Civil Buildings, which was enacted after a series of deadly fires, mandates new fire retardant requirements for insulation materials.

SAMPLE TEXT

Demand in electrical and electronics applications -- the largest market in China in 2011 -- will also record strong growth. One reason for this will be the growth of printed circuit board manufacturing in China, a key application for flame retardants in electronics. China is by far the world's leading producer of printed circuit boards, and the industry is expected to continue to grow. Additionally, because much of the growth in electronics production in China is driven by export markets, production of such products must meet the flammability standards of the country of import. Since most electronics exports are destined for the US, Western Europe, and Japan, where flammability regulations are the strictest, the use of flame retardants in their manufacture is mandatory.

Other important markets include the wire and cable and vehicle industries. China is, by far, the world's largest produ lated wire and cable, and although flammability standards fo cable are not as stringent in China as in the developed world still generates a great deal of demand for flame retardant add

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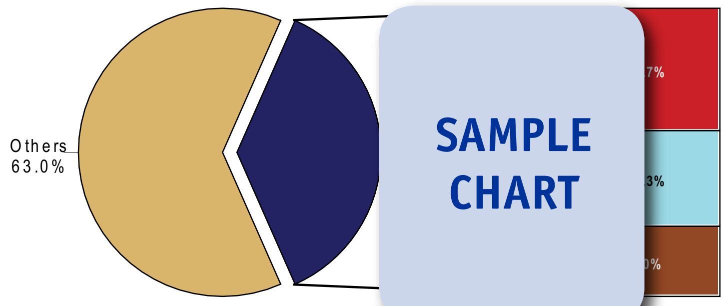
CHART VIII-1

WORLD FLAME RETARDANT MARKET SHARE BY COMPANY ($5.0 billion, 2011)



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Sample Profile, Table & Forecast

TABLE VI-4

CHINA: FLAME RETARDANT DEMAND BY PRODUCT
(thousand metric tons)

Item	2001	2006	2011	2016	2021
Flame Retardant Demand					
Alumina Trihydrate					
Brominated Compounds					
Phosphorus Compounds					
Chlorinated Compounds					
Antimony Compounds					
Boron Compounds					
Other Compounds					
$/kg					
Flame Retardant Demand (mil $)					

SAMPLE TABLE

COMPANY PROFILES

Hsikwangshan Twinkling Star Company Limited
Zhumushan
Lengshuijiang, Hunan 417500
China
86-73-8583-11
http://www.hk

Annual Sales:
Employment:

Key Products:

SAMPLE PROFILE

Hsikwangshan Twinkling Star is involved in the mining and processing of a variety of products based on antimony and other nonferrous metals. The Company is a subsidiary of Hunan Nonferrous Metals Holding Group Company Limited (China), itself an affiliate of China Minmetals Nonferrous Metals Company Limited.

The Company competes in the world flame retardant market via the manufacture of standard and dust-free antimony trioxide (ATO) sold under the TWINKLING STAR brand name. Among other applications, TWINKLING STAR ATO is used as a flame retardant in the formulation of plastics, including polyethylene and nylon.

Hsikwangshan Twinkling Star's principal operations are carried out in Hunan, China and include two mines, four smelters, one technology center, and one inspection and measuring site. The Company reports that it has an annual production capacity of 40,000 metric tons of antimony products. The Company sells ATO and other products to customers in more than 50 countries. In addition to its own operations, Hsikwangshan Twinkling Star and Suzuhiro Chemical Company

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"In 2011, brominated flame retardants surpassed chlorinated products to become the highest-volume flame retardants in China. Brominated products will continue to see strong gains in demand, rising at an above average pace through 2016. Gains will be fueled by strong advances in the output of electrical and electronic products, for both domestic and export markets. While the use of many brominated products in North America and Western Europe is slowly being phased out, there are fewer restrictions on these flame retardants in China."
--Section VI, pg. 173

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Other Studies

World Aluminum

World demand for aluminum (primary and secondary/recycled) is projected to expand 5.8 percent per year through 2017 to 82.5 million metric tons. China will remain the largest and fastest growing market. Construction will remain the largest end use while the motor vehicle market grows the fastest. This study analyzes the 62 million metric ton world aluminum industry, with forecasts for 2017 and 2022 by market, world region, and for 20 countries. The study also evaluates company market share and profiles industry players.

#3070 .... October 2013 .... $6100

Specialty Plastic Additives

US demand for specialty plastic additives is forecast to rise 4.5 percent annually to 4.0 billion pounds in 2017, driven by a rebound in the key construction market. Processing aids and property modifiers are expected to be the fastest growing types, while plasticizers will remain the largest segment. PVC will remain the dominant resin and will grow the fastest. This study analyzes the 3.2 billion pound US plastic additives industry, with forecasts for 2017 and 2022 by type and resin. The study also evaluates company market share and profiles major producers.

#3016 .... April 2013 .... $4900

Flame Retardants

US flame retardant demand will rise 6.0 percent yearly to 1.1 billion pounds in 2016. The shift toward lower cost non-halogenated types will be offset by their higher loading levels. Boron compounds will grow the fastest based on rapid gains in cellulosic insulation for new home building. Construction products will be the fastest growing market. This study analyzes the 816 million pound US flame retardant industry, with forecasts for 2016 and 2021 by material, market and product. The study also evaluates company market share and profiles industry players.

#2926 .... September 2012................ $4900

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 Fluorochemicals

Global demand for fluorine-containing chemicals is forecast to rise 3.9 percent per year to 3.5 million metric tons in 2016. Gains will be fueled by increasing production of refrigeration and cooling equipment worldwide, as well as by an acceleration in primary aluminum output. Fluoropolymers will be the fastest growing products. This study analyzes the 2.9 million metric ton world fluorochemical industry, with forecasts for 2016 and 2021 by product, market, world region and for 15 countries. The study also evaluates company market shares and profiles industry players.

#2869 .... April 2012 .... $6100

About The Freedonia Group

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