INDUSTRY MARKET RESEARCH FOR BUSINESS LEADERS, STRATEGISTS, DECISION MAKERS

Activated Carbon

US Industry Study with Forecasts for **2017 & 2022**

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TYPES

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INDUSTRY STRUCTURE

Activated Carbon

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Implementation of the US Environmental Protection Agency's new mercury removal standards will be the single most important factor impacting activated carbon demand through 2017.

US demand to rise 11+% annually through 2017

US demand for activated carbon, including virgin and reactivated products sold by activated carbon suppliers, is expected to advance over 11 percent per year to almost 1.3 billion pounds in 2017, with market value reaching nearly $1.35 billion. Implementation of the EPA's new mercury removal standards will be the single most important factor impacting activated carbon demand through 2017.

Powdered activated carbon to expand market share

Mercury-emitting industrial facilities such as coal-fired power plants, cement kilns, solid waste incinerators, and other plants with large industrial boilers will predominantly turn to activated carbon injection (ACI) systems to meet EPA requirements. With an ACI system in a large industrial facility consuming up to two million pounds of powdered activated carbon annually, the phase-in of these new rules is expected to have a powerful impact on activated carbon demand, and powdered products will expand their market share to 70 percent of the US total in 2017. As powdered activated carbon is generally not reactivated, sales of powdered activated carbon are expected to remain high even beyond the phase-in deadline for the mercury removal standards.

Compliance with EPA regulations will also boost activated carbon demand in water treatment applications. Demand will increase by over 50 million pounds through 2017 as the EPA's Stage 2 Disinfectants and Disinfection Byproducts (DBP) Rule goes into full effect. While some compliance with the DBP Rule had been achieved by 2012, the final phase-in of the rules will continue to promote growth. The majority of activated carbon used to address DBPs will be granular activated carbon, making water treatment applications the best prospect for suppliers of granular products, both virgin and reactivated.

US Activated Carbon Demand, 2017
(1.3 billion pounds)

Smaller applications to boost value gains

Among the smaller uses for activated carbon, motor vehicle applications, including emissions canisters and cabin air filters, will benefit from rebounding US motor vehicle production. Increased pharmaceutical output will promote demand for activated carbon in pharmaceutical and medical applications, such as purity control in pharmaceutical manufacturing. Mining applications will also see gains, as increased processing will be necessary to maximize mine output. An improving economy will promote demand for activated carbon in chemical purification and other industrial processes. Many of these smaller applications use higher-value specialty products, such as activated carbon fiber or cloth and carbon monoliths, boosting demand in value terms despite accounting for a small share of volume demand.

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Sample Text, Table & Chart

TABLE V-3

ACTIVATED CARBON DEMAND IN WATER TREATMENT BY TYPE & APPLICATION (million pounds)

SAMPLE TABLE

Item	2002	2007	2012	2017	2022
Water Use (trillion gallons)					5
lbs activated carbon/mil gallons wate					4
Water Treatment AC Demand					5
By Type:					
Powdered					1
Granular					4
Other					-
By Application:					
Drinking Water					0
Wastewater & Sewage					0
Groundwater & Other					5
% water treatment					2
Liquid Phase Activated Carbon Deman					0

GAS PHASE APPLICATIONS

Industrial Air Purification

In 2012, industrial air purification uses accounted for 77 of activated carbon used in gas phase applications, and 34 pe total US activated carbon demand. This represents significar from the 2002-2007 period, when industrial air purification a represented less than half of total gas phase activated carbon Through 2017, the number of activated carbon injection (AC for mercury control in the US will increase, supported by the the EPA's mercury emissions standards. Demand for activate in industrial air puri ected to advan percent per year to .

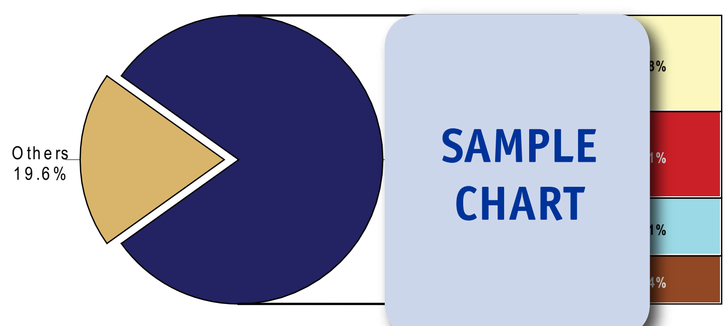
SAMPLE TEXT

The industrial des the use o carbon for mercury gy; for removing other pollutants such as r de from industrial flue gas streams; in indu and air conditioning (HVAC) equipment; and in a number of other smaller-volume industrial air filtration applications such as specialized air purifiers (e.g., gas phase radon filters). Regulations monitoring outdoor and indoor air quality overseen by government agencies such as the US Environmental Protection Agency and the Occupational Safety and Health Administration (OSHA) have a strong influence on activated carbon demand in this market. As the use of industrial air purification equipment is also directly tied to the number and type of manufacturing facilities in the US, the overall state of the economy and the health of the country's manufacturing sector are also key indicators of demand.

Powdered activated carbon is currently the largest prod industrial air purification applications, as it is the preferred p for use in ACI systems and other equipment used for mercur Before the emergence of the mercury control segment of the granular activated carbon was the largest product type used i

CHART VIII-1

US ACTIVATED CARBON MARKET SHARE BY COMPANY ($746 million, 2012)



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Activated Carbon

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Sample Profile, Table & Forecast

TABLE IV-1

ACTIVATED CARBON DEMAND BY TYPE & APPLICATION (million dollars)

Item	2002	2007	2012	2017	2022
Gross Domestic Product (bil 2005$)					
lbs activated carbon/mil $ GDP					
Activated Carbon Demand (mil pounds)					
$/lb					
Activated Carbon Demand					
By Type:					
Granular					
Powdered					
Other					
By Application:					
Liquid Phase					
Gas Phase					

SAMPLE TABLE

COMPANY PROFILES

Carbochem Incorporated
326 West Lancaster Avenue
Ardmore, PA 19003
610-645-9200
http://www.ca

Annual Sales:
Employment:

Key Products: ... ivated carbon
based on bitur ... aw materials

SAMPLE PROFILE

Carbochem is a manufacturer of activated carbons for water treatment, food and beverage, chemical processing, pollution control, air purification, pigments, catalysts, pharmaceuticals, gas and oil refineries, and other applications. The privately held company also produces and supplies various inorganic chemicals.

The Company is involved in the US activated carbon industry through the manufacture of activated carbon based on bituminous coal, coconut shells, and wood raw materials. These products, which are sold under the CARBOCHEM brand name, include powdered, granular, and pelletized types that are available with various pore sizes and high surface areas. CARBOCHEM activated carbons are engineered for use in water treatment, chemical processing, food and beverage, pollution control, air purification, decolorizing, solvent recovery, and other applications. Representative products include CARBOCHEM GS-75 activated carbon for solvent recovery end uses, CARBOCHEM CA-50 and CARBOCHEM DC-40 activated carbons for decolorizing applications, and CARBOCHEM LQ-830 and CARBOCHEM LQ-1240 activated carbons for use in water treatment processes.

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"Although activated carbon demand in both Midwestern subregions is impacted by the same large-scale trends (growing mercury removal and water treatment applications, improving economic conditions), the West North Central is a smaller market for activated carbon due to its lower population, GDP, and manufacturing industries."
--Section VII, pg. 215

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Other Studies

Consumer Water & Air Treatment Systems

This study analyzes the US consumer market for water purification and air cleaning systems. It presents historical demand data (2002, 2007, 2012) and forecasts to 2017 and 2022 by technology (e.g., conventional filtration, reverse osmosis, distillation, electrostatic, ionization) and type (point-of-entry and point-of-use water purification, whole-house and portable air cleaning) and region. The study also covers demand for replacement filters and membranes, considers market environment factors, evaluates company market share and profiles industry players.

#3032 .... May 2013 .... $5300

World Aquaculture: Feed, Equipment & Chemicals

After several decades of rapid expansion, world demand for aquaculture supplies and equipment is expected to grow 7.4 percent per year to $63.6 billion in 2017 at the farm gate level. The Asia/Pacific region will remain the dominant market, with the key China segment outpaced by other Asian countries. This study analyzes the $44.6 billion world aquaculture supplies and equipment industry, with forecasts for 2017 and 2022 by fish type, product, market, world region and for 17 countries. The study also evaluates company market share and profiles industry participants.

#2999 .... March 2013................... $6100

World Catalysts

World demand for catalysts will rise 5.8 percent per year to $19.5 billion in 2016. Rapid growth will occur in both Asia and the Middle East. Brazil will lead strong growth in Central and South America. Polymerization catalysts will experience the fastest growth, driven by healthy expansion of polymer resin production. This study analyzes the $14.7 billion world catalyst industry, with forecasts for 2016 and 2021 by material, type, market, world region and for 24 countries. The study also evaluates company market share and profiles industry players.

#2989 .... February 2013................. $6400

World Activated Carbon

World demand for activated carbon will rise 10.3 percent annually through 2016 to 1.9 million metric tons. Gains will be driven mainly by more government controls on power plant and factory emissions in the US and China. India will surpass Germany to become the fourth largest market, behind Japan. This study analyzes the 1.2 million metric ton global activated carbon industry, with forecasts for 2016 and 2021 by type, application, market, world region and for 17 countries. The study also evaluates company market share and profiles industry participants.

#2878 ....April 2012 .... $6200

World Filters

Global demand for filters is projected to increase 7.6 percent annually to $65.9 billion in 2015. China, India, Indonesia and other countries with large, developing industrial bases and nascent regulatory schemes will see the fastest growth. Manufacturing will be the fastest growing market, while transportation equipment remains the largest. This study analyzes the $45.6 billion world filter industry, with forecasts for 2015 and 2020 by product, market, world region and for 23 countries. The study also evaluates company market shares and profiles industry players.

#2856 .... March 2012................... $6300

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