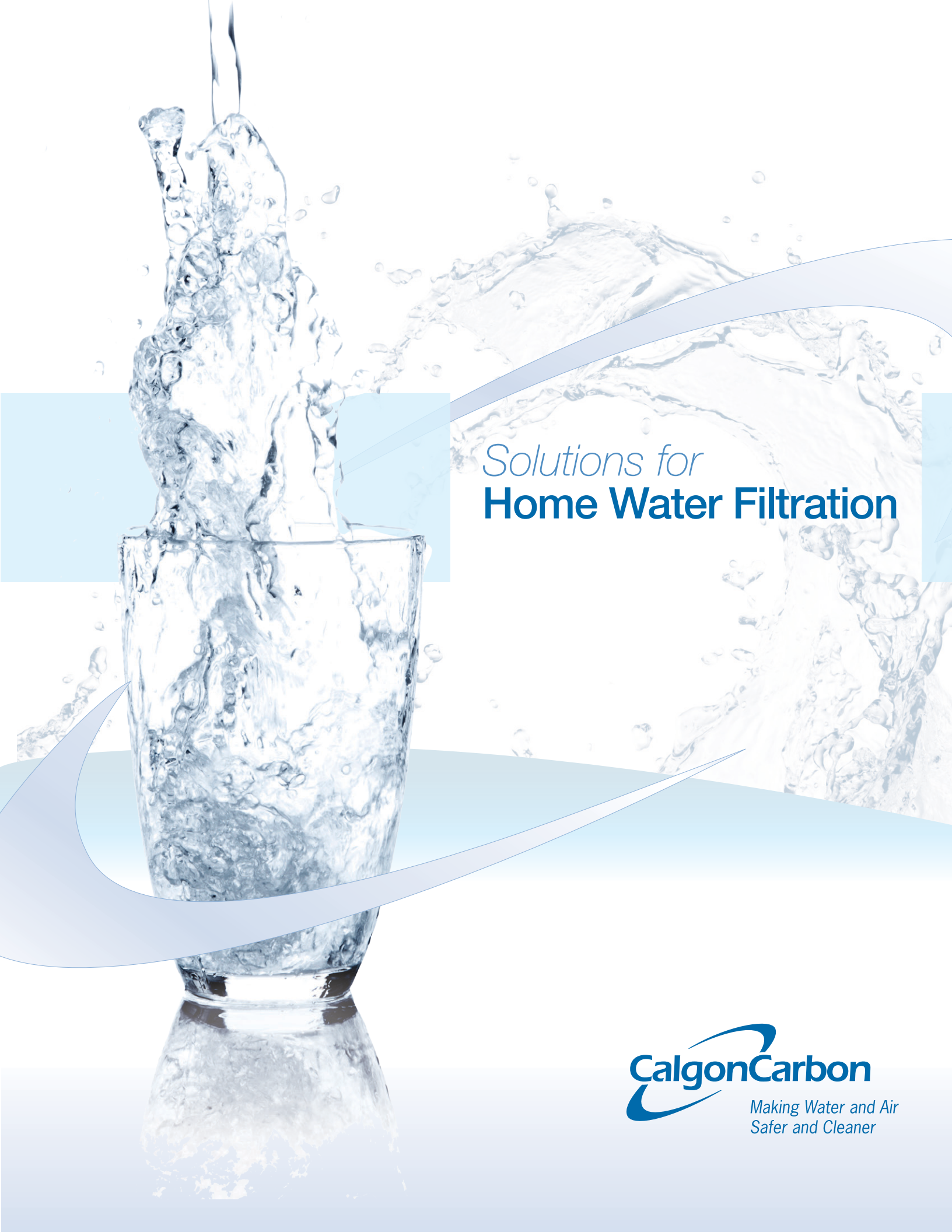


Solutions for

Home Water Filtration

CalgonCarbon

Making Water and Air Safer and Cleaner

The Best Carbon for Every Job

Use the best product for the job. Nowhere is that advice more applicable than in home water filters. With variations in influent water flows and contaminant concentrations, more stringent treatment objectives, and new filter configurations, the performance of the filter system must be carefully evaluated. When activated carbon is used in a home water filter, characteristics such as raw materials, mesh sizes, and catalytic properties must be considered when selecting the best carbon for a given application.

How Activated Carbon Works

Activated carbon is similar to crude graphite, the material used in pencils. Activated carbon, diamonds and graphite are all forms of carbon and contain almost no nitrogen, hydrogen, halogens, sulfur or oxygen. From a chemist's perspective, activated carbon is an imperfect form of graphite. This imperfect structure results in a high degree of porosity and a wide range of pore sizes, from visible cracks and crevices to gaps and voids of molecular dimensions. Porosity is what distinguishes activated carbon and makes it "activated." Intermolecular attractions in the smallest pores result in adsorption forces.

Carbon adsorption forces are analogous to gravity, but operate on a molecular, not astronomical, scale. They cause a reaction similar to precipitation, where adsorbates are removed from solution. The strongest adsorption forces occur when the distance between the carbon platelets and adsorbate is very close, or in micropores. This kind of physical adsorption removes taste and odor causing organic compounds, volatile organic compounds (VOCs), trihalomethanes (THMs) and other halocarbons from drinking water. Chemical reactions and chemical bonding can also occur between the adsorbing molecules and the carbon surface or its inorganic ash impurities. This is referred to as chemical adsorption or chemisorption. However, physical adsorption is what activated carbon does best.

Activated carbon can be produced from carbonaceous material such as bituminous coal, coconut shells and wood. In home water filter application, coal- or coconut-based activated carbons are used.

Calgon Carbon offers a variety of products including both coal- and coconut-based activated carbons from granular to fine mesh to meet a wide range of application needs.

H_2O Water Treatment in Home Water Filter

Taste, Odor and Chlorine Removal: Tap water comes from a municipal drinking water plant through a long pipe line. When the water reaches the faucet at home, it may contain residual tastes, odors, disinfection byproducts, and chlorine in free and combined forms. Sometimes molecules with carbon-sulfur bonds or aromatic rings in the water can smell and taste bad. Many of these compounds can be effectively removed by an activated carbon product.

Calgon Carbon has a broad range of NSF* approved products made from coal and coconut raw materials specifically designed for home water filters. When it comes to understanding how to choose and apply activated carbon products to benefit customers, Calgon Carbon has been the industry leader for decades.

**NSF International – National Sanitation Foundation, a not-for-profit organization that provides standards development, product certification, auditing, education and risk management for public health and the environment. www.nsf.org*

NSF Typical NSF Product and Applications

Carbon Type	Product	Mesh Sizes	NSF Certification	Fine Mesh Available	Acid Washed	Water Washed	Taste & Odor Removal	Dechlorination	VOC/Trace Removal	H_2S	Chloramine Removal	Iron Removal
Coal Based	CARBSORB® Series	8x30, 12x40, 20x50	Std. 61	•			•	•				
	CPG®	12x40, 20x50	Std. 61		•		•	•	•			
	FILTRASORB® Series	8x30, 12x40	Std. 61				•	•	•			
	TOG®	20x50, 50x200, 80x325	Std. 61	•			•	•				
	TOG®–NDS	20x50, 50x200, 80x325	Std. 42	•	•		•	•				
Coconut Based	3005	50x200	Std. 42	•		•	•	•	•			
	3100 Series	80x325, 50x200, 325xfines	Std. 42	•		•	•	•	•			
	3007/4040	12x30, 20x50	Std. 42		•		•	•	•			
	OLC	12x30, 12x40, 80x325	Std. 61	•	•		•	•	•			
	OLC WW	20x50	Std. 42			•	•	•	•			
	OLC Plus	12x30, 20x50	Std. 42			•			•			
Catalytic	CENTAUR®	12x40, 20x50, 80x325	Std. 61	•						•	•	•
	CENTAUR®–NDS	12x40, 20x50, 80x325	Std. 42	•	•					•	•	•
	CENTAUR® C (Coconut Based)	8x30, 12x40, 20x50	Std. 61				•	•	•	•	•	

The activated carbon products shown in this brochure represent Calgon Carbon's standard line of carbons for point of entry and point of use applications. Calgon Carbon also has products available to meet California Proposition 65, Kosher, or Halal requirements. To select the best product for your application, contact your Calgon Carbon Technical Sales Representative.

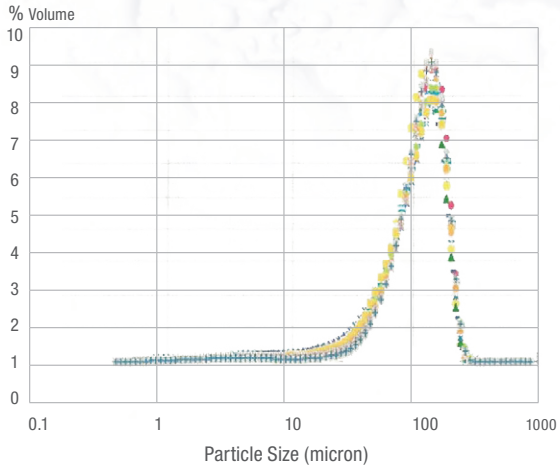
Fine Mesh Production Capabilities

With a variety of grinding and screening equipment located at facilities worldwide, Calgon Carbon can provide a wide range of fine mesh carbons for point of use (POU) filter applications. Calgon Carbon's manufacturing capabilities provide its customers with:

- **More uniform and precise control over particle size distribution.** Calgon Carbon can produce carbon products with precision for requirements as small as 80x325 mesh or even smaller than 325 mesh, meeting the most stringent requirements for carbon block manufacturing. Calgon Carbon can consistently produce your unique particle size requirements without the presence of unwanted large or small particles.
- **Faster carbon production and delivery.** With different sizes and types of grinding equipment, Calgon Carbon can respond to your needs for both test quantities and large volumes of specialized carbons.

- **Greater block production efficiency at your facility.** Calgon Carbon's grinding capabilities enable us to provide you with the product consistency you require in block manufacturing, giving you faster run times and fewer wasted blocks.
- **Improved mechanical filtration.** Calgon Carbon's ability to control particle size distribution permits more consistent filter manufacturing characteristics and allows better control of filtration characteristics critical for oocyst and bacteria-related claims.

Typical Particle Size Distribution Chart
From a sampling of 40,000 pounds of production material



Catalytic Carbon and Innovative Patented Products

CENTAUR® is a liquid phase virgin activated carbon that has been manufactured by Calgon Carbon using a patented process to enhance catalytic functionality. It is not impregnated with metals or alkali; therefore, there are no safety concerns regarding exotherms or toxicity. CENTAUR® products are effective for drinking water treatment and meet NSF requirements. With its unique catalytic functionality, CENTAUR® activated carbon removes chloramine, sulfur, and iron from drinking water.

Other High Activity Coconut Based and Bacteriostatic Based Products

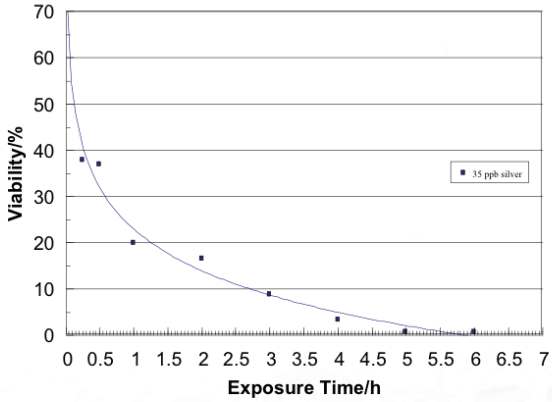
Typical Product Application Table

Carbon Type	Product	Mesh Sizes	Bacteria Control	Acid Washed	Water Washed	Taste & Odor Removal	Dechlorination	VOC/Trace Removal	H_2S	Chloramine Removal	Iron Removal
Coconut Based	207 C	8x30, 12x30, 12x40, 18x40				•	•	•			
	208 C	8x30, 12x30, 12x40, 18x40				•	•	•			
	607 C AW	8x30, 12x30, 12x40, 18x40		•		•	•	•			
	608 C AW	8x30, 12x30, 12x40, 18x40		•		•	•	•			
Silver Impregnated	AGC Series	12X30, 18x40, 20x40	•			•	•	•			
	989 (0.026% Ag)	12x30, 20x50	•			•	•	•			
	1184 (0.5% Ag)	12x30, 20x50	•			•	•	•			
	CE (1.05% Ag)	12x30, 20x50	•			•	•	•			

Silver Impregnated Product

AGC products are high quality silver impregnated activated carbons for use in specialized water treatment applications, which require proven bacteriostatic properties. These are manufactured from specific high purity grades of coconut shells and impregnated with silver using a unique process. This method produces a high quality activated carbon that inhibits the growth of bacteria on the carbon surface. The levels of impregnated silver in AGC have been optimized to provide maximum bacteriostatic protection. AGC is available with 0.05, 0.1, 0.2, and 0.4 % w/w silver loadings. Other silver contents are available on request.

Viability of E. coli as a function of Exposure Time to Silver Ions



Ag

AGC is ideal for use in point of use (POU), domestic jug and tap filters, where the build-up of bacteria must be prevented. AGC will experience low controlled levels of silver leach into the water because of the unique manufacturing process that Calgon Carbon utilizes, which chemically fixes the silver to the carbon. Therefore, silver leach levels are far lower than U.S. EPA Drinking Water Standards but sufficient to provide maximum bacteriostatic action with extended product life cycle.

Features

AGC carbons have several properties that explain their performance in a wide range of applications:

- Maximum bacteriostatic action with minimum silver leach levels for extended operational life expectancy
- Efficient dechlorination properties
- Selected pore structure for maximum adsorption and retentivity
- Superior hardness characteristics
- AGC (named Aquacarb in the U.S. and Europe) has several grades that are approved by the EPA FIFRA program for products that can be included into devices or filters to remove objectionable taste, colour and odours from municipal tap water (ref EPA 70852 / 58295).

Technical Support

Take advantage of Calgon Carbon's expertise. When you choose Calgon Carbon products, you get more than quality activated carbon products and other leading water treatment media. You get informed application specialists to guide you in selecting the best product. You also get the largest R&D capability in the activated carbon industry. Calgon Carbon's expertise can help you develop your next generation products and meet the latest water purification challenges. For information on Calgon Carbon's fee-based testing and analytical services, please contact your Calgon Carbon Technical Sales Representative.

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About Calgon Carbon Corporation

Calgon Carbon Corporation (NYSE: CCC) is a global leader in services and solutions that make water and air safer and cleaner and purify food, beverage, and industrial process streams. Headquartered in Pittsburgh, Pennsylvania, Calgon Carbon operates advanced production, research and development facilities in North America, Europe and Asia, as well as an expanding network of sales and service centers worldwide. In Europe, Calgon Carbon is known as Chemviron Carbon.

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