



Making Water and Air Safer and Cleaner

Making Water and Air Safer and Cleaner Throughout the World

Protecting our environment is an important task. The quality of our life depends on how clean we keep the air we breathe and the water we drink. Pittsburgh-based Calgon Carbon Corporation (NYSE:CCC) is deeply involved in meeting this challenge. A global manufacturer and supplier of services and solutions for making water and air safer and cleaner, Calgon Carbon is leading the way in helping communities locally and around the world address their environmental needs.



Connecting customers with purification, performance, and compliance

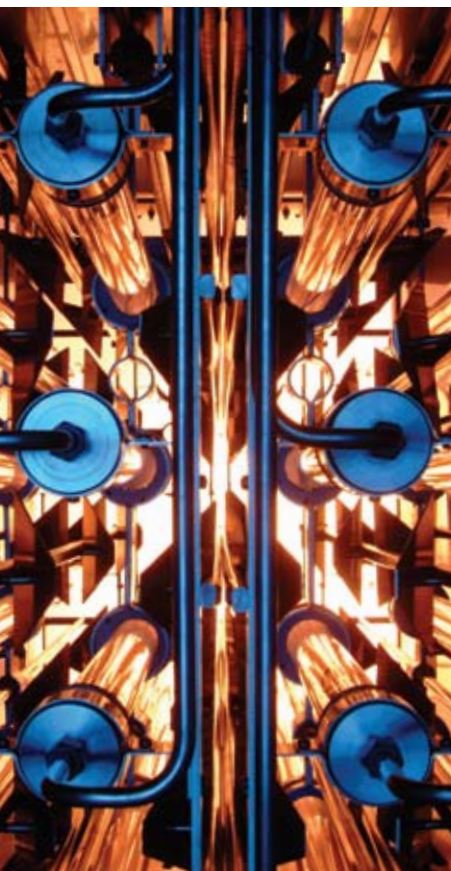
Making drinking water safe and pure

- Granular activated carbon for treatment of taste and odor, disinfection byproducts, emerging contaminants, and other dissolved organics in municipal drinking water
- FILTRASORB® granular activated carbon - the industry standard for drinking water treatment
- NSF-certified, custom potable reactivation services for environmentally responsible and economical use of granular activated carbon
- Superior quality powdered activated carbons for taste and odor removal
- Granular, powdered, and fine mesh activated carbons for home water filtration
- SENTINEL® UV disinfection systems for the treatment of *Cryptosporidium*, *Giardia* and other harmful pathogens
- SENTINEL® UV-AOP systems for combined disinfection and taste and odor removal
- PEROXCARB® granular activated carbon for hydrogen peroxide quenching in conjunction with UV-AOP systems
- Ion exchange technologies for removal of perchlorates and various toxic metals

Treating wastewater so it is worry free

- Virgin and reactivated carbons for wastewater treatment
- Thermal reactivation and recycle of activated carbon for cost-effective and environmentally responsible treatment
- Engineered adsorption systems for sale, lease, and temporary service
- Emergency response services with equipment, activated carbon, and field support that will respond to clients on a rapid-response basis
- C³ Series™ UV wastewater disinfection systems to prevent the spread of waterborne pathogens to lakes, streams, rivers, and coastal waters
- RAYOX® UV oxidation for removing contaminants in groundwater, wastewater, or process water
- UV technologies for wastewater reuse applications
- Hyde GUARDIAN® filtration/UV technology to control aquatic invasive species in marine ballast water





Keeping air safe and clean

- FLUEPAC® powdered activated carbons developed for the most cost-effective treatment of mercury in flue gas streams
- Granular, pelletized and reactivated carbons for industrial VOC emissions control
- Thermal reactivation and recycle of activated carbon for cost-effective and environmentally responsible treatment
- Complete line of vapor-phase adsorption systems for sale and service
- Specialty impregnated carbons for personal protection in military, industrial, and collective protection applications
- PHOENIX® odor control systems remove hydrogen sulfide odors at wastewater treatment plants and pumping stations
- CENTAUR® catalytic activated carbon for cost-effective treatment of odors from municipal wastewater treatment

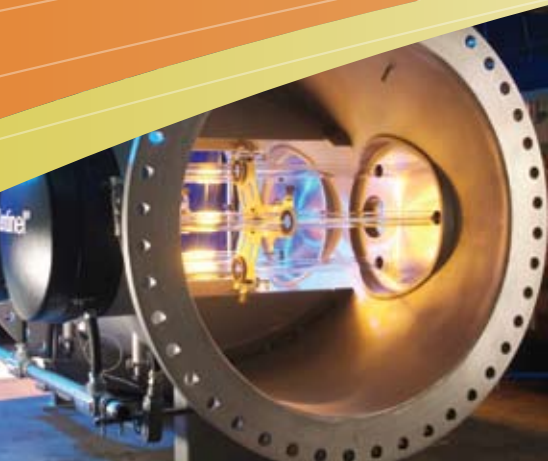
Improving and enhancing production processes

- Granular and powdered activated carbons for removal of color, odor, and other organic contaminants
- Acid-washed and impregnated carbons designed for specialty applications
- Ultraviolet (UV) equipment for process water disinfection and purification
- Continuous ion exchange and chromatography technologies for purifying, separating and recovery of valuable materials
- Applications experience for improving treatment processes
- Pilot equipment for feasibility studies



Diverse Products

Leading-edge Technologies



Calgon Carbon Corporation remains committed to a single goal set more than half a century ago: meeting the toughest purification, separation, and concentration challenges of its customers.

As a leader in the activated carbon industry and with UV disinfection and oxidation technologies, Calgon Carbon offers a diverse range of products, services, and equipment specifically developed to streamline and improve drinking water, wastewater, and production processes.

When it comes to meeting purification challenges, there's no such thing as an off-the-shelf solution. That's why, each year, hundreds of municipalities, government agencies, and food, chemical and drug manufacturers turn to Calgon Carbon to solve their purification problems.

Calgon Carbon's technical experts are available to help customers choose the most cost-effective methods to apply its technology in air, water and process purification, with the ultimate goal of reducing the time and expense associated with maintaining purification systems.



Activated Carbon and Specialty Products

Calgon Carbon supplies more than 100 types of granular, powdered, and pelletized activated carbons made from coal, wood or coconut shell to thousands of clients throughout the world. The carbon products are applied in four general areas:

- Water treatment
- Liquid phase purification
- Vapor phase treatment
- Activated carbon cloth





Activated Carbon Reactivation and Recycle

After an activated carbon's adsorptive capacity has been exhausted, it can be returned to Calgon Carbon for thermal reactivation.

In the reactivation process, spent carbon is subjected to high temperatures that destroy the adsorbed organics and ensure the activated carbon is returned to usable quality. Customers choose reactivation for the most environmentally responsible and economic use of granular activated carbon.

Calgon Carbon's potable reactivation facilities in the U.S. became the first to receive certification from NSF International under NSF/ANSI Standard 61: Drinking Water System Components – Health Effects for custom reactivated carbon for potable water applications. NSF International is an independent, not-for-profit organization committed to protecting and improving public health and the environment.

Calgon Carbon is fully permitted to handle spent carbons containing hazardous and non-hazardous organic compounds, and provides custom and pooled reactivation services at several industrial reactivation facilities throughout the world.



Certified to
NSF/ANSI 61

The company provides reactivation and recycling services ranging from a 55-gallon drum to truckload quantities.

Adsorption Systems and Equipment

Along with providing activated carbons, Calgon Carbon offers a complete line of standardized, pre-engineered, adsorption systems, which can be quickly delivered and easily installed at treatment sites.

Vapor phase adsorption systems are used for applications, such as volatile organic compound (VOC) control, air stripper off-gases, and landfill gas emissions. Liquid-phase equipment systems are used for applications, including process purification, wastewater treatment, groundwater remediation, and potable water treatment.

- Equipment is available on a sale or leased service basis
- Adsorption equipment can be used independently or along with complementary technologies to provide complete purification solutions



Ultraviolet (UV) Disinfection and Oxidation Technologies

Calgon Carbon's UV Technologies Division is known for its leading application of UV disinfection and UV oxidation technologies for drinking water, wastewater, and groundwater treatment, along with water re-use. The company invented a method to cost-effectively utilize UV to inactivate *Cryptosporidium* and other pathogens in surface water, rendering them harmless to humans. This team also introduced one of the first advanced UV oxidation processes to remediate contaminated groundwater.

- SENTINEL® UV Disinfection systems control *Cryptosporidium*, *Giardia* and other pathogens in drinking water
- C³ Series™ UV wastewater disinfection systems use UV energy to disinfect wastewater and prevent the spread of waterborne pathogens to lakes, streams, rivers, and coastal waters
- RAYOX® UV oxidation systems and SENTINEL Advanced Oxidation Processes (AOP) employ the power of hydroxyl radicals to destroy organic compounds in contaminated groundwater, wastewater, and drinking water.

Ballast Water Treatment

Hyde Marine, Inc., a recent addition to Calgon Carbon Corporation, is a global leader in the growing ballast water treatment market.

The Hyde GUARDIAN® system is chemical-free, using filtration and UV disinfection to treat ships' ballast water to prevent the spread of invasive species from port to port.

Type Approval Certificate was issued for the Hyde GUARDIAN® unit in April 2009 by Lloyd's Register on behalf of the UK Maritime and Coastguard Agency, which confirms compliance with Guidelines contained in IMO resolution MEPC.174(58). This unit was also the first Ballast Water Treatment System accepted into the U.S. Coast Guard's Shipboard Technology Evaluation Program.



Ion Exchange Technologies

Calgon Carbon provides continuous ion exchange and chromatography technologies in the ISEP®/CSEP®/RSEP™* lines for purifying, separating, recovering, and synthesizing high-value materials.

The proprietary ISEP continuous ion exchange units are used for the purification and recovery of many products in the food, pharmaceutical, and biotechnology industries. The ISEP, CSEP and RSEP systems are currently used at over 350 installations worldwide in more than 40 applications. These ion exchange systems are located in industrial settings as well as in select environmental applications including perchlorate and nitrate removal from drinking water. These continuous ion exchange technologies offer:

- Cost-effective integration of multiple small resin beds moving countercurrent to process flows
- High product yield, high purity, and maximum concentration recovered
- Lower capital costs, reduced resin replacement, and minimal chemical regeneration and waste disposal



* ISEP - ionic separation; CSEP - chromatographic separator; RSEP - reaction separation.





Services

An important advantage in collaborating with Calgon Carbon is the expertise its employees impart in supplying purification products and adsorption systems. Team up with Calgon Carbon and draw on the resources of dedicated employees providing value-added services.

From the very beginning, Calgon Carbon's experts work to provide complete analytical support, along with feasibility studies and cost evaluations to ensure that the purification system to be designed and installed provides the best value to the facility. Once the system is up and running, Calgon Carbon's service team is committed to delivering the highest level of service. These skilled engineers and troubleshooters have confronted multiple technical challenges and act quickly to deliver answers and provide solutions.

Calgon Carbon offers a variety of treatment services at customer facilities including:

- Emergency response
- Field services for carbon exchange
- Equipment leasing
- Transportation using Calgon Carbon's private fleet
- Reactivation services
- Field testing and pilot systems
- Technical services
- Installation and start-up



Calgon Carbon Corporation

Company Overview

Innovation is the cornerstone of Calgon Carbon Corporation (NYSE:CCC). The company's leading technologies help ensure that tens of millions of people drink clean, safe water and why millions more can breathe clean, odor-free air.

Calgon Carbon provides granular, powdered and pelletized activated carbons, UV disinfection and oxidation systems, ballast water treatment equipment, ion-exchange technologies, liquid and vapor-phase adsorption systems, and comprehensive value-added services. The Company's products help to purify water, foods and pharmaceuticals, separate gas, and remove mercury emissions from coal-powered electrical facilities.

Calgon Carbon's technologies are designed to enhance production efficiencies, minimize waste, and remove pollutants.



Industries we serve:

- Aerospace
- Agriculture
- Automotive
- Catalyst
- Cigarette
- Dry Cleaning
- Electric Utilities
- Electronics
- Environmental Remediation
- Food and Beverage
- Home and Commercial Water Treatment
- HVAC
- Industrial Gas
- Inorganic Chemical
- Medical
- Metals and Mining
- Municipal Drinking Water
- Municipal Waste Water
- Oil and Natural Gas
- Organic Chemical
- Personal Protective Equipment
- Petrochemical
- Pharmaceutical
- Printing and Surface Coating
- Pulp and Paper



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