

## CR2000 AND CR5000 ADSORBERS

### Granular Activated Carbon Adsorption Vessel



#### Adsorber Vessel Specifications

- Carbon steel pressure vessel
- Pressure rating 50 psig at 100°F (based on ASME design)
- Manway on top head for internal access and carbon fill
- Skid support / fork truck channels
- Lifting lugs
- Internal epoxy lining
- Splash plate inlet distributor
- PVC pipe underdrain with PPL water collection nozzles, nozzle count is one per square foot of cross sectional area
- Exterior epoxy paint finish
- Stainless steel carbon discharge piping fitted with a bronze ball valve

Dimensions:	CR2000	CR5000
Height	92"	98 5/8"
Plot Area	51"x45"	72"x64"
Weights:		
Typical weight of GAC	2,000 lbs.*	5,000 lbs.*
Empty	1,500 lbs.	2,200 lbs.
Shipping with Dry GAC	3,500 lbs.*	7,200 lbs.*
Operating	8,300 lbs.	17,200 lbs.
Connections:	3", 150 lbs. FLG.	4", 150 lbs. FLG.

\*Approximate weights. May be less depending on type and density of carbon.

#### General Description

Calgon Carbon's CR2000 and CR5000 are pressure vessels designed to treat water using granular activated carbon (GAC). The vessels arrive filled with granular activated carbon for the removal of organic compounds from a variety of applications including: waste water streams, ground water remediation, pump tests, air stripper polishing, and pump and treat systems. The CR2000 is filled with 2,000 lbs.\* of GAC and can treat up to 100 gpm. The CR5000 is filled with 5,000 lbs.\* of GAC and can treat up to 250 gpm.

#### Features and Benefits

**Flexibility.** The CR vessels treat water downflow through a fixed bed of granular activated carbon, and therefore, can handle varying flows and on-off operating conditions. When multiple vessels and the optional pipe rack are purchased, the vessels can be arranged in parallel to treat higher flows or can be connected in series to optimize carbon usage.

**High Operating Pressures.** The CR vessels are designed to operate at pressures up to 50 psig at 100°F (based on ASME design).

**High Flow Rates.** The CR vessels are designed with large process connections to allow for higher flow rates while maintaining reasonable pressure drops.

**High Performance Underdrain.** The CR vessels have a corrosion resistant underdrain with a nozzle count of one per square foot of bed area for even collection of treated water.

**Granular Activated Carbon.** The CR vessels can be provided with any of Calgon Carbon Corporation's extensive product line of granular activated carbon. A Technical Sales Representative can assist in selecting the most cost effective carbon for your application.

**Easy to Install.** The CR vessels are fitted with supports for ease of off-loading and positioning at the treatment location using either a fork truck or crane. The vessels can also be secured to a foundation for a permanent installation.

**Ready to use.** The CR vessels are delivered pre-loaded with GAC to minimize start-up time and installation costs.

### Equipment and Systems

Visit our website at [www.calgoncarbon.com](http://www.calgoncarbon.com), or call 800-422-7266 to learn more about our complete range of products and services, and obtain local contact information.

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### Caution!

1. A pressure relief device is not supplied with this vessel. It is recommended that the user provide a suitable relief device in the system piping connected directly to the vessel without restriction or valves. The pressure relief device must not be plugged or restricted in any manner.
2. Wet activated carbon removes oxygen from air. In closed or partially closed containers and vessels, oxygen depletion may reach hazardous levels. If workers are to enter a vessel containing activated carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed including all applicable federal and state requirements.

### Wetted Parts

- Epoxy lining
- Stainless steel GAC discharge pipe
- PVC distributor and collector pipe
- PPL water collection nozzles
- Bronze, chrome plated steel, and TFE in the carbon discharge valve

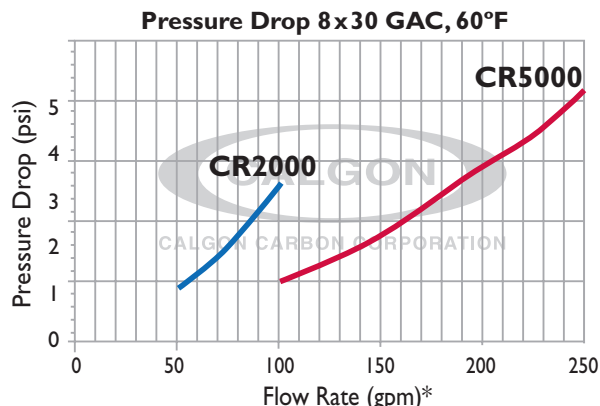
### Available Options

- PVC Pipe Manifold for series or parallel operation (Refer to Bulletin Number ES-0007-1003)

### Site Services

Calgon Carbon Corporation can provide a full range of services including:

- equipment selection
- assistance with vessel carbon installation
- start-up assistance
- supply of virgin and reactivated carbon
- carbon exchange
- carbon disposal and reactivation



\*For pressure drop using GAC sized at 12 x 40, multiply pressure drop by 1.6

**Warranty:** Calgon Carbon Corporation (Seller) warrants that the CR vessels shall be free from defects in materials and workmanship for a period of one hundred eighty (180) days from the date of shipment or thirty (30) days from the date of startup (defined as the first day water flows into the vessel) whichever occurs first. This warranty does not apply to problems associated with normal wear and tear, improper maintenance, negligence, misuse, or the failure to operate in strict accordance with the operating and maintenance plan provided. All other warranties, either express or implied, are hereby disclaimed including but not limited to the warranty of merchantability and fitness for a particular purpose.

Seller warrants that any/all activated carbon provided hereunder shall conform to the specifications for such grade as published from time to time by the Seller. There are no warranties made with regard to the activated carbon or equipment to be sold hereunder other than those contained in this paragraph or stated elsewhere in the proposal. All other warranties, either express or implied, are hereby disclaimed including, but not limited to, the warranty of merchantability and fitness for a particular purpose.

This warranty is limited to the replacement and/or repair by the Seller of any part, parts or material, which in the Seller's determination are defective. This warranty does not cover any charges by the Buyer for replacement of parts, adjustments or repairs, or any other work unless such charges shall be assumed or authorized in advance in writing by the Seller.

**Limitation of Liability:** Seller's liability and the Purchaser's exclusive remedy for any cause of action arising out of purchase and use of the CR vessels, including but not limited to breach of warranty, negligence and/or indemnification is expressly limited to a maximum of the purchase price of the CR vessel as sold. All claims of whatsoever nature shall be deemed waived unless made in writing within forty-five (45) days of the occurrence giving rise to the claim. In no event shall the Seller for any reason or pursuant to any provision of these warranties be liable for incidental or consequential damages, or damages in excess of the purchase price of the CR vessel, nor shall the Seller be liable for loss of profits or fines imposed by Governmental agencies.

Visit our website at [www.calgoncarbon.com](http://www.calgoncarbon.com)



CALGON CARBON CORPORATION

Calgon Carbon Corporation  
P.O. Box 717  
Pittsburgh, PA USA 15230-0717  
1-800-422-7266  
Tel: 412-787-6700  
Fax: 412-787-6713

**Chemviron  
Carbon**

European Operations of Calgon  
Carbon Corporation  
Zoning Industriel C de Feluy  
B-7181 Feluy, Belgium  
Tel: + 32 (0) 64 51 18 11  
Fax: + 32 (0) 64 54 15 91

Your local office



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