

Mobile Adsorption Service

Mobile Adsorber Uses And Benefits

Calgon Carbon offers a comprehensive Mobile Adsorption Service for the purification and treatment of liquid streams. Designed for optimum convenience to the user, the Service is an ideal cost-effective method to employ for the removal of undesirable organic chemical compounds from off-spec liquids, lagoon drainage, wastewater treatment (point source or end-of-pipe), and chemical spills. It can also be used to pretreat water used in process applications or as an interim treatment step during design and installation of a permanent system to improve product quality.

The Mobile Adsorption Service includes the activated carbon fill (either virgin or reactivated carbon as required by the application), adsorption equipment, carbon transfer, transportation, and off-site reactivation - all for a fixed fee. Calgon Carbon maintains an inventory of trailer-mounted mobile adsorption equipment which can be dispatched, if necessary, on 24-hours notice. Moments after arrival on site, with just two simple hose connections, the pre-piped Mobile Adsorber can be fully operational.

The pre-piped mobile systems contain 14,000 pounds of granular activated carbon and are capable of treating up to 225 gpm of a liquid stream which equates to 15 minutes of carbon contact time. The system is self-supporting, and only requires a flat supportive surface (preferably paved) on which it can be set.

Convenience is another important benefit associated with the Mobile Adsorption Service. After the treatment project is completed (or after the carbon's adsorptive capacity is exhausted) our trailers pick up the entire system using the unit as a shipping container and return it to our reactivation facility.

If additional on-site treatment is required, the spent system can be quickly replaced with another ready-to-operate Mobile Adsorber. A second option for continued treatment is the on-site transfer of spent carbon into a Calgon Carbon trailer. The adsorber is then loaded with either virgin or reactivated carbon.

Materials of Construction

Vessel Lining

- Vinyl ester coating (nominal 40 mil) suitable for potable water and most wastewater applications.

Piping and Valves

- Liquid piping is carbon steel. Valves are cast iron butterfly valves with aluminum bronze discs. Carbon discharge pipe is polypropylene-lined steel with stainless steel ball valves.

Underdrain Collection System

- Polypropylene slotted nozzles

External Coating

- Epoxy mastic

Specifications

Adsorber Diameter	7 ft. 10 in.
Base Diameter	8 ft.
Unit Height (operating)	18 ft. 8 in.
Clearance Height	23 ft.
ASME Code	50 or 65 psig @ 150°F
Hose Connections	4" Kamlock (process) 1/2" MNPT (sample)
Carbon Volume	452 cu. ft. (nominal 14,000 lbs. GAC)
Flow Rate	0-225 gpm
Weight	Transport: 30,000 lbs. Operating: 47,800 lbs.

Mobile Adsorber Features

Each Mobile Adsorber is an ASME rated vessel (50 and 65 psig units are available), constructed of carbon steel with a vinyl ester lining. They are designed to contain up to 14,000 pounds of a select grade of granular activated carbon.

When full of carbon and water, the adsorber weighs 47,800 pounds and is designed for soil bearing of 1,500 pounds per sq.ft. Its height is 18 ft. 8 in., and its base occupies an 8 ft. diameter circle. For erection purposes, the adsorber requires a 23 ft. clearance.

Influent and effluent connections are easily made with 4 in. kamlock hose connections. Untreated liquid enters the top of the vessel, flows down through the carbon bed, is collected by an underdrain, and then exists through the bottom of the vessel. Sample taps are provided on the influent and effluent connections. A rupture disc is included to assure that the rated operating pressure is not exceeded.



Spent Carbon Acceptance

Prior to return of either the Mobile Adsorber or the spent carbon to Calgon Carbon, the spent carbon must undergo acceptance testing. The Mobile Adsorber is provided with a carbon acceptance canister and instructions for carbon acceptance testing.

Safety Message

Wet activated carbon preferentially 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 carbon, appropriate sampling and work procedures for potentially low oxygen spaces should be followed, including all applicable federal and state requirements. Please refer to the MSDS for all up to date product safety information

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www.calgoncarbon.com



Corporate Headquarters

Calgon Carbon Corporation
500 Calgon Carbon Drive
Pittsburgh, PA USA 15205
800.422.7266
412.787.6700
412.787.6713 Fax

www.calgoncarbon.com

European Operations

Chemviron Carbon Corporation
Zoning Industriel C de Feluy
B-7181 Feluy, Belgium
+ 32 (0) 64 51 18 11
+ 32 (0) 64 54 15 91 Fax

Asia Operations

Calgon Carbon Asia Pte Ltd.
9 Temasek Boulevard
#26-02 Suntec Tower Two
Singapore 038989
+65 6221 3500
+65 6221 3554 Fax

Your local representative