

DISPOSORB®

DISPOSORB® has been developed by Calgon Carbon Corporation for cleanup of off-spec product batches, accidental spills, contaminated rainwater in tank-farm containment dikes, and many other uses. It is the first disposable, compact, granular activated carbon adsorber providing all the essentials of a full-scale system. Available in two sizes, 350 gallon capacity and 55 gallon capacity.



Applications

Hazardous/Toxic Dissolved Organic Removal

- Process Stream Purification
- In-Plant Spill Treatment
- Laboratory Bench Drains
- Storage Tank Washdown
- Monitoring Well Discharges
- Dechlorination
- Dechlorination of Liquids
- Small Wastewater Streams

Evaluation of Adsorption for Liquid Processes

- Feasibility Studies
- Laboratory Investigation
- Pilot Plant Studies



Specifications

	55 gal DISPOSORB®	350 gal DISPOSORB®
GAC per unit (lbs.) approx.	165	1,000
Dimensions, approx.	23" D x 36" H	44" D x 67" H
Connections	3/4" NPT inlet 1" NPT outlet	1 1/2" male NPT inlet 1 1/2" male NPT outlet
Container	HMWPE	1/4" polyethylene

Equipment and Systems

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

DISPOSORB®

How DISPOSORB® Works

DISPOSORB® contains granular activated carbon which removes dissolved pollutants from water by a process called adsorption. As water passes through the porous granules of activated carbon, molecules of the organic pollutants are attracted to the surface of the pores and are held there by weak physical forces. The phenomenon is somewhat similar to iron filings being held by a magnet.

The ability of granular activated carbon to remove large quantities of organic impurities is a function of its highly developed internal pore structure. This unique pore structure is created during the manufacturing process which involves the crushing and thermal "activation" of select grades of bituminous coal under carefully controlled conditions. As a result of this processing, an extensive network of pores is created inside each carbon granule providing an enormous internal surface area.

Granular activated carbon's great porosity is responsible for its high capacity for trapping and holding organic molecules. For example, just one pound of carbon granules has an effective total (external and internal) surface area equal to that of a 100-acre farm.

In general, the adsorption capacity for non-polar organic compounds increases with concentration, molecular weight, and decreased solubility. Compounds which adsorb well are aromatic and unsaturated aliphatic compounds and halogenated solvents.

Low-molecular-weight (less than 50) and/or high-polar compounds, highly soluble in water - such as formaldehyde, alcohols, glycols - will not be readily adsorbed. When the concentration of organic wastes in the effluent equals the concentration in the influent, the DISPOSORB® unit is saturated with the maximum organic loading possible.

The Inside Story

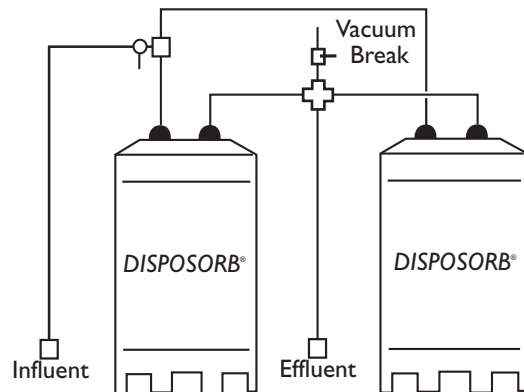
The DISPOSORB® units can be ordered with any of Calgon Carbon Corporation's extensive product line of granular activated carbon.* A Technical Service Representative can assist in selecting the most cost effective carbon for your application.

The internals of the DISPOSORB® are a combination of PVC and stainless steel. In applications involving contaminants which attack these materials, alternative internal construction materials can be ordered.

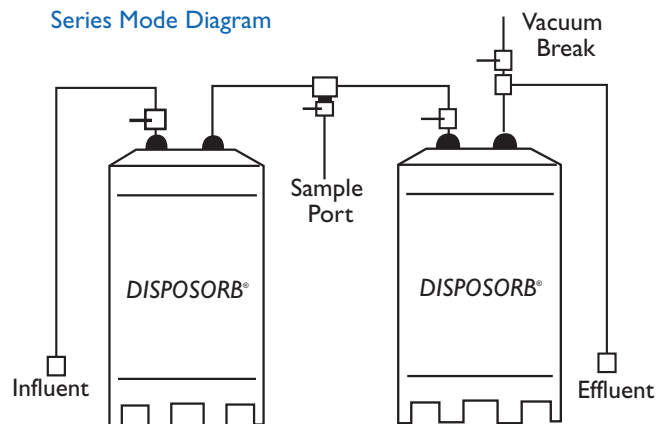
DISPOSORB® units are constructed of polyethylene. They are not suitable for applications where solvents of high-density polyethylene are present in large concentrations or at temperatures above 140°F.

*The units can also be ordered with reactivated carbon providing an economical solution for wastewater applications. Reactivated carbon units are not for potable or food grade use.

Parallel Mode Diagram



Series Mode Diagram



How to Ensure Efficient Utilization of DISPOSORB®

Generally, pre-filtration will be necessary if the stream entering the DISPOSORB® has more than 50 ppm of suspended solids. However, depending upon the nature of the suspended solids, pre-filtration at lower suspended solids levels may be necessary. A flow of 30 gpm will provide 10 minutes contact time per 350 gallon DISPOSORB® unit. Flow in the 350 gallon DISPOSORB® unit should not exceed 30 gpm for an individual unit or create an operating pressure of >7.5 psig in single, series or parallel operation. This pressure rating may limit the maximum flow attainable in applications using multiple DISPOSORB®s in series operations. A flow of 10 gpm will provide 5 minutes contact time per 55 gallon DISPOSORB® unit. Flow in the 55 gallon DISPOSORB® unit should not exceed 10 gpm for an individual unit, or create an operating pressure of >7.5 psig in single, series or parallel operation.

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Contact time and organic removal efficiency can be enhanced by using multiple DISPOSORB® units in parallel or series mode operation. Depending upon the specific application, consideration should be given to using a vacuum-break or anti-siphon loop to ensure the DISPOSORB® is flooded, and that a vacuum cannot be applied to it.

Monitoring the influent to the final DISPOSORB® in series mode is a good precaution against effluent breakthrough. 350 gallon DISPOSORB® units, 44" diameter by 67" high, may be prepared for operation using hose connections or hard pipe. Connections are male 1 1/2" NPT inlet and outlet. Calgon Carbon has available hose harnesses for this purpose as optional equipment. The white connection is the inlet for down-flow operation. The outlet is grey. The DISPOSORB® is not recommended for up-flow operation.

55 gallon DISPOSORB® units, 23" diameter by 36" high, may be prepared for operation using hose connections or hard pipe. Connections are 3/4" NPT inlet and 1" NPT outlet.

DISPOSORB® units are not designed for operation under high pressure or vacuum. The units have been tested under pressure and should not be operated at a pressure above 7.5 psig.

Granular activated carbon must be thoroughly wetted before use to disperse air and to assure proper contact with the influent stream. To facilitate use in the field Calgon Carbon has performed the wetting procedure prior to shipment. Before placing the DISPOSORB® unit into service, fill the unit through the effluent line. The DISPOSORB® is now ready for use in the normal operating mode.

Transporting Adsorber Materials

DISPOSORB® adsorber units may be easily moved by sling or forklift.

Shipping weight for the 350 gallon DISPOSORB® units containing granular activated carbon is approximately 2,500 pounds. Spent units can be expected to weigh about 2,500 pounds after water is drained via siphon on the effluent line or 1 psi air pressure connected to the influent line.

Shipping weight for the 55 gallon DISPOSORB® units containing granular activated carbon is approximately 350 pounds. Spent units can be expected to weigh approximately 350 pounds after water drain.



Disposal

Depending upon what materials are adsorbed on the carbon, the storage, transportation, and disposal of the spent carbon may be subject to Federal, State, and local regulations as a hazardous material.

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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.

Limitations of Liability

The Supplier's liability and the Purchaser's exclusive remedy for any cause of action arising out of this transaction, including, but not limited to, breach of warranty, negligence and/or indemnification, is expressly limited to a maximum of the purchase price of spare parts or equipment sold hereunder. 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 Supplier, for any reason or pursuant to any provision of the warranty, be liable for incidental or consequential damages or damages in excess of the purchase price, nor shall the Supplier be liable for loss of profits or fines imposed by governmental agencies.

Warranty

There are no warranties either expressed or implied or any warranty of merchantability or fitness for a particular purpose associated with the sale of this product.

For information regarding incidents involving human and environmental exposure, call (412) 787-6700 and ask for the Regulatory and Trade Affairs Department.

Visit our website at 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
Fx: 412-787-6713



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

Your local office

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