

DISPOSORB® Carbon Adsorber Canisters



55 GALLON DISPOSORB®



Description

The DISPOSORB® canisters have been developed by Calgon Carbon Corporation for rapid deployment and cleanup of low flow treatment applications such as off-spec products, accidental spills, wash water or runoff water treatment or temporary groundwater cleanups. The DISPOSORB® canisters contain all of the design features of a full scale adsorber, but are easily transportable and are intended to be disposed of properly after use. The DISPOSORB® canisters are available in two sizes; the larger containing 1,000 lbs of granular activated carbon to treat flows up to 35 gpm, and the smaller version containing 165 lbs of granular activated carbon to treat up to 10 gpm.

Typical applications for the DISPOSORB® canisters would include:

- Small wastewater streams
- Groundwater treatment
- Monitoring well discharges
- Underground storage tank leaks
- Process liquid purification or decolorization
- Spill or runoff water treatment
- Wash water treatment
- Water dechlorination
- Pilot testing for carbon adsorption

350 GALLON DISPOSORB®



Features

The DISPOSORB® canisters offer several features and benefits for application of carbon adsorption to low flow treatment applications

- Convenient installation and operation
- Flexibility to be used in series or parallel operation
- Supplied with virgin or reactivated grade carbons
- Can treat various flow rates and contaminant concentrations
- Easily prepared for disposal when treatment complete or canister fully utilized

DISPOSORB® Carbon Adsorber Canisters

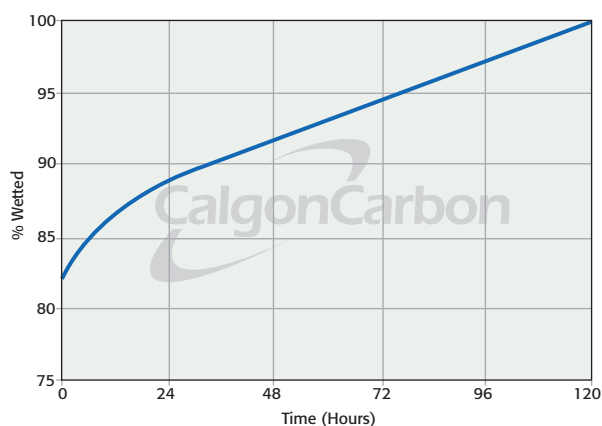


Installation

DISPOSORB® canisters are typically shipped with the installed activated carbon wetted and ready for operation in an aqueous treatment application after the de-aeration step. However, carbon may be shipped with dry activated carbon or may have become dry if left in storage whereupon the carbon must be wetted and de-aerated prior to use. The wetting procedure displaces air from the internal structure of the carbon granule, thus assuring that the liquid to be treated is in contact with the carbon surface.

For wetting prior to operation, each canister must be filled with clean water; the water should be introduced into the effluent connection. The canister should sit for approximately 48 hours to allow most of the carbon's internal surface to become wetted as shown on the wetting curve.

Wetting Curve for GAC (77°F/25°C)



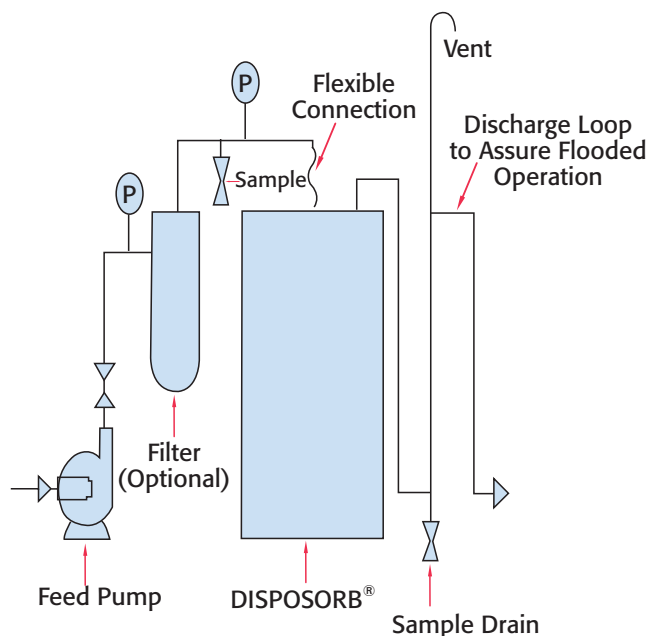
After wetting, or prior to startup of a DISPOSORB® canister with pre-wetted carbon, the carbon bed can be de-aerated by filling the canister upflow with clean water. This procedure will eliminate any air pockets which may have formed between the carbon granules. The DISPOSORB® canister is now ready for operation.

The DISPOSORB® canister should be set on a flat level surface and piped as recommended in the installation illustration. The influent pipe should be attached to the unit by using a flexible connection to allow minor deflection in the piping to vessel connection or the vessel top head. The DISPOSORB® canister discharge piping should include an elevated piping loop to ensure that the canister remains flooded with water at all times.

A filter should be installed prior to the canister if the liquid to be treated contains substantial amounts of suspended solids. A simple cartridge of screen filter helps prevent pressure buildup in the carbon bed.

A pressure relief device should be installed in a line open to the canister if the system can potentially be subject to pressures beyond the design point. Consult plant and/or OSHA codes for guidance.

Typical Installation



Operation

DISPOSORB® canisters should be full of clean water or liquid before treatment begins. Flow rate to the unit should be determined based on required contact time between the liquid and the carbon media. In groundwater treatment applications, the recommended contact time, calculated on an "empty bed basis", is typically 8-10 minutes. Consult your Calgon Carbon Corporation Technical sales Representative for advice about proper contact time for you application.

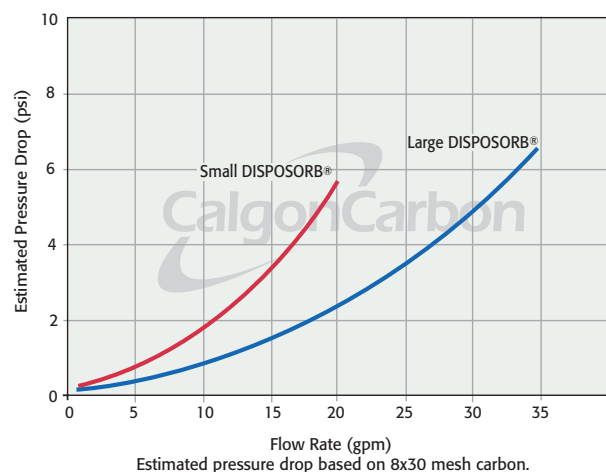
DISPOSORB® canisters can be manifolded in parallel operation for higher flow rates. For series operation, two DISPOSORB® canisters can be piped together sequentially, as normal pressure drop will not exceed the recommended operating pressure.

The DISPOSORB® has minimal space for bed expansion with the design amount of carbon installed, but can be moderately backflushed to eliminate some filtered solids or entrained air by introducing clean water or process liquid at approximately 2-3 gpm/sf to the effluent connection and taking backflush water from the influent connection, and directing this water to a drain suitable for receiving contaminated water with suspended solids and carbon particles.

Calgon Carbon Water Treatment Systems

The DISPOSORB® canisters are designed for a variety of low pressure water or process liquid applications at low flowrates. Calgon Carbon Corporation offers a wide range of carbon adsorption systems and services for a range of water or liquid flow rates and carbon usages to meet specific applications.

Pressure Drop Curve



Pressure Drop

Pressure drop through the DISPOSORB® canisters is a function of the water or process liquid flow as shown in the graph. If higher flows or lower pressure drop is needed, multiple units can be installed in parallel operation. The maximum pressure in the canister should not exceed 7 psig, regardless of the pressure drop across the unit.

Disposal and Transporting Used Canisters

When treatment is complete, or the DISPOSORB® canisters are no longer providing the desired contaminant removal efficiency (spent), the canisters are designed for convenient disposal. Any required samples of the spent carbon for testing can be obtained using a sample thief via the inlet connection which is open to the top of the carbon bed.

Prior to disposal, the DISPOSORB® canisters should be drained of any water not contained within the carbon granule, or the interstitial water. This water can be removed from the canister by siphoning from the outlet connection (connected to the bottom septum); or by applying a slight air pressure of approx 1 psi to the inlet connection to force the water through the outlet piping and connection.

Once emptied of any excess water, the inlet and outlet connections can be capped or plugged with the fittings provided with the shipped unit and sent to a disposal site. The DISPOSORB® canisters can be easily moved using forklifts or slings. The containers are able to be shipped with the spent carbon contained within the canister, providing any other applicable regulations are followed in consideration of the adsorbed contaminants or the application in which it was used. The canisters can be disposed of via landfill or incineration.

Contact Calgon Carbon for resupply of DISPOSORB® canisters for effective water treatment. Calgon Carbon can also provide complete turnkey services, including removal and management of the DISPOSORB® canisters containing spent carbon and resupply of DISPOSORB® canisters

Specifications

DISPOSORB® MODEL	350 gallon (large)	55 gallon (small)
Canister	Polyethylene	HMW Polyethylene
Cover (access port)	None – integral lid	None – integral lid
Internals for treated water collection	PVC dip tube and slotted polypropylene septum	PVC dip tube and slotted polypropylene septum
Inlet (top head)	1 1/2" threaded PVC male npt coupling (white cap)	3/4" threaded PVC fpt coupling
Outlet (top head)	1 1/2" threaded PVC male npt coupling (gray cap)	1" threaded PVC fpt coupling
Temperature limit	140°F	140°F
Pressure limit	7 psig	7 psig
Vacuum	Not rated or recommended for vacuum conditions	Not rated or recommended for vacuum conditions
Canister diameter	44"	23"
Canister height	67"	36"
Carbon amount	1,000 lbs	165 lbs
Ship weight (approximate with wetted carbon)	2,500 lbs	350 lbs

DISPOSORB®

Carbon Adsorber Canisters



Safety Message

Activated carbon will preferentially remove oxygen from air. In closed or partially closed containers or vessels, oxygen depletion may reach hazardous levels. If workers are to enter a container or vessel containing activated carbon, appropriate air sampling and work procedures for potentially low oxygen content spaces should be followed, including all applicable Federal and State requirements.

Warranty

Calgon Carbon Corporation warrants that the DISPOSORB® canisters will be free from defects in materials and workmanship for a period of 90 days following the date of purchase. In the event of a breach of this warranty, Calgon Carbon Corporation will, in its discretion, repair or replace any defective parts or the complete unit during the warranty period. This warranty does not apply to defects caused by (i) normal wear and tear, (ii) accident, disaster or event of force majeure, (iii) misuse, fault or negligence of or by Buyer, (iv) use of the DISPOSORB® canisters in a manner for which it is not designed, (v) external causes such as, but not limited to, power failure or electrical power surges, or (vi) improper storage and handling of the DISPOSORB® canisters. **Except as expressly provided in this warranty statement, Calgon Carbon Corporation disclaims all other warranties, whether express or implied, oral or written, including without limitations all implied warranties or merchantability or fitness for particular purpose. Calgon Carbon Corporation does not warrant that the DISPOSORB® canisters are error-free or will accomplish any particular result. Any advice or assistance furnished by Calgon Carbon Corporation in relation to the DISPOSORB® canisters provided for hereunder shall not give rise to any warranty or guarantee of any kind. This warranty will take precedence over any and all other warranties unless specifically disclaimed and referenced by Calgon Carbon Corporation.**

Limitations of Liability

Calgon Carbon Corporation' liability and the Buyer's exclusive remedy for any cause of action arising out 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 the canister 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. Under no circumstance shall Calgon Carbon Corporation be liable for any incidental, consequential, punitive, exemplary, or special damages of any kind arising as a result of or in connection with the DISPOSORB® canisters regardless of the cause giving rise to any claim. Nor shall Calgon Carbon Corporation be liable for loss of profits or fines imposed by governmental agencies. In no event shall Calgon Carbon Corporation's liability exceed the purchase price paid by purchaser, for any reason, whether by reason of breach of contract, tort, indemnification, warranty or otherwise. This limitation of liability statement will take precedence over any and all other liability provisions unless specifically disclaimed and referenced by Calgon Carbon Corporation.



Making Water and Air Safer and Cleaner

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