Gardner & Clark, Inc.

http://www.gardner-and-clark.com

Activated Carbon Canisters

PVF Series Activated Carbon Canisters

G&C's Vertical Flow Activated Carbon Canisters increase fluid contact by eliminating the potential bypass in using the relatively thin bed available in a radial flow configuration. G&C's PVF 1120 and 1122 canisters outlast the radial flow design by 45%.

Dimensions			
Model	***OD***	***HT***	***ID***
PVF 1120-C	10.75	20.25	2.06
PVF 1122-C	10.75	22.25	2.06
PVF 636	6	36	
PVF 636-610	6	36	

PRF Series Activated Carbon Canisters

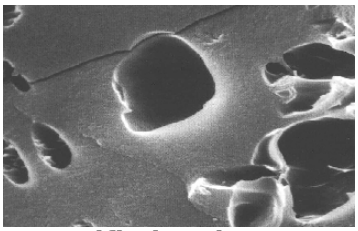
Gardner & Clark Radial Flow Activated Carbon Canisters present a greater superficial area to the process fluid, lowering velocity to better deal with high solids contamination.

Dimensions			
Model	***OD***	***HT***	***ID***
PRF 1120-C	10.75	20.25	2.06
PRF 1122-C	10.75	22.25	2.06
PRF 720	7	20	1.5
PVF 722	7	22	1.5

Gardner & Clark's Activated Carbon

G&C's Activated Carbon is specially selected to maximize performance in gas processing applications where the target contaminant is long chain hydrocarbon molecules. Used in all G&C Carbon Canisters, it is also available in bulk form, in 100 lb bags and 1000 lb super sacks.

Granular carbon



Magnified carbon pore

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Gardner & Clark's Coal Based Activated Carbon

Surface Area

Gardner & Clark coal based activated carbon has approximately 1150 sq meters per gram while lignite carbon, for example, has approximately 650 sq meters per gram. In a canister containing 1 cubic foot of carbon that means that the lignite based canister, with 24 pounds, would have about 7 million square meters. The Gardner & Clark coal based canister at 31 pounds delivers about 16.1 million square meters, more than double that of the lignite equivalent.

Pore Size

According to the manufacturer's published data, lignite carbon has an average pore size of 28--30 angstroms while coal based carbon has an average pore size of 23--25 angstroms. While most carbon is used in water treatment, the job of these carbon canisters is to remove long chain hydrocarbons with a mol weight in excess of 225. In this application G&C's coal based carbon will retain 240 milligrams per gram of carbon compared to 120 milligrams per gram for the lignite based canister.

Capacity

By combining the weight factor in paragraph one with the capacity per gram in paragraph two, the coal based canister has a capacity advantage of 2.6:1 In an effort to reduce costs, many manufacturers have begun to use regenerated carbon in place of the virgin carbon that was previously the industry standard. *Note: Activated carbon cannot be regenerated to its original capacity. Losses depend on the original use and regeneration method. As such, G&C does not use regenerated carbon and recommends against its use.*

Operating Parameters

Factors affecting carbon performance include temperature and contact time in addition to the type of carbon and the target contaminant. Operating temperatures exceeding 150OF reduce carbon capacity in hydrocarbon capture to levels that make their application practically ineffective. Similarly, high flows and the resulting reduced contact time reduce the ability of carbon to capture and retain contaminants and can cause abrasion within the bed. The carbon filter should be protected upstream and down by adequate particulate filtration to prevent fouling of the bed and to prevent any carbon fines from entering the system. In a properly configured system, the carbon filter should not develop any significant differential pressure over time.

	Coal Based Carbon	Lignite Based Carbon
8x30 mesh surface area	1150 M2/gram	650 M2/gram
Weight per cubic foot	31 LBS	24 LBS
Iodine No.	900	650
Molasses RE	60	90
Average pore size	24 Angstroms	29 Angstroms