

FILTRASORB® 820

Granular Activated Carbon



FILTRASORB 820 is used primarily to treat surface water sources for the production of drinking water. This carbon is generally used in deep bed filters where pressure drop may be a concern. FILTRASORB 820 functions as a dual purpose media providing both filtration and adsorption.

APPLICATIONS

- Municipal Drinking Water
- Industrial Wastewater
- Pond/Aquarium
- Pharmaceuticals
- Environmental Water Processing
- Water Reuse
- Surface Water
- Groundwater
- Food & Beverage
- Bottle & Brewing

DESCRIPTION

FILTRASORB 820 is a granular activated carbon developed by Calgon Carbon Corporation for the removal of dissolved organic compounds from water and wastewater as well as industrial and food processing streams. These contaminants include taste and odor compounds, organic color, total organic carbon (TOC), and industrial organic compounds such as TCE and PCE.

This activated carbon is made from select grades of bituminous coal through a process known as reagglomeration to produce a high activity, durable, granular product capable of withstanding the abrasion associated with repeated backwashing, hydraulic transport, and reactivation for reuse. The raw coal is mined and subsequently manufactured into GAC in the United States to ensure the highest quality and consistency in the finished product. Activation is carefully controlled to produce a significant volume of both low and high energy pores for effective adsorption of a broad range of high and low molecular weight organic contaminants.

FILTRASORB 820 is also formulated to comply with all the applicable provisions of the AWWA Standard for Granular Activated Carbon (B604), the stringent extractable metals requirements of NSF/ANSI 61, and the Food Chemicals Codex.

Specifications

Iodine Number, mg/g	900 (min)
Moisture by Weight	2% (max)
Effective Size	1.0–1.2 mm
Uniformity Coefficient	1.5 (max)
Abrasion Number	75 (min)
Screen Size by Weight, US Sieve Series	
On 8 mesh	5% (max)
Through 20 mesh	4% (max)

Typical Properties

Apparent Density (tamped)	0.58 g/cc
Water Extractables	<1%
Non-Wettable	<1%

FEATURES & BENEFITS

- Produced in the United States from a pulverized blend of high quality, domestically mined bituminous coals resulting in a consistent, high quality product.
- Carbon granules are uniformly activated through the whole granule, not just the outside, resulting in excellent adsorption properties and consistent adsorption kinetics.
- The reagglomerated structure ensures proper wetting and minimal floating material.
- High mechanical strength relative to other raw materials, thereby reducing the generation of fines during backwashing and hydraulic transport.
- Carbon bed segregation is retained after repeated backwashing, ensuring the adsorption profile remains unchanged and therefore maximizing the bed life.
- Reagglomerated with a high abrasion resistance, which provides excellent reactivation performance.
- High density carbon resulting in a greater adsorption capacity per unit volume.

SAFETY MESSAGE

Wet, activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

BACKWASH AND CONDITIONING

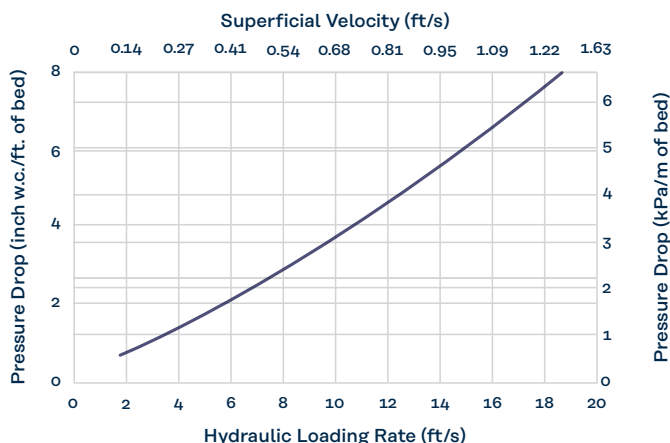
Prior to placing a recently filled granular activated carbon (GAC) vessel online, adequate media backwash and media conditioning are required. The following steps are intended to serve as guidelines to condition GAC media prior to placing the system in service. These steps may be able to be tailored to accommodate site specific constraints. For more information, please contact your Calgon Carbon sales or technical representative.

INITIAL BACKWASH

Following GAC media exchange, slowly fill the vessel with potable water in the up-flow direction until the vessel is full. Fill using flow rates that provide less than 5% bed expansion. Soak the new GAC media overnight (approx. 16 hours) to degas the media bed. Once the soaking period is complete, conduct a start-up backwash (up-flow operation) per the steps outlined below:

TYPICAL PRESSURE DROP

*Down Flow Pressure Drop at 13C/55F
Based on a backwashed and segregated bed*



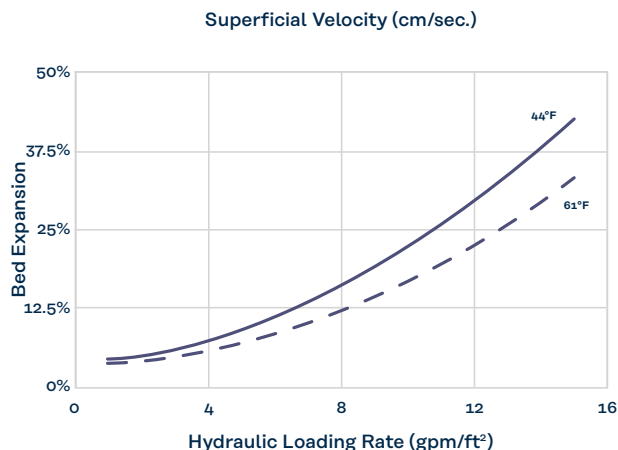
Startup Backwash

1. Flow @ 5% expansion for 2 minutes
2. Flow @ 10% expansion for 2 minutes
3. Flow @ 15% expansion for 2 minutes
4. Flow @ 30% expansion for 30 minutes
5. Flow @ 15% expansion for 2 minutes
6. Flow @ 10% expansion for 2 minutes
7. Flow @ 5% expansion for 2 minutes

In addition to the initial backwash process that is outlined above, an identical backwash procedure is recommended when an adsorber is restarted after an extended shutdown or restarted after the bed has been drained.

TYPICAL BED EXPANSION DURING BACKWASH

*Bed Expansion During Backwash at 13C/55F
Based on a backwashed and segregated bed*



DESIGN CONSIDERATIONS

As a replacement for existing filter media, the conversion to FILTRASORB 820 activated carbon imposes no major changes to a plant’s normal filtration operations. If more contact time is required, the height of the backwash troughs can be increased. Calgon Carbon Corporation can also provide complete modular adsorption systems as an add-on treatment stage if required.

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