

## FILTRASORB® 100 AND 200

### Agglomerated Coal Based Granular Activated Carbon

#### DESCRIPTION

**FILTRASORB® 100** and **200** are both from the renowned Filtrasorb range of Granular Activated Carbons, which are installed in over 1,000 water treatment plants in Europe, the United States and Asia. **FILTRASORB®** carbons are produced by steam activation of selected grades of bituminous coal that have first been pulverised then **agglomerated**.

Though they have less total pore volume than other Filtrasorb products, **FILTRASORB® 100** and **200** possess a high proportion of high energy adsorption pores required for the removal of specific organic compounds. This makes them particularly suited to the removal of micropollutants such as chlorinated hydrocarbons from ground waters or surface waters containing a low level of natural organic matter. In addition, they are suited to the removal of taste and odour forming compounds such as geosmin and for dechlorination and deozonation applications.

#### FEATURES

Agglomerated coal based granular activated carbons have several properties, which explain their superior performance in a wide range of applications:

- Produced from a pulverised blend, results in a **consistent high quality product**.
- The Activated Carbon Granules are uniform activated over the whole granule, not just the outside. This results in **excellent adsorption properties** in a wide range of applications.
- High mechanical strength of the coal based carbon gives **excellent reactivation performances**.
- Agglomerated coal based carbon are suitable for **multiple reactivations** compared to other base materials such as peat and wood.
- The agglomerated structure ensure **rapid wetting**. There is no remaining floating material.
- Carbon bed segregation is retained after repeated backwashing, ensuring the **adsorption profile remains unchanged** with time and therefore maximising the bed life before breakthrough.
- **FILTRASORB® 100** and **200** comply with EN12915 and are approved by the United Kingdom Drinking Water Inspectorate

#### SELECTION

**FILTRASORB® 100** and **200** have respectively a typical effective size range of 0.9mm and 0.7mm. In general, the smaller the granule size, the better the adsorption performance, therefore **FILTRASORB® 200** should be selected unless the pressure drop is too high. In this case, **FILTRASORB® 100** should be selected.

#### PROPERTIES

SPECIFICATIONS	F100 8x30	F200 12x40
Iodine Number, min., mg/g	850	850
Abrasion Number, min.	75	75
Moisture Content, as Packed, max. %, %w/w	2	2
Effective Size, mm	0.8-1.0	0.6-0.8
Mesh Size, US Sieve Series	8x30	12X40
> 8 mesh (2.36mm), max. %	15	-
> 12 mesh (1.70mm), max. %	-	5
< 30 mesh (0.60mm), max. %	4	-
< 40 mesh (0.425mm), max. %	-	4

*(Please refer to the Sales Specification Sheets, which state the Chemviron Carbon test method used to define the above specifications. Copies are available upon request.)*

TYPICAL PROPERTIES	F100 8x30	F200 12x40
Backwashed and Drained Bed Density*, kg/m <sup>3</sup>	500	500
Hardness Number	95	95
Floating Content, %w/w	0.1	0.1
Surface Area, (N <sub>2</sub> BET method**), m <sup>2</sup> /g	850	850
Methylene Blue	230	230
Mean Particle Diameter, mm	1.6	1.0
Uniformity Coefficient	1.9	1.7
Dechlorination half length, DIN19603,cm	2.5	2.0
Atrazine loading*** at 1µg/l, mg/g	40	40
Trichloroethylene loading *** at 50µg/l, mg/g	25	25

*(\*) Backwashed and Drained Density for adsorber sizing;*

*(\*\*) Brunauer, Emmett and Teller, J.Am. Chem. Soc. 60. 309 (1938).*

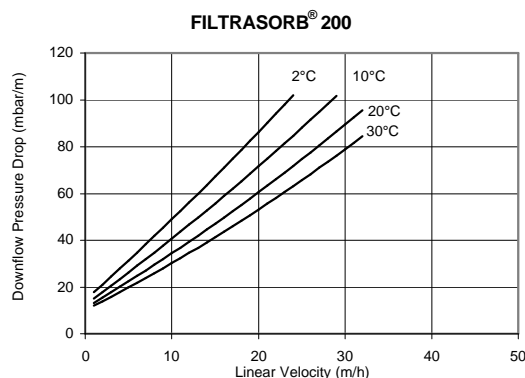
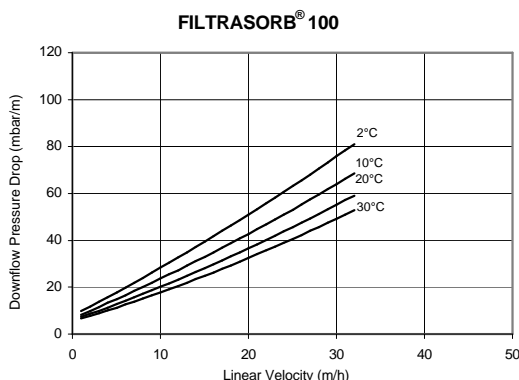
*(\*\*\*) Isotherm loading in distilled water. These are reported for comparison and are unlikely to reflect loadings in practice.*

#### RECYCLING BY THERMAL REACTIVATION

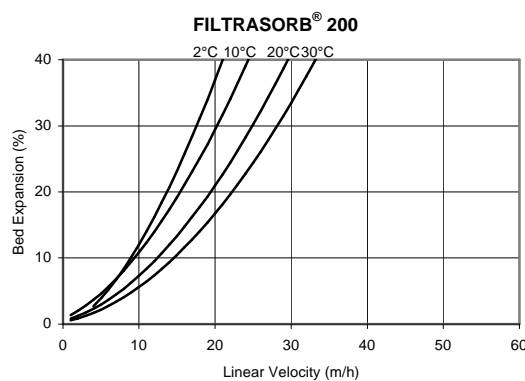
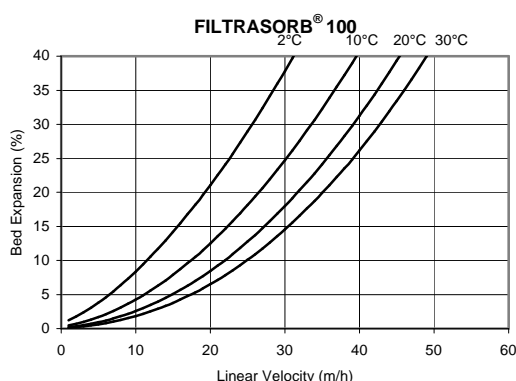
Once granular carbon is saturated or the treatment objective is reached, it can be recycled, by thermal reactivation, for reuse. Reactivation involves treating the spent carbon in a high temperature reactivation furnace to over 800°C. During this treatment process, the undesirable organics on the carbon are thermally destroyed. Recycling by thermal reactivation is a highly skilled process to ensure that spent carbon is returned to a reusable quality. **Chemviron Carbon** operates Europe's largest reactivation facilities and daily recycles large quantities of spent carbon for a divers range of customers. Recycling activated carbon by thermal reactivation meets the environmental need to minimise waste, reducing CO<sub>2</sub> emissions and limiting the use of the world's resources.

The combined high mechanical strength of **FILTRASORB® 100** and **200** with the transport pores gives the carbon **excellent reactivation performance** and **low losses**.

## TYPICAL PRESSURE DROP CURVES FOR A BACKWASHED AND SEGREGATED BED



## TYPICAL BED EXPANSION CURVES FOR A BACKWASHED AND SEGREGATED BED



### DESIGN INFORMATION

The following are typical design parameters for **FILTRASORB® 100** and **200** installed for the treatment of ground water.

- Superficial contact time 10-20 min.
- Bed Depth 1.5-3 m
- Linear Velocity 10-20 m/h
- Backwash Bed Expansion 20 %

### PACKAGING

- 25 kg bags
- Big bags
- Bulk tanker

### 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.

### QUALITY

Each of our worldwide operations has achieved **ISO9001** certification for their quality management system related to activated carbon. **Chemviron Carbon** guarantees the specifications against representative sampling. For food grade applications, it is recommended to check the quality of the initial effluent before putting the adsorber into service.

### CHEMVRON CARBON

**Chemviron Carbon**, the European operation of Calgon Carbon Corporation, is a global manufacturer, supplier, and developer of granular activated carbon, innovative treatment systems, value added technologies, and services for optimising production processes and safely purifying the environment.

With our experience developed since the early years of the twentieth century, facilities around the world, and a world-class team of over 1,200 employees, Calgon Carbon Corporation can provide the solutions to your most difficult purification challenges.

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Visit our website at [www.chemvironcarbon.com](http://www.chemvironcarbon.com)

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Corporate Headquarters  
400 Calgon Carbon Drive  
Pittsburgh, PA 15205, USA  
Tel.: +1 (0) 412 787-6700  
Fax: +1 (0) 412 787-6713

**Chemviron  
Carbon**

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

Your local office

