

CARBSORB® 30 AND 40

Coal Based Granular Activated Carbon

DESCRIPTION

CARBSORB® 30 and **40** are bituminous coal based granular activated carbons designed to provide cost effective solution for water and liquid phase applications. **CARBSORB® 30** and **40** offer a number of operating advantages over low cost Liquid phase carbon that exist in the market.

FEATURES

Coal based granular carbons have several properties which explain their performance in a wide range of applications.

- The adsorption capacity allows for effective removal of organic contaminants, pesticides, taste, and odour.
- Bituminous coal base produces a product with high hardness ensuring excellent resistance to abrasion caused by transport, mechanical stress, and backwashing.
- Product mesh size allows for limited pressure drop.
- **CARBSORB® 30** and **40** comply with EN12915.

SELECTION

CARBSORB® 30 and **40** are suitable for use in the following applications:

- Potable water treatment
- Groundwater remediation
- Home water filtration
- Other industrial applications where removal of organics is required

CARBSORB® 30 and **40** have a typical mean particle diameter of 1.6 mm and 1.0 mm respectively. In general, the smaller the granule size, the better the adsorption performance, therefore **CARBSORB® 40** should be selected. If the pressure drop is too high with **CARBSORB® 40**, **CARBSORB® 30** should be selected.

PROPERTIES

CARBSORB® SPECIFICATIONS	30	40
Iodine Number, min., mg/g	900	950
Hardness Number, min.	90	90
Moisture Content, as packed, max., wt%	2	2
Mesh Size, US Sieve Series, wt%	8x30	12x40
> 8 mesh (2.36 mm), max.	11	-
> 12 mesh (1.70 mm), max.	-	5
< 30 mesh (0.60 mm), max.	4	-
< 40 mesh (0.425 mm), max.	-	4

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

CARBSORB® TYPICAL PROPERTIES	30	40
Methylene blue number	230	260
Total Surface Area, (N ₂ BET method ²), m ² /g	900	950
Backwashed and Drained Bed Density ¹ , kg/m ³	450	450
Effective size, mm	0.9	0.6
Uniformity coefficient	1.8	1.8
Mean Particle Diameter, mm	1.6	1.0
Dechlorination Half Length, cm	4	2

¹ Backwashed and drained density is used for adsorber sizing.

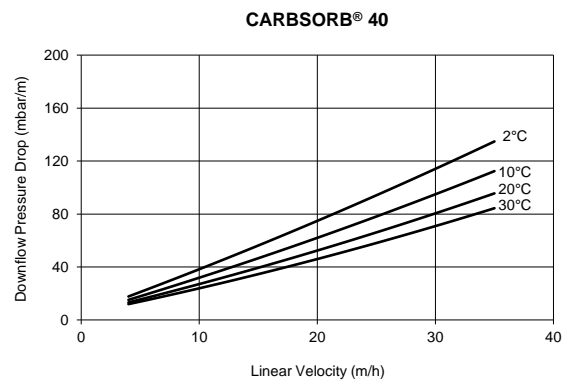
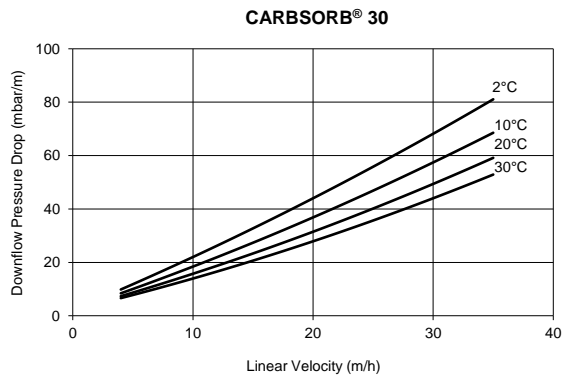
² Brunauer, Emmett and Teller, J. Am. Chem. Soc. 60. 309 (1938).

RECYCLING BY THERMAL REACTIVATION

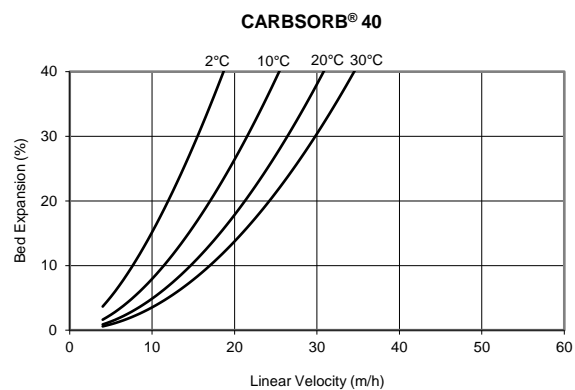
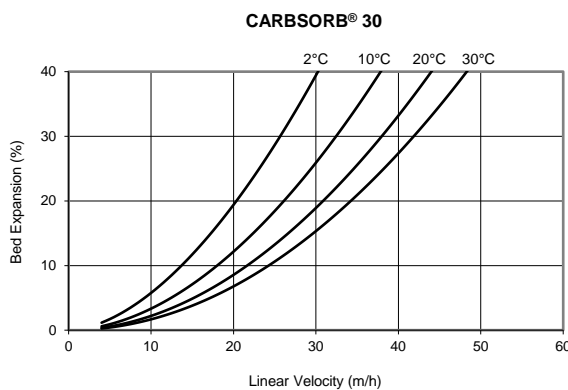
Once granular carbon is saturated or the treatment objective is reached, it can be recycled, by thermal reactivation, for reuse. Reactivation involves treating the spent carbon in a high temperature reactivation furnace to over 800°C. During this treatment process, the undesirable organics on the carbon are thermally destroyed. Recycling by thermal reactivation is a highly skilled process to ensure that spent carbon is returned to a reusable quality. **Chemviron** operates Europe's largest reactivation facilities and daily recycles large quantities of spent carbon for a diverse range of customers. Recycling activated carbon by thermal reactivation meets the environmental need to minimise waste, reducing CO₂ emissions and limiting the use of the world's resources.

Chemviron can offer a recycling service for **CARBSORB® 30** and **40** to avoid disposal of the spent activated carbon.

TYPICAL PRESSURE DROP CURVES FOR A BACKWASHED AND SEGREGATED BED



TYPICAL BED EXPANSION CURVES FOR A BACKWASHED AND SEGREGATED BED



DESIGN INFORMATION

The design of a granular activated carbon treatment system will depend on the nature of the stream to be treated. The following are typical design parameters for organics removal with **CARBSORB® 30** and **40**:

- Superficial contact time 10-60 min.
- Bed depth 1-4 m
- Linear velocity 5-15 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 **ISO 9001:2015** certification for their quality management system related to activated carbon. **Chemviron** 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.

CHEMVIRON

Chemviron, the European operation of Calgon Carbon Corporation, is a global manufacturer, supplier and developer of activated carbons, 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 1,300 employees, Calgon Carbon Corporation can provide the solutions to your most difficult purification challenges.

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