



Activated Carbon

Filter material

What is Activated Carbon

Activated carbon is a porous form of carbon which can be manufactured from a variety of carbonaceous raw materials. The principal commercial products are made from coconut shell, coal, peat or wood. The activation process involves treating the raw material with steam or chemicals, thereby developing a pore structure. Activated carbon is characterized by a vast system of pores of molecular size within the carbon particles resulting in the formation of a material with extensive internal surface area. Commercially available activated carbons have surface areas from 400 m²/g to in excess of 2000 m²/g.

Activated Carbon selection

Selection of the most appropriate activated carbon type is based on known characteristics of the chemicals to be removed in an adsorption process. Powder carbons are mainly used in fixed or moving bed filters. In the case of granular carbons, the smallest particle size is normally selected consistent to retention in the filter and acceptable flow resistance since this will provide the best adsorption kinetics. Activated carbon is sometimes chemically impregnated to enhance the performance.

Some applications of activated carbon for water treatment:

- Dechlorination
- Hydro carbon removal
- Deozonisation
- Deodourisation
- Deocolourisation

Product	Type	Base	Size	Ctc	Surface area	Bulk density
			mm	%	m ² /g bet N ₂	kg/m ³
Not impregnated coal						
HD 301	Granular	Coconut	1 - 3	45-50	1.000	540
HDG 80x2	Sticks	Coconut	2 ±0.2	60-65	1.200	480
HDG 50x4	Sticks	Coal	4 ±0.2	60-65	1.050	480
Impregnated coal						
HDG-Ag-0,05 8x14	Granular	Coconut, Ag	1 - 3	65-70	1.250	480

*Ctc = Amount of carbon tetrachloride

