

Silcarbon
activated carbon

**AIR PURIFICATION
WATER TREATMENT**

WATER TREATMENT



One of the main applications of Silcarbon activated carbon is the treatment of liquids, especially water. Basically a distinction is made between: **Drinking water purification, Groundwater treatment and Waste water treatment.** The pollutants found by treating water with activated carbon mostly manifest themselves as solvents, hydrocarbons and halogenated hydrocarbons. The activated carbon removes these organic substances from the water. Treatment of swimming pool water by means of activated carbon does not fit in this scheme. In fact it is more a matter of dechlorination or deoxygenation than of removing adsorptive pollutants. The activated carbon catalytically breaks down the chlorine and ozone respectively. Activated carbon made of coconut shells, like Silcarbon K 835 or Silcarbon K 814, is very hard and therefore extremely resistant to the aggressive chlorine or ozone and so exceptionally suitable for dechlorination and deoxygenation. For water treatment **Powdered carbon, Granular carbon, Fine pelletized carbon** are used.

Usually powdered carbons are applied for processes that require the carbon to be dosed in the polluted water. The activated carbon loaded with the pollutants has to be separated by suitable filter equipment. Our powdered carbons Silcarbon TH 90 and Silcarbon CW 20 are applied for water purification. The granular or fine pelletized carbons are applied in fixed bed adsorption equipment. The polluted water should pass the stationary layer of activated carbon in one direction (mostly downward). So the activated carbon will adsorb the pollutants. The life time of the activated carbon is determined by its loading capacity, which again is fixed by the pore structure and the specific surface area. Silcarbon granular carbons stand out for their very large specific surface area (mostly more than 1000 m²/g). We shall be pleased to help you finding the right activated carbon to suit your requirements. Of course the most economic solution will be our guide line.



AIR PURIFICATION



Pelletized carbons and coarse-grained granular carbons are mainly used for gas and air purification.

Many industrial processes discharge smoke and vapours with more or less toxic matter as e.g. (chlorinated) hydrocarbons. The majority of these toxics are prohibited to blow off in the open. The outstanding properties of activated carbon realize the adsorption of the pollutants by its hydrophobic nature.

Basically exhaust air treatment should be distinguished from solvent recovery when dealing with air purification. Usually the distinction is evident from the concentration and quantity of the pollutants. Large quantities make it economically possible to desorb and recover solvents from the activated carbon (e.g. with steam). However, low concentrations or

mixtures of pollutants which cannot be recycled require the application of pelletized carbon for single use only. Depending on the type of pollutant it might be possible to clean the used activated carbon in our reactivation plant.

Our pelletized Silcarbon SIL 40 as well as granular Silcarbon C 46 are perfectly fitted for exhaust air purification. Pelletized Silcarbon SC 40 is successfully applied to recover solvents with a high boiling point, or is also used as high quality one-way activated carbon to adsorb substances as e.g. siloxanes from biogas or other organic volatile contaminants from waste air streams.

Pelletized Silcarbon SC44 is one of the highest quality activated carbons to recover solvents with a medium or low boiling point.



Silcarbon

SILCARBON SPECIALS



Impregnated activated carbon. Many high-tech processes produce exhaust air containing pollutants that can only incompletely be adsorbed by common activated carbon. Often it concerns low molecular and polar substances that, even in low concentrations, have a toxic effect or may otherwise be a problem. In such cases activated carbon is used, that has especially been prepared, i.e. impregnated in order to react to the relevant pollutants. On the basis of a more or less complicated chemical reaction between the pollutants and the impregnation the pollutants are removed from the exhaust air (chemisorption).

Silcarbon activated carbons are impregnated to suit your requirements:

For example iodine impregnated activated carbon Silcarbon J42 is successfully used for the adsorption of hydrogen sulfide from biogas. Another specialty, silver impregnated carbon Silcarbon AG03, is used in small drinking water units to prohibit bacteria growth on the carbon.

Acid washed activated carbon with low ash content

The non-carbonaceous part of activated carbon is described as ash content. Basically our granular activated carbons made from coconut shells have very low ash content and are therefore very pure. Typical ash contents of Silcarbon K 835 and Silcarbon K 814 are about 2 % by weight. In many cases, e.g. for condensate oil removal, a very pure and neutrally reacting activated carbon is required: granular Silcarbon K48 special, a low ash content, acid washed specialty, has a pH-value between 5 and 7, with very low water soluble silica content suitable for deoiling steam condensate.



SILCARBON - KNOWS HOW!



Survey of types and their most important fields of application

Applications	powdered Silcarbon		granular Silcarbon				pelletized Silcarbon				impregnated Silcarbon	
	TH90	CW20	K48S	K835	K814	C46	SIL15	SIL40	SC40	SC44	AG03	J42
Air cleaning						●		●	●			
Aquarium water			●				●					
Biogas									●			●
Catalyst support	●									●		
Condensate deoiling			●									
Dechlorination/Deozonezation				●	●							
Decolorizing		●										
Edible oil	●											
Electroplating	●				●		●					
Food industry	●	●										
Glycerin			●									
Pharmaceuticals	●	●										
Potable water	●			●	●		●				●	
Solvent recovery						●			●	●		
Sugar refining		●										
Tobacco filters							●					
Waste Water	●	●		●	●		●					
Water treatment	●			●	●		●					

This list only shows a part of our vast range of activated carbons and a part of many other possible applications. Please contact us to assist you in choosing the right type Silcarbon for your specific application.



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Intertek

DIN EN ISO 9001:2008

HALAL *Kosher*

Member ACPA
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