CHEMSORB® | Activated carbon filters

Activated Carbon filters for VOCS, solvents and thinners

What is Chemsorb® activated carbon filter?

The Chemsorb® filter is suitable for purifying all gaseous organic compounds (VOCs, solvents, thinners, odours) and many inorganic ones.

Activated carbon filter: How does it work?

The term activated carbon refers to carbon that has been subjected to an activation treatment, giving it exceptional porosity and consequently making it adsorbent.

Gallery

The adsorption consists of capturing and retaining the molecules of gas and other pollutants in the carbon’s cavities, thanks to electrostatic bonding.

In this way it is possible to drastically reduce the concentration of the polluting molecules present in the flow.
The adsorption efficiency depends on many factors, the main of which are:

- relative humidity;
- temperature;
- speed at which the flow passes through;
- active carbon surface area;
- molecular weight, boiling point and concentration of the pollutants to be captured;
- nature of the pollutant.

The nature of the pollutant is the characteristic that most influences the adsorption efficiency of the activated carbon.

In fact, depending on their nature and their chemical characteristics, pollutants can be highly adsorbable (benzene, kerosene, fumes …), medium adsorbable (chlorine, acetone, ethylene …) or little adsorbable (propane, ammonia …). All ketones cause self-combustion problems so the carbons are not renewable.
The quantity and quality of adsorbent material effectively used depends on the concentration and type of the solvents (VOCs) to be treated.
The use of common activated carbon is recommended for temperatures up to a maximum of 50-60 C. To prevent a rapid saturation of the activated carbon, it is necessary to work with a relative humidity lower than 60%.
The typical efficiency of a Chemsorb® activated carbon filter can reach 95%, depending on the material's degree of retention and design parameters.
The Chemsorb® activated carbon filter is designed by Tecnosida® on the basis of the data provided by you, in order to maximize the adsorption efficiency. It's possible to adapt the activated carbon filter to your specific needs and to the peculiarities of your industrial process. **Contact Tecnosida** to receive specific advice!

Chemsorb® models

Tecnosida offers both circular and rectangular models. The circular one is composed of robust carbon steel sheet elements, rolled and painted, and also has support legs. The rectangular type is made of press formed galvanized panels, assembled and bolted to each other. Alternatively, they can be made of other materials.
This type of construction makes future expansion of the purifier simple. Chemsorb® consists of compact elements that allow the spent carbon to be easily replaced with new refills.
It is therefore a very simple equipment to manage, both in operation and for maintenance.

	RECTANGULAR FILTER WITH HORIZONTAL BED	CIRCULAR FILTER WITH VERTICAL CARTRIDGES

	RECTANGULAR FILTER WITH HORIZONTAL BED	CIRCULAR FILTER WITH VERTICAL CARTRIDGES
Flow rate m^3/h	500 to 2.000	2.000 to 8.000
Quantity of carbon	500 and over	1.000 to 1.500
Dimensions	1.500 x 1.100h. 1.900 mm	1.900 x h. 4.000 mm

Chemsorb® applications

Ideal for all production processes and for specific applications that generate emissions containing VOCs, such as:

- Dry cleaning with VOCs (volatile organic compounds) or COCs (chlorinated organic compounds);
- Printing, painting, impregnation, glue spreading, resin coating, laminating, pad printing and lithography of various substrates with solvent-based products;
- Production of paints, glues, adhesives and/or related products with solvents;
- Other processes with VOC emissions.

Strenghts of the Chemsorb® activated carbon filters

The Chemsorb® activated carbon filter:

- may be designed with different shapes (circular or rectangular models). These construction methods make it easy to expand the filter even after the installation;
- it is designed in sheet steel, polypropylene, stainless steel or other materials depending on the needs of the production sector;
- it is simple to use and its efficiency is kept constant thanks to ordinary maintenance;
- may be used to filter a wide range of gaseous pollutants;
- it is designed according to the best technology (BAT).

Available options

- pre-treatment filter for dusts removal;
- non-return valve;
- electronic balance for checking the exhaustion of coal;
- ladders and protective railings;
- possible design with breakage panels in compliance with ATEX norms.

Chemsorb® activated carbon filters: maintenance service

Tecnosida® is a perfect partner for planning and execution of ordinary and extraordinary maintenance services required to :

- Verify filter’s proper functioning
- Keep high filtration efficiency
- Reduce economic and energetic wastes
- Comply with safety and environmental rules and regulations

Contact us for more information