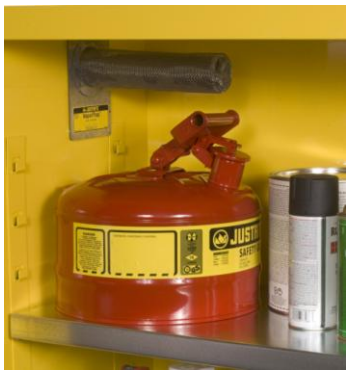
JUSTRITE®

TechTALK

The Justrite VaporTrap™ Filter
Helps reduces harmful volatile organic chemical vapors found inside Safety Cabinets.



Volatile organic chemicals (VOCs) vapors from flammable liquids stored in our Safety Cabinets can be harmful to health and to the environment. It is important to reduce inhalation exposure to VOC vapors and the vapors escaping into the atmosphere.

Liquid VOC with high vapor pressure at room temperature creates the potential to exceed allowable limits established by OSHA & the EPA. Liquids with low boiling points have higher vapor pressure. This is a condition where molecules can escape the liquid by evaporation and is a condition that increases with heat until the liquid reaches its boiling point. A liquid's boiling point is the point when there is a free exchange of molecules between the liquid and the atmosphere.

How Does It Work

The Justrite VaporTrap™ Filter uses activated carbon to adsorb (often confused with absorb) the VOCs vapor particulates from the atmosphere. Activated carbon is very effective in the adsorption process which, is described as the adhesion of molecules of gas, liquids, or dissolved solids to its surface [(1)]. Carbon's efficiency to adsorb is based on the ratio of its surface area to mass. It is estimated a pound of highly activated carbon has a surface area approaching 140 acres [(2)].

Guidelines for Use

Keep the filter sealed in its package until you are ready to put it into service. Justrite has provided a label with a space to record the date the filter was put into service. Magnetic base attaches easily to metal cabinet. To reduce employee's inhalation exposure to harmful VOC vapors, It is recommended to place one or two filter(s) units in the top the Safety Cabinet instead of the bottom.

In the absence of having expensive equipment to monitor VOC vapor levels, it is recommended to establish a policy to replace the filter periodically (i.e. 2 or 3 months). Typical adsorption capacities for moderately adsorbed compounds range from 5 to 30 percent of the weight of the carbon [(2)]. For the VaporTrap™ Filter, that can be an increase in weight from 0.7 oz. to 4.0 oz. when saturated. Please keep in mind VOC vapor should not be associated with odor.

It is difficult to estimate the amount of VOC vapors that are adsorbed or the life of the Justrite VaporTrap™ Filter. There are too many variables that affect the charcoal's life, or relative adsorption rate; from the chemical itself, chemical's purity, a chemical's vapor pressure, temperature, humidity, age of the charcoal etc.

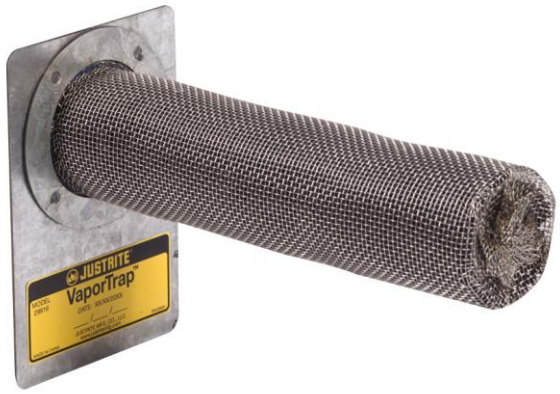
Important Note: The Justrite VaporTrap™ Carbon Filter is not intended be used as a substitute for using "safe closed containers" as required by OSHA and the EPA. It is still important to clean up spills and residues from the cabinet and containers.

Justrite's VaporTrap™ Filter

Activated carbon filter medium contained in a stainless steel mesh cartridge reduces VOC vapors inside cabinets containing flammable liquids.

Unique cylindrical design provides more adsorption surface area. Magnetized 4" x 5½" (102mm x 139mm) base attaches easily and can be repositioned anywhere.

Date notation area on label serves as a reminder for replacement; life cycle varies based upon vapor types and concentrations.



QUICK FAQ'S

Does the Filter reduce odors?

No. The filter is designed to reduce *VOC vapors*, not necessarily associated with odors.

How often should the Filter be replaced?

There is no definitive answer on when a filter should be replaced because there are many variables involved from the chemical itself, a chemical's purity, a chemical's vapor pressure, temperature, humidity, age of the charcoal etc... As a general guideline, replacing the filter every 2 to 3 months would be a good practice.

Where should the Filter be positioned?

The filter's design and magnetized base allows for flexible placement anywhere in a safety cabinet. Placing a filter at the top of a cabinet provides greater visibility, serves as an easy way to check the date the filter went into service along with a reminder to replace the filter, and reduces employee's inhalation exposure to harmful VOC vapors.

Is there a difference between adsorb and absorb?

Yes, Justrite's VaporTrap™ Filter is very effective in the adsorption process which, is described as the adhesion of molecules of gas, liquids, or dissolved solids to its surface [(1)]. Absorption is the process to suck up, to drink in, or to act as a sponge.

References:
1) "Glossary". The Brownfields and Land Revitalization Technology Support Center. Retrieved 2009-12-21.
2) "Activated Carbon Adsorption For Treatment Of Voc Emissions" by: Austin Shepherd, P.E., C.I.H. 2001-5