Activated Carbon Efficiency

Particle Air Filters (including HEPA) do not filter gases. A Particle Air Filter may capture particles that are out-gassing odors. ALL odors are gasses. How do we filter most gases? With adsorption or chemisorption filters.

Adsorption

Activated Carbon is the most common media of adsorption filters.

Why? Because activated carbon has a tremendous surface area and can adsorb most organic chemicals. Van der Waal’s Forces include the attraction and capture of gas or liquid molecules to the surface of a solid.

Surface area is critical.

1 gram of activated carbon has over 5382 ft² of surface area. Just 3 lbs has over 160 acres of surface area.

Some Specific Chemicals & Compounds:

B - Benzene, Bromine, Butanone, Butyl Acetate, Butyl Alcohol, Butyl Cellosolve, Butyl Chloride, Butyl Ether, Butyric Acid.
C - Camphor, Caprylic Acid, Carbolic Acid, Carbon Disulfide, Carbon Tetrachloride, Cellosolve, Cellosolve Acetate, Chlorobenzene, Chlorobuadiene, Chloroform, Chloronitropropane, Chloropierin, Creosote, Cresol, Crotonaldehyde, Cyclohexane, Cyclohexanol, Cyclohexanone, Cyclohexene.
D - Decane, Dibromoethane, Dichlorobenzene, Dichlorodifluoromethane, Dichloroethane, Dichloroethylene, Dichloroethyl Ether, Dichloronitroethane, Dichloropropane, Dichlorotetrafluroethane, Diethyl Ketone, Dimethylaniline, Dimethyl sulfate, Dioxane, Dipropyl Keytone.
F - Heptane, Heptylene.
H - Heptane, Heptylene, Indole.
I - Indole, Idoform, Isophorone, Isopropyl Acetate, Isopropyl Alcohol, Isopropyl Ether.
K - Kerosene.
L - Lactic Acid.
M - Menthol, Mercaptans, Mesityl Oxide, Methyl Acrylate, Methyl Butyl Ketone, Methyl Cellosolve, Methyl Cellosolve Acetate, Methyl

1.800.533.7533
USEPHOENIX.COM
EFFECTIVE ODOR AND GAS REMOVAL

Carbon - Potassium Permanganate Filters

Activated Carbon Efficiency

Chloroform, Methyl Ethyl Ketone, Methyl Mercaptan, Methylcyclohexane, Methylcyclohexanol, Methylene Chloride, Monochlorobenzene, Monofluorotrichloromethane. P - Palmitic Acid, Parachlorobenzine, Pentanone, Perchloroethylene, Phenol, Propionic Acid, Propyl Acetate, Propyl Alcohol, Propyl Chloride, Propyl Ether, Propyl Mercaptan, Putrescine, Pyridine.
S - Skatole, Styrene Monomer, Sulfuric Acid.

Good Adsorption- 10-25% of weight

Type of Odors: Animals, Anesthetics, Bleaching Solutions, Coal Smoke, Combustion, Corrosive Gases, Film Processing, Inorganic Chemicals, Mold, Solvents, Volatile Chemicals.

Specific Chemicals & Compounds:

Activated Carbon is not effective on glycols, strong acids and bases, metals and some inorganics, such as lithium, sodium, iron, lead, arsenic, fluorine, and boric acid.

Chemisorption is a kind of Adsorption which involves a chemical reaction between the surface and the adsorbate. Chemically bonded Adsorption.

Potassium Permanganate is an inorganic chemical compound that is a strong oxidizing agent that doesn't have a toxic end product.

Excellent Chemisorption
Acetic Acid, Aldehydes, Ethylene, Formaldehyde, Gluteraldehyde, Hydrogen Cyanide, Hydrogen Sulfide, Mercaptans, Nitric Oxide, Nitrogen Dioxide, Sulfur Dioxide, Sulfur Trioxide.

The combination of Activated Carbon and Potassium Permanganate provides the widest range of odor removal.