

### Activated Carbon is the only safe, cost effective way to trap noxious gases and odors.

#### ■ What it does and how it works.

Activated carbon is carbon that has been treated with oxygen to open up millions of tiny pores between the carbon atoms. There are so many of these that one pound of activated carbon has a surface area of 60 to 150 acres.

#### ■ The technology used in military gas masks.

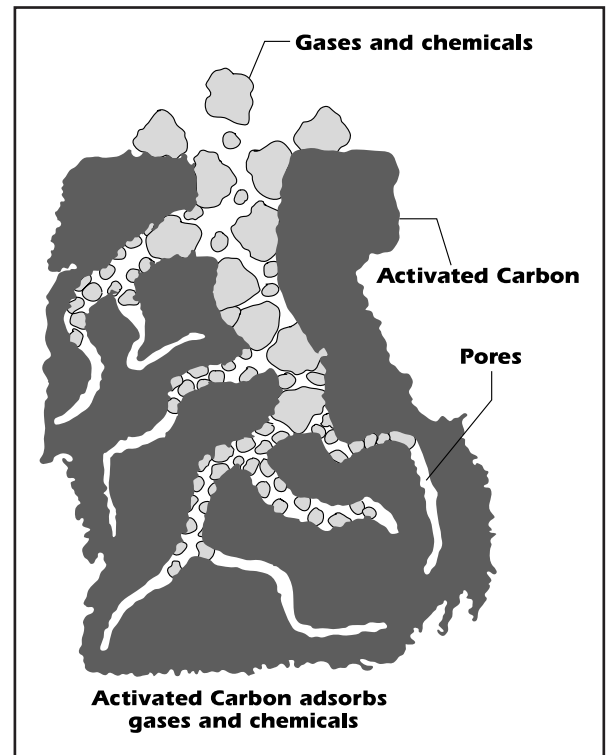
Activated carbon is the substance that keeps military personnel safe from poisonous gases. It is also used for water filtration.

#### ■ Adsorption is the process where certain chemicals are attracted to the activated carbon and then bond to it. The millions of pores in the activated carbon provide an enormous surface area for these chemicals to bond with.

#### ■ The bigger the filter the more chemicals it adsorbs and the longer it keeps on working.

An activated carbon filter acts rather like a sponge. When it is full it can adsorb no more. The more carbon you have the more you can adsorb before changing the filter. AllerAir MAC-B carbon filters have from 7 to 48 lbs. and will last from 9 to 24 months. Most off the shelf cleaners have only a few token ounces of carbon sprayed on a mesh. Its not enough to have any useful long term effect.

#### ■ Activated carbon can be impregnated with catalysts that enable it to attract non-carbon based chemicals. These special blends of activated carbon are available for AllerAir air cleaners. Our air quality experts will recommend the right solution to any air contamination problem you encounter.



### Other methods sometimes used, that we recommend you avoid.

- **Ozone** is used as an air purifier. This method creates unstable oxygen molecules that convert airborne chemicals into different substances by oxidization. This may neutralize these materials but it does not remove them. Worse, ozone attacks the lining of the lungs and is a known carcinogen.
- **Ionization** is a process that sends an electric charge into the room. This ionizes the particles which then stick to the walls and must be cleaned off. It is of limited use in disaster clean up situations.
- **Electrostatic plates** attract particles by an electrostatic charge in the plates. These very quickly become full and tend to attract mold. Consequently if they are not washed at least every 72 hours they will shrink to 20% efficiency. This method also gives off small amounts of ozone.

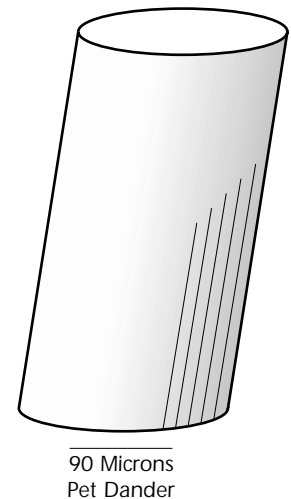
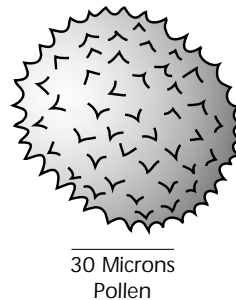
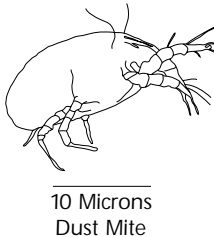
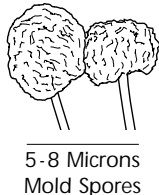
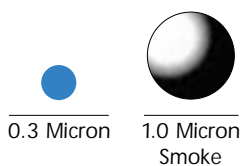
### AllerAir: using the power of activated carbon to bring you the benefits of truly clean air.

- **At AllerAir we are dedicated to bringing the benefits of clean air to our clients.** Our team will not compromise in reaching the goal of providing the best air purification technology to remove not only particles from the air but also the gases and odors that are the real source of so much respiratory distress and risk to long term health. Activated carbon, combined with HEPA filtration, is the only technology that can safely and economically clean your indoor air. It is the technology used in AllerAir air cleaners.

## How the AllerAir high efficiency air cleaning system works.

AllerAir air cleaners use a 4 phase filtering system. In the order that the air passes through them they are: the pre-filter, the mass activated carbon bed (MAC-B™) filter, the 2 anti-microbial filters and the HEPA filter.

- 1 The pre-filter traps larger dust particles and is easily removed and cleaned with a vacuum cleaner. It acts to stop the larger particles such as dust and lint from clogging the other filters.
- 2 The mass activated carbon bed (MAC-B™) filter adsorbs gases and odors. (Adsorb: no it's not a typo. This is the process by which activated carbon captures gases and odors.) Most off the shelf air cleaners have a few token ounces of carbon sprayed on the pre-filter. This is not sufficient to capture more than a small amount of the noxious gases and odors in the air and for only a short period of time. The MAC-B carbon filter has pounds of activated carbon (from 7 to 160 lbs.) that will trap 90% of gases and odors that pass over it and for many months before needing to be replaced.
- 3 The 2 anti-microbial filters kill the airborne microbes that pass through them.
- 4 The HEPA filter traps the airborne particles. These filters, which were developed by the Atomic Energy Commission to trap radio-active particles, can capture 99.97% of particles as small as 0.3 microns. That is as small as some bacteria.



## Other filtering options for special cases.

- Ultraviolet lamps are available in some models to sterilize airborne micro-organisms such as bacteria, viruses and mold.
- ULPA filters are like HEPA filters but they can trap 99.999% of particles as small as 0.01 microns.

## The importance of a metal casing to avoid plastic off gassing.

- AllerAir air cleaners are housed in a baked enamel metal casing. Unlike plastic, metal casings are completely inert and do not give off plastic vapors into the indoor air.