Shaklee™
Creating Healthier Lives™
Independent Distributor

AirSource™ Air Purification Systems For Commercial and Residential Use

Summary

Indoor Air Quality Concerns

In 1995 the Environmental Protection Agency (EPA) declared that Indoor Air Quality was the nation's **NUMBER ONE** environmental health concern.

Here are some quotes from the EPA website (www.epa.gov/iaq/pubs)

"Indoor air within homes and other buildings can be more seriously polluted than the outdoor air in the largest and most industrialized cities."

"People spend approximately 90% of their time indoors."

"Some sources, such as building materials, furnishings, and household products like air fresheners, release pollutants more or less continuously."

"Health effects could take years to develop and may include: Respiratory diseases, Heart disease, Cancer"

"Indoor air quality has a great deal to do with children's health, particularly when you're talking about asthma."

"Childhood asthma is an epidemic in this country and many parents feel helpless to protect their children from attacks."

"Poor indoor air quality can reduce a person's ability to perform specific mental tasks requiring concentration, calculation, or memory."

"Allergic reactions can range from mildly uncomfortable to life-threatening, as in a severe asthma attack."

"It is prudent to try to improve the indoor air quality in your home even if symptoms are not noticeable."

What is in the air YOU breathe?

3 Types of Indoor Air Pollution

There are three major contributors to poor indoor air quality:

1. **Airborne Microbials**
   - Molds and mold spores, fungi
   - Bacteria and Viruses

2. **Gas Phase**
   - Volatile Organic Compounds (VOCs)
     (Formaldehyde, glues, dyes, dry cleaning fluid, paints, solvents, etc.)
   - Other environmental gases
   - Odors

3. **Particulates**
   - Airborne environmental dust, 1.0 micron and smaller
   - Bacteria and viruses that attach themselves to microscopic particles
   - Dead human skin
   - Pet dander
   - Dust mite feces and other insect waste
   - Smoke (cigarette, cooking, fireplaces)
   - Pollen
   - Byproducts of business activity (nail-filings dust, sawdust)

Health issues caused or aggravated by poor indoor air quality include:

- Asthma
- Allergies
- Reduced immune function
- Chronic headaches
- Fatigue
- Reduced memory function
- Reduced cognitive function
- Cancer

What can you do about indoor air pollution?

3 Outdated Methods of Purifying Air

Passive Filters (such as HEPA filters)

- Pollutants can reach your nose before they reach the filter.
  (a VERY important disadvantage).
- Filters can be "breeding grounds" for bacteria, mold and fungi.
- Frequent and costly filter changes add up to a huge expense.
- There is no reduction of odors, gases, pesticides and many bacteria.
- Units with filters are noisier than the other technologies.
- The effectiveness of each filter decreases as particulates collect in them.

Electrostatic Precipitators

- Ionic Breeze from Sharper Image is an example.
- Consumer reports (Feb. 2002) gave this unit its lowest rating (“poor”)
  for dust and smoke, the two types of pollutants tested.
- No reduction of microbes, odors or harmful gases.
- Filters must be cleaned every 30 days.
- No reduction of particulates smaller than 1.0 micron.
  This means that 98% of all particulates remain in your air!
  These "sub-micron" particulates can become lodged deep within your lungs.
- Pollutants can reach your nose before they reach the filter

Ozone Generators

- The most common method of ozone generation is known as corona discharge.
  (It is sometimes described as “lightning in a box.”)
- Corona discharge creates nitrogen oxides that can irritate eyes, sinuses, lungs.
- Can generate electromagnetic radiation that can disturb radio and TV reception.
- Ozone generators do not reduce dust.
- Ozone often exceeds safe levels.

Shaklee's New AirSource 3000:

The Only Air Purification System That Drastically Reduces All 3 Types of Airborne Contaminants

AirSource's Photo-hydroionization Process

Beneficial superoxide ions and hydroperoxide radicals oxidize microbes and harmful chemicals. The oxidizing particles produced by the AirSource 3000 travel all over your building in search of contaminants. By destroying contaminants at their source, fewer of them can reach your lungs. (Note: Filters and electrostatic precipitators only remove what finds its way to the unit and have no effect on the source of the contamination.)

AirSource's Electron Generation System

Harmful airborne particulates "agglomerate" together and become neutrally charged causing them to drop out of your breathing space. Once they are out of your breathing space, they resist redispersal into the air.

Test Results:

After 4 hours, volatile organic compounds (VOCs) were reduced 13% - 98%.*

1,008 cubic foot testing room at Performance Analytical, Inc., a NELAP accredited lab that is certified for organic analysis by the American Industrial Hygiene Association

After 24 hours, bacteria were reduced 71% - 80%.*

Comparison of bacteria levels before and after
AirSource 3000 unit placed in 2,500-square-foot medical clinic.

After 4 days, mold was reduced 77.0% - 97.7%.*

Comparison of mold levels before and after AirSource 3000 units placed in 4 homes during which time normal activities continued

After 3 days, airborne particulates were reduced 64% - 95%*

1,008 cubic foot testing room at Performance Analytical, Inc.,
a NELAP accredited lab that is certified for organic analyses by the American Industrial Hygiene Association

Particle Size (microns)	**5.0**	**3.0**	**1.0**	**0.7**	**0.5**	**0.3**
Percent Reduction	**100.0**	**99.99**	**99.8**	**99.0**	**95.0**	**64.0**

***For more details on our testing, go to www.AirSource.com.**

Technology / Value Comparison Chart

	AirSource	HEPA Filters	Foam / Fiber Filters	Carbon Media Filters	Electrostatic Precipitator	Ozone Generators
Particulates	**All Sizes**	**All Sizes**	**Medium, Large**	**Medium, Large**	**Large Only**	**None**
Microbes (Mold, Bacteria, etc.)	**Yes**	**Some**	**Some**	**None**	**None**	**Yes**
Gases (Volatile Organic Compounds)	**Yes**	**None**	**None**	**Some**	**None**	**Yes**
Odors	**Yes**	**None**	**None**	**Some**	**None**	**Yes**
Health Risks of Unit	**None**	**Can be breeding ground for micro-organisms**	**Can be breeding ground for micro-organisms**	**Can be breeding ground for micro-organisms**	**Can be breeding ground for micro-organisms**	**Nitrogen oxides can irritate eyes, sinuses & lungs**
Noise	**Minimal**	**Loud**	**Loud**	**Loud**	**Minimal**	**Moderate**
Cost per 3,000 Square Feet	**$699 for one unit** **Replace module once per year for $69**	**$1,505 for 7 units** **Add to this the cost of 21 filters per year.**	**$900 - 1,350 Add to this the cost of expensive filters to replace frequently**	**$1,200 - 3,750 Add to this the cost of expensive filters to replace frequently**	**$2,443 for 7 units** **(and more units might be needed)**	**$660 - 1,200** **These units have a record of a high defect rate.**

…And the AirSource 3000 looks like a work of art.

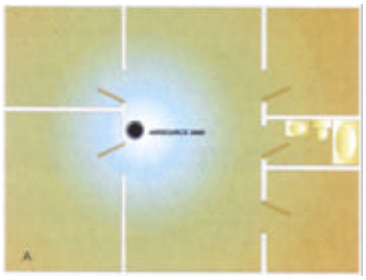
How Photoionization Purifies the Air

Advanced Oxidation Gases

The patent-pending AirSource Photoionization technology creates Advanced Oxidizers when gases brought into the AirSource 3000 react with high-intensity UV light on a trimetallic target (copper, silver and titanium).

These Advanced Oxidizers (superoxide ions and hydroperoxide radicals) contain a loosely held oxygen atom. Thus, the oxygen atoms are "available" to be released so that it will readily react with organic contaminants in the air and on surfaces causing them to break apart. The organic contaminants are broken down into very simple and safe molecules, such as water, carbon dioxide, oxygen and nitrogen.

The Advanced Oxidizers created by AirSource are considered "friendly oxidizers" because they revert back to oxygen and ultrapure water after the oxidation occurs.

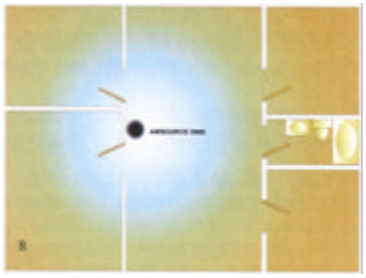


8 hours – 1 day

Dispersal Throughout the Entire Building

Diffusion of gases into your air is always occuring. For example, when you can smell coffee that is being brewed across the room, you are experiencing the results of the coffee odor diffusing. The closer you are to the brewing coffee, the stronger the odor.

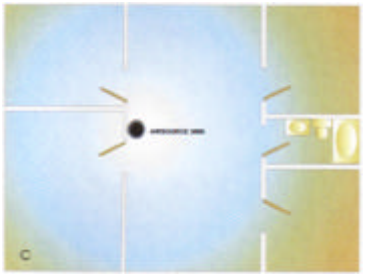
In a similar manner, the friendly oxidizers leave the AirSource 3000 and "diffuse" throughout the building. Look at the four charts on the right. As the friendly oxidizers encounter airborne organics (bacteria, mold, odors, gases, etc.), they are consumed by the oxidation reaction and revert back to oxygen and water. Over time, the gases will continue to diffuse so that they will reach the most remote corners of the home.



1 – 2 days

In addition to diffusion, air currents within the building will help to disperse the Advanced Oxidation gases. Much dispersal occurs when people walk around the building. The most rapid dispersal of the Advanced Oxidation gases occurs when the unit is placed near a return-air duct and the gases are blown throughout the building.

A clean building will permit the airborne oxidizers to travel without being completely consumed by an organic oxidation. In such a case, the building will be stabilized in 2 to 3 days. If the building is a sick building, the AirSource 3000 will require more time, perhaps a week, to produce sufficient oxidizers to treat all parts of the building.



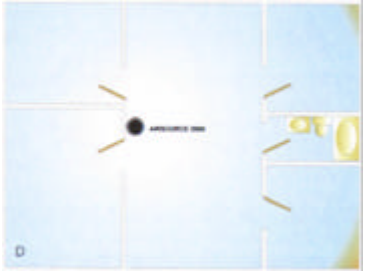
2 – 4 days

Advanced Oxidizers not consumed will be "stored" in the room as an airborne oxidizer and travel until they find an organic target. Consequently, a treated room will continue to destroy organic contaminants for days after an AirSource 3000 unit has been removed.

Passive vs. Active Air Purification

Filters and electrostatic precipitators are "passive" and only treat the air that travels through the unit. When using filters or electrostatic precipitators, you have to hope the contaminants will reach the unit before you breathe it.

The AirSource 3000 treats ALL the air and surfaces in your building that the treated air can reach. Thus, the unit is considered an "active" air purification system because it brings the remedy right to the sources of the contamination.



3 – 6 days

Electron Generation & "The Pigpen Effect"

You may remember that "Pigpen" is the kid in the Peanuts cartoon that had a cloud of dirt around him everywhere he walked.

This is not too far from what actually occurs every time you walk around your own home. The dust that has fallen to the floor gets kicked back up into your breathing space. This is because the particles are very small and may be positively charged. Positively charged particles will repel each other.

The AirSource 3000's Electron Generator takes the particulates out of the air by causing them to "agglomerate" together, that is, the small particles clump together to form larger, heavier particles. When they become heavy enough, they fall to the floor by simple gravity. These particles are neutrally charged so that they do not repel each other, allowing them to rest upon one another on the floor.

The AirSource testers demonstrated this rather vividly. They took a 10x10x10-foot room and placed an AirSource 3000 unit in the room. Next, they emptied a large bag of dirt and dust into the air and then blew it around the room with a blower (like a portable leaf-blower). As you can imagine, the dust and dirt was so thick in the air that you could not even see the other side of the room.

After 48 hours, they returned. The dust and dirt was now on the floor and the air was clear. This is good, but it gets better. They turned on the same blower and aimed it at the dust and dirt on the floor. What would you expect the dust and dirt to do then? Normally, it would fly back up into the air (just like it does every time you walk around your home on a smaller scale). Instead, they merely blew the dust and dirt along the floor like sand. Remember, the dust and dirt had agglomerated to form larger, neutrally charged particles.

The AirSource 3000's Electron Generator brings the building to "static neutral."
The means that the static shocks you normally experience when the air is dry (especially in the winter) will be virtually eliminated. Those shocks are not just annoying… they can damage your electronic equipment. You will be glad to be rid of them! Furthermore, the AirSource 3000 contains a patent-pending monitor to prevent a buildup of negative charges. This prevents the "blackwall" effect – the ugly electroplating of dust to your wall those other units can cause.

The AirSource™ 3000
"Cutaway" View

The Photo-Ionization technology is found in the top of the AirSource 3000 unit.

Photo-Ionization reaction occurs when UV light reacts with the tri-metallic catalyst.

The light rays and ozone emitted from the UV lamp react with moisture in the air and the catalyst to form superoxide ions and hydroperoxide radicals. This reaction causes:

- *Suppression of bacteria growth*
- *Suppression of mold growth*
- *Prevention of mold germination*
- *Control of odor*
- *Neutralization of VOCs*

The unique di-electric chamber located at the bottom of the unit produces an electro-static field and electrons that cause an "agglomeration" of the positively charged particles floating in the air.

These particles become neutrally charged and drop out of the air, where they can be vacuumed up.

The chamber maintains a neutral charge in the air due to the patent-pending technology (in the white box on the right) that monitors the static charge in the surrounding air. This prevents the "blackwall" effect of common electron generators.

Benefits include:

- *Reduction of airborne particulate matter, including pollen*
- *Reduction of airborne micro-organisms*
- *Neutralization of static charges*

Operation &Maintenance of the AirSource 3000

1. To operate the unit, place in a central location at least 2 feet from the floor, plug it in and turn it on.

2. Wipe off the outside of the unit with a damp cloth once per month.

3. Replace the photoionization module once a year at a cost of $69.

4. AirSource™ products carry a three-year warranty on parts and labor (and a one-year warranty on the replaceable photoionization module).

Thank you for reviewing the information about the AirSource 3000 Air Purification System.