



# Portable Air Purification System

# EOS

**At the heart of the SecureAire EOS Portable Air Purification System is SecureAire's ACTIVE Particle Control (APC), a revolutionary breakthrough in air purification. With the EOS system, every aspect of indoor air pollution is addressed: removing airborne particulates, disinfecting dangerous pathogens, and eliminating toxic VOCs (volatile organic compounds).**

ACTIVE Particle Control (APC) is based on the same particle-control technology used in semiconductor manufacturing cleanrooms, some of the most rigorously clean environments on the planet. APC has also been deployed in hospital operating rooms, greatly reducing infection rates. Now, this same advanced air purification technology is providing families with the safest, healthiest, and cleanest indoor air possible.

Research has shown that some of the smallest airborne particles can also be the most harmful. Viruses, bacteria, and VOCs are on that list. Yet the smallest particles are also the least susceptible to airflow and, due to electrostatic forces remain suspended in the air, nearly unaffected by air currents.

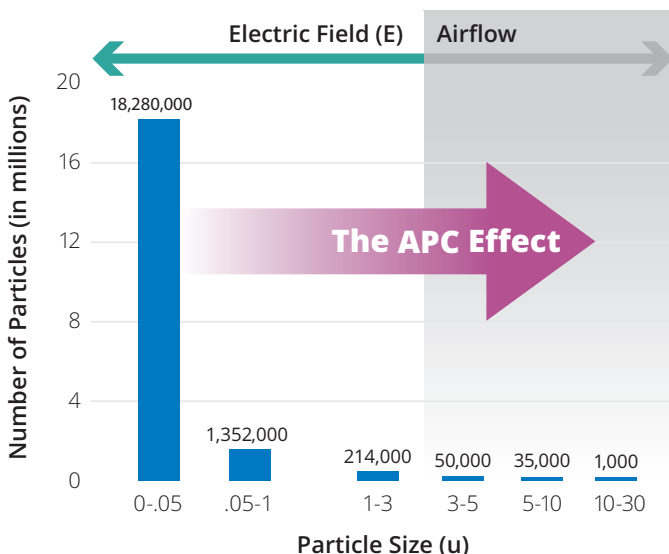
SecureAire's ACTIVE Particle Control technology conditions the smallest particles to attract to each other forming ever-larger clusters that can then be brought to the filter by air currents. Once these airborne contaminants are attracted to the filter, they are held there and can't escape. The charged media within the filtration cartridge creates oxidative cellular stress on any pathogens, rendering them harmless.

The EOS Portable Air Purification System consists of the ACTIVE Particle Control Technology System, a replaceable SecureAire filter cartridge, a quiet and powerful fan, and a variable-speed controller. This complete system can deliver up to 600 cubic feet per minute of particle-free air, enough to purify a room as large as 1000 square feet.

The EOS System utilizes all three of the essential components necessary for the highest indoor air quality:

- 1. Particle Coagulation.** In order to overcome the static effect of electromagnetic forces on small particles, Particle Coagulation creates larger particles making airflow the dominant transport mechanism.
- 2. Optimized Air Change Rate.** With particle coagulation and a quiet yet powerful fan, the EOS brings particles back to the filter for Inactivation and elimination.
- 3. High Efficiency Filtration.** Through innovative use of positive and negative charges on particles and oxidative stress, the EOS filter cartridge safely inactivates and kills 99% of all captured pathogens.

**Particle Distribution in Air**



## System Technology

**SecureAire's ACTIVE Particle Control Technology is a complete air purification system that employs a patented 4-step process to create the Safest, Healthiest and Cleanest Indoor Air Possible.**

### STEP 1: CONDITION

As particles in unfiltered air move through the SecureAire system, they are Conditioned. The Conditioner emits equal amounts of positive and negative charges, and as particles pass through, they pick up these charges.

### STEP 2: COLLISION

During the Conditioning phase, particles acquire either a positive or negative charge. The Collision step forces them to collide with each other through inelastic collisions creating ionic bonds, one of the strongest bonds in nature. Thousands of times a second, conditioned particles are forced to collide, gaining weight in the process, and becoming neutral in charge.

Due to electrostatic forces, the smallest particles remain suspended in air and are not very susceptible to airflow movement. But SecureAire's Conditioning and Collision process helps to transform small particles/pathogens into larger clusters that now have enough weight to be carried by air currents.

**The EOS is today's most advanced electrically enhanced Portable Air Purification System. SecureAire's Patented 4-Step Process is always working to create the Safest, Healthiest and Cleanest Indoor Air Possible.**

## System Specifications

Filtration Efficiency Rating	MERV 15 per ASHRAE 52.2 standard test
Air Flow Range	Up to 600 CFM
Power Supply	120 Single Phase VAC
Safety Current Protection	3.0 A/125V Fuse
Electrical Safety Ratings	UL 867: 2011 R8.13, CSA C22.2 NO. 187-09, and UL 2998
Humidity Range	<95% Non-Condensing RH
Safety Interlocks	The filter replacement panel safety switch turns the system off to accommodate a filter change.
Dimensions/Weight	Height: 16.75" Width: 12" Depth: 15.35" Weight: 22 pounds
Noise Level	45-50 dB
EOS System Part Number	APS-100X
Replacement Cartridge	APS-100X-RC

### STEP 3: CAPTURE AND INACTIVATE

Once these larger clusters of particles/pathogens are carried via airflow to the SecureAire Cartridge, they are captured and permanently held on the filter via strong ionic bonds. Within the cartridge, viable pathogens are exposed to an energy field that causes extreme oxidative cellular stress, destroying them and rendering them harmless.

### STEP 4: TRANSPORT

Finally, perhaps the most critical aspect of any air purification process is Transport. SecureAire's ACTIVE Particle Control Technology's 4-Step Process is one of the only known air purification technologies to be able to transport small and harmful airborne pathogens from a treated space.

### **The 4-Step process never stops.**

The smallest particles that escape capture are again electrically conditioned and propelled back into the treated space to further collect pathogens, TVOCs, gases, odors, bacteria, viruses, and other harmful airborne particles.

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