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FAQ's

Q1: How does an air purifier clean air?

A: Air purifier cleans the indoor air by drawing the polluted indoor air into the unit and trapping the particles, allergens and contaminates onto a filter.

Q2: What kind of filter does an air purifier use?

A: Most air purifiers use either HEPA filter or washable stainless steel/Aluminum collection cell as their filtration media. Some air purifiers also use pre-filter to increase the overall filtration efficiency.

Q3: What does HEPA mean?

A: HEPA is an acronym of High Efficient Particulate Air. Any true HEPA filter guarantees that the filter will capture airborne particles down to 0.3 microns in size, 99.97% of the time. (Particles smaller than 0.3 microns are still trapped by HEPA filters but effectiveness is reduced to less than 99.97%.)

Q4: Why should I run my air purifier continuously?

A: To be truly effective, ALL air purifiers should be run continuously. In occupied room an auto mode on through speed.

Q5: What does the CADR rating mean?

A: To clean an entire room, all of the air in the room needs to pass through the air cleaner's filter. Air cleaners are rated by the amount of air moving through the filter. This rate is called CADR or Clean Air Delivery Rate. CADR measures the amount of particle-free air being delivered into the room. The higher the CADR, the larger the room size that an air cleaner can be cleaned.

Q6: Do I have to worry about the annual operating cost of an air purifier? If the answer is Yes, How do I determine the annual operating cost of an air purifier?

A: It is very important to know the annual operating cost before you buy an air purifier. It would be expensive to operate an air purifier if the filter replacement cost is high and the unit is not energy efficient. You can determine the annual operating cost of an air purifier by adding up its annual electricity cost and the filter replacement cost.

*Annual Electricity Cost = Power Consumption of the unit (Watt) x Rate of Electricity (\$/kWh) x Hours of operation (hr)

Q7: What is the use of negative ions & ozone?

A: Negative ions are very healthy. Ozone is a harmful gas that would damage lung tissues. On the other hand, negative ions are very healthy to our body & believed to produce biochemical reactions that increase levels of the mood chemical serotonin, helping to alleviate depression, relieve stress, and boost our daytime energy.

Q8: There is a controversy over ozone?

A: Ozone and ionic air purifiers have recently received a lot of attention in the media recently due to reports showing that they may be detrimental to one's health. Ozone has been used to purify municipal water supplies for years, and for highly contaminated areas such as bars or salons, ozone can be very effective in cleaning the air.

Even though most ozone air purifiers release ozone that is well below the allowed amount as established by the government, caution should be taken if you suffer from respiratory problems, as even minute amounts ozone gas may worsen symptoms. With that in mind, if you are an allergy sufferer or asthma sufferer, look for air purifiers with HEPA filters instead.

Q9: How can ozone be dangerous?

A: Yes, but only when occurring in extremely high concentrations - much higher than what an ozonating air purifier is capable of producing. Ozone is much like any other element in that it has its range of effects. It is harmless and useful at moderate concentrations, but harmful at extremely high levels. Take table salt for example, which provides essential fortification for nerve cells and the kidneys, and prevents heat stress disorders at lower concentrations. At higher levels, though, salt can result in hypertension and cardiac failure. Electronic air purifiers will not produce ozone at a level higher than what is considered healthy in outdoor settings.

Q10: Please explain the working of negative ions and ozone?

A: Negative ions are negatively-charged electrical particles that are magnetically attracted to allergens and other airborne contaminates, which are positively-charged. The newly-formed larger particles are then able to fall harmlessly to the ground, and out of the air we breathe.

Ozone oxidizes (burns) pollutants, destroying them altogether. The ozone molecule (O₃) is highly reactive, so whenever it encounters a floating particulate, one of the oxygen atoms breaks away to oxidize the pollutant. This leaves behind O₂ (pure oxygen), refreshing the air event more. Ozone has the 2nd highest oxidation potential out of all the elements.

Q11: What happens to an ionized particle once it falls to the ground?

A: The most important thing to remember is that these microscopic pollutants are out of the air you breathe, which renders them harmless. If they are not in the air, they cannot find their way into your lungs where they do their damage. It should be pointed out that these are microscopic particles and not specks of dirt, so your floors, furniture, and other surfaces will not suddenly become "dirty" once these pollutants begin falling out the air. Fortunately, Ionic Air Purifiers produce a continual supply of negative ions and low levels of ozone, which means "kicked up" particulates will find themselves grounded again very quickly.

Q12: What are the standards of air purifier performance?

A: There are no official standards to measure an air purifier's performance at this time, and the FDA has repeatedly asked groups of experts to recommend such standards. Nonetheless, the Association of Home Appliance Manufacturers (AHAM), does conduct independent tests which measure an air purifier's Clean Air Delivery Rate, or CADR.

Q13: How CADR is Measure?

A: CADR determines how much clean air an air purifier delivers to a room, and this is measured in cubic feet per minute. Air purifiers are usually tested on their ability to remove three types of common pollutants: smoke, dust, and pollen. If an air purifier has a CADR rating, this measurement is usually found on the packaging.

Q14: Describe is a PCO air purifier and how does it work?

A: PCO is one of the newest and most advanced air purification technologies on the market today. PCO air purifiers work by using broad spectrum UV light and a titanium dioxide-based chemical catalyst to oxidize pollutants such as chemicals, gases, bacteria, and VOCs and turn these contaminants into harmless water and carbon dioxide.

Q15: Why I need an air purifier at all?

A: We inhale roughly 10,000 quarts of air every day, and this brings not only oxygen into our lungs, but also harmful pollutants. This, coupled with the fact that we spend up to 90 percent of our time indoors, makes us highly susceptible to harmful indoor particulates such as dust, dander, mold, chemicals, and even carcinogens. Exposure to these pollutants has been shown to cause a range of health problems such as allergies, asthma attacks, and damage to the respiratory system. With this in mind, investing in an air purifier can improve the health and well-being of you and your family.

Q16: How one can select an air purifier?

A: Whether you're looking for an air purifier for general air purifying or have specific air purifying concerns, in general, here are two things to consider when purchasing an air purifier

Q17: What is your purification concern?

A: For complete and thorough control of particulates such as dust, dander, and pollen, look for air purifiers utilizing HEPA filtration, as they have the ability to remove 99.97% of particulates from the air you breathe. Odor control will require the use of Activated Carbon air purifiers, and if mold is a problem, look for air purifiers featuring UV sterilization.

Q18: What is your room size?

A: Air purifiers are usually rated based on area size. Proper filtration of a specific area will require an air purifier that can handle the area's square footage. For example, if your living room is 400 Square feet, an air purifier designed for personal spaces up to 100 square feet will not be sufficient.

Also, be sure to look at the size of the particle the machine is capable of removing, cost per square foot purified, the cost replacement parts and how often they need to be replaced, electricity cost, the noise generated, warranty, physical size

Q19: What is the Indoor Air Quality (IAQ) problem?

A: The Environmental Protection Agency (EPA) themselves have declared indoor air quality as the nation's worst environmental health problem, and have also warned that indoor air is generally 2 to 10 times worse than outdoor air pollution. In addition, allergies, asthma, and hay fever are becoming much more prevalent and severe in recent years as a direct result of rapidly worsening indoor air quality.

Q20: What is the method to know if my home has an indoor air quality problem?

A: Virtually every home is affected, so yours is also most affected to one degree or another. This is especially true if your home or building was built in the last 20 years, or if it has several sources of indoor air pollution (many will probably surprise you). If you have asthma or some other respiratory condition (such as hay fever), then you are probably more sensitive to the indoor air quality problem. Also, if your home has excessive moisture or if you have a chronic leak, then you are more likely to have mold or dust mite problems.

Q21: Is it true that asthma and sinus allergies are largely a result of a bad Indoor Air Quality?

A: Asthma and sinus allergy problems took a sharp turn for the worse about 20 years ago. Not coincidentally, houses and buildings began to be constructed in an air-tight fashion at about this time in an effort to gain more energy-efficiency, as a result of the energy crisis of the 1970s. However, more and more studies are showing that this tight construction is creating an extremely unhealthy environment for breathing, by trapping pollutants indoors, while keeping natural air-cleansing agents out. We are also finding out that asthma problems are much more a results of environmental triggers than anything else, and most people spend more than 90% of their time inside, which means that indoor air pollutants affect our health far more than outdoor air pollutants.

Q22: Can you name some common sources of indoor air pollutants?

A: Dust, people, carpet, plywood and other construction materials, mattresses, furnishings, pillows, blankets, HVAC systems, household cleaning products, aerosols, insecticides, humidity, anything moist, pets, insects and other bugs, food, and cigarette smoke are all common sources for indoor air pollutants.

Q23: Please tell if an air purifier can replace the need for asthma medication?

A: No, but air purifiers can definitely help reduce the amount of medication needed by you or a family member. Many asthma medications that asthmatics take are reactive, meaning they are taken to relieve asthma attacks which are generally caused by environmental triggers. Removing environmental triggers such as airborne allergens and contaminants from the air will decrease asthma problems, therefore enabling a reduction in medication. Considering all of the side effects and financial costs imposed by asthma medications, investing in an air purifier is a good decision.

Q24: Name some common air purification methods?

A: Most air purifiers utilize common air purification technologies such as HEPA, Activated Carbon, Ionizers, and UV bulbs, and these methods are usually categorized by filter type:

- a. Mechanical Filters such as HEPA and Activated Carbon force air through a mesh that traps particles.
- b. Electronic Filters such as ionizers use electrical charged to attract and deposit allergens and irritants onto electrostatically charged plates.
- c. Hybrid Filters contain elements of both mechanical and electrostatic filters, and many air purifiers use this type of filtration method.
- d. Ozone Generators release ozone-rich gaseous plasma into the air, and this plasma alerts the chemical makeup of pollutants into harmless carbon dioxide, oxygen, and water.
- e. Gas Phase Filters remove odors and gases, but do not filter out particulates.
- f. UV Sterilization involves the use of UV light, which damages the DNA of microorganisms and bacteria.

Recent developments in air purification have also seen more air cleaners employing the use of Photocatalytic Oxidation, or PCO. By using broad spectrum UV light and titanium dioxide, PCO is an extremely powerful purification method, and PCO air purifiers can even eliminate particles as small as 0.001 microns (HEPA filters are only able to filter out pollutants as small as 0.3 microns).

Q25: What is HEPA filters and why it is so popular?

A: HEPA filters were originally developed by the Atomic Energy Commission to capture radioactive dust pollen, and by definition, a True HEPA filter must be capable of removing at least 99.97% of particulates as small as 0.3 microns such as dander, dust, and pollen. Therefore, because of their superior filtration abilities.

Q26: As some air purifiers do not have air filters, how do they clean the air?

A: Negative ion and ozone air purifiers clean the air inside the same way nature does outside, by emitting the world's most powerful and pure air-cleansing agents: negative ions and moderate amounts of ozone.

Glossary

I.A.Q.	Indoor Air Quality
E.P.A.	Environmental Protection Agency
P.C.O.	Photo Catalyst Oxidation
A.H.A.M.	Association of Home Appliance Manufacturers
C.A.D.R.	Clean Air Delivery Rate
M.C.S.	Multiple Chemical Sensitivity
M.E.R.V.	Minimum Efficiency Rating Value
C.C.F.	Cold Catalyst Filter

A.C.F. Activated Carbon Filter
U.L.P.A. Ultra Large Particulate Air Filter

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