



Articles Comparison of HEPA Filters and EGF (Enhanced Germicidal Filtration)

HEPA stands for High Efficiency Particulate Arresting. The standard for HEPA efficiency is 99.97% at .3 microns. This has become very confusing to many people in the industry, let me explain.

First you have your **True HEPA** systems ex- IQ, Austin, and Supposedly Blue Air. All these machines are indicating that their total system efficiency is 99.97 at .3 microns or better. Total system efficiency means the air coming in the machine will be 99.97% cleaner at .3 micron after it has passed through the filter apparatus, in this case the HEPA filter.

HOME DEPOT and Wal-Mart HEPA's- Your lower end machines that state **HEPA type** are indicating that they are using a HEPA type filter. HEPA Type means the filter alone may have the ability to reduce particles up to 99.97 percent but actual total system efficiency is much lower, in most cases around 50%. The cause of this is bypass around the filter, no sealing etc.

HEPA- HEPA has always been a good particulate capturing device, although there are some complications in the HEPA process. Let's take a look at TRUE HEPA SYSTEMS.

1. High air flow restriction. **HEPA** is a **very dense** paper media 99.97% at .3 micron. This is great for efficiency but can result in **poor air cleaner performance** more specifically reduced airflow. You can have the most efficient filter in the world but if you do not move enough air your air cleaner is ineffective. Many manufacturers make the claim of silent HEPA. The physics behind mechanical filtration are, if you have a dense media you need a strong motor and blower to really push the air through the filter this results in NOISE. In most cases manufacturers are not pushing enough air through their machines on low or medium and they are claiming silent or quiet. This may be the case but they are not providing proper air cleaning either. On high we can agree that TRUE HEPA systems are providing cleaner air at 99.97% at 0.3 microns the problem is they sound like they are taking off like a jet.
2. **EGF** main filter is **less dense** around 95% at 0.3 micron, but within the system the **High Energy field** raises the efficiency of the filter to 99.99% at 0.3 micron without restricting the airflow like a true HEPA. The end result is better overall system efficiency than TRUE HEPA with much **more airflow**. This can also be done much quieter because the motor and blower do not have to work as hard to push the air through the filter.
3. **HEPA**- with a dense media filter **dirt loading** of the filter can occur rather quickly. Most HEPA systems are on timers therefore not truly indicating when filters actually need to be changed. In

most cases these filters need to be changed every six months.

4. **EGF**- with a less dense media filter you can expect [4X the loading capacity of a similar sized HEPA](#). With true filter monitoring by pressure drop we can indicate when the filter has reached its maximum loading capacity. This will always ensure the consumer is receiving maximum performance from their machine.
5. **HEPA**- it has been long known that after media filters become coated they may have the tendency to create a **breeding ground for bacteria**. When moisture is built up in a filter, bacteria, viruses, and fungi have a better chance of staying alive and incubating or reproducing. This can create a very dangerous environment inside the filter media. If filters are not changed timely microorganisms may possibly breed through the filter or disperse back into the environment when changing the filter.
6. **EGF**- Enhanced Germicidal Filtration was developed by focusing on this exact issue. Two metal grids, one on the top of the filter media, and one below the filter media create 18kv of electricity. We are permeating 100% of the media filter with 18kv of electricity therefore making the filter media **uninhabitable for microorganisms** to reproduce. [Certified Test Data](#) supports 99-100% virus destruction, 98-100% bacteria destruction, 94-100% mold and fungi capture. This process ensures that Microorganisms can not breed through the filter and do not have the ability to disperse back into the environment when changing filters.