ABATEMENT TECHNOLOGIES
Technologically Advanced Air Purification Products

IMPORTANT FACTS ABOUT ANTHRAX AND HEPA FILTRATION

1. Every HEPA filter utilized in our HEPA-AIRE® products are challenged with a thermally generated test aerosol that is 0.3 microns in size is a true HEPA filter, individually tested and certified to a minimum efficiency of 99.97% @ 0.3 microns. The HEPA filters in our HEPA-CARE® TB isolation room systems are tested and certified to a minimum efficiency of 99.99% @ 0.3 microns. These filters. A 99.97% HEPA filter would therefore capture at least 9,997 out of 10,000 of the 0.3-micron particles that pass through it; a 99.99% HEPA would capture at least 9,999 out of 10,000 0.3 micron particles.

2. When evaluating products be sure that they utilize true HEPA filters, not "HEPA type" filters, which are not nearly as efficient as true HEPA filters. According to the American Lung Association, the efficiency of HEPA-type filters "may be 55% or less" at 0.3 microns. By this definition 4,500 or more out of 10,000 particles could leak through it. This is a huge difference.

3. HEPA filters capture particles by a combination of several means: diffusion, interception, and inertial impaction. A 0.3-micron particle size was selected for HEPA filter ratings primarily for two reasons. First, it is a particle size that can be uniformly generated by thermal equipment. Second, studies have shown that this size particle is very close to the "most penetrating particle size" (MPPS). HEPA filters are actually more efficient against particles between 0.1 and 0.3 microns or particles larger than 0.3 microns according to the studies.

4. The efficiency of HEPA filters against particles smaller than 0.1 microns is largely unknown, primarily because there is no current technology that can accurately generate or measure particulate matter that small. HEPA filters will capture a significant percentage of particles smaller than 0.3 microns but will provide little if any value against gas phase molecular contaminants.

5. Leakage around a HEPA filter can reduce the overall efficiency of a HEPA filtration device. Abatement Technologies HEPA filtration devices incorporate a number of design features and quality control procedures to minimize the possibility of "bypass leakage" between the HEPA filter and the filter sealing frame or disruption of this seal during shipping and handling.

6. Improper installation of a new filter or use of a substitute replacement filter can also reduce filtration efficiency. If using a HEPA filtration device for potentially hazardous airborne pollutants, in-service testing of the device is therefore recommended at the usage site (a) before putting the device into service prior to initial use, (b) whenever the filter is removed and replaced, (c) if the filter appears to be visibly damaged upon inspection, and (d) after a new HEPA filter is installed.

7. If used for applications involving potentially hazardous pollutants such as anthrax, HEPA filters and other filters removed from the device should be treated as hazardous waste.

8. Anthrax is a gram-positive rod-shaped bacterium, quite similar in size and shape to TB. Its typical size range of 1 to 1.5 microns in diameter by 4 to 10 microns in length. This would seem to indicate that the efficiency of a certified HEPA filter versus anthrax would be equal to or greater than its nominal efficiency rating, but to our knowledge this supposition has not been substantiated by efficacy testing. However, CDC did conclude that HEPA filters are an effective engineering control for tuberculosis.

9. TB is quite fragile, but anthrax spores are not. While TB can be fairly easily killed by the drying action of airflow over it when captured by filter media, Anthrax is much more hardy and can survive even after it is dried. It is therefore even more important that personnel who change filters or otherwise come in contact with the filters wear the proper respiratory equipment and protective apparel. Equipment purchasers should also take extra precautions to seal off the inlet side of the unit whenever the system is shut off to prevent any migration of anthrax spores out of the unit.

10. It is likely that properly designed HEPA filtration systems used to capture airborne spores and to create positive or negative pressure areas can significantly reduce the number of airborne anthrax spores in an indoor environment. However, Abatement Technologies, Inc. makes no specific or definitive performance claims related to anthrax.

Abatement Technologies, Inc., 605 Satellite Blvd., Suite 300, Suwanee, GA 30024
telephone (678) 889-4200, toll free (800) 634-9091, fax (678) 889-4201
http://www.abatement.com, iaqinfo@abatement.com