Life Sciences

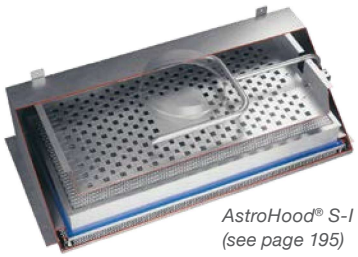
Critical Environments

Containing Dangerous Airborne Particulates

Closed filtration systems with multiple barriers ensure hazardous particulates are contained in Nuclear, Biosafety, and Biotechnology applications.

- Government
- Nuclear Power Plants
- Dept. of Energy
- Laboratory Research
- Biosafety Labs (BSL)
- Universities
- Military Facilities
- Biotechnology
- Pharmaceutical Research
- Critical Infrastructure
  - Information Technology
  - National Monuments and Icons
  - Postal/Shipping
  - Communications

Filtration Solutions



AstroHood® S-I
(see page 195)

HEGA Filters
(see page 237)

Protection from Hazardous Biological Agents, Nuclear Radiation and Infectious Pathogens

Many of the technologies that lead to vast improvements in modern living and protect our health and safety also require work in critical environments with dangerous airborne particulates. These particulates could compromise public health and safety if these facilities suffered a breach. In these environments, you need equipment that is certain to perform.

Single Source Expertise and Customization for Critical Applications

AAF Flanders specializes in the design, manufacturing, and testing of complete, custom containment filtration systems incorporating HEPA filters with maximum filtration efficiency to prevent contamination of products and people. These systems contain various combinations of fan filters units, terminal modules, and hoods for fail-safe filtration and a virtually particulate-free environment.

All AAF Flanders contaminant products are designed, developed, and manufactured to exact standards for control of dangerous, toxic, or noxious contaminants. Containment systems are extremely high-efficiency systems used to filter and contain dangerous particulate and/or gaseous contaminants. In addition to its standard systems, AAF Flanders designs, manufactures, and tests custom filtration systems. High-quality, customized total containment filtration systems made by a single source ensure maximum performance reliability in adherence with required standards for clean air.

AstroSafe®
(see page 205)

Life Sciences

Pharmaceutical

Extensive Studies Show:

- Up to **65% of energy spending** at a pharma facility is related to moving air
- **77% of production downtime** can be attributed to **failures of equipment** and **environmental problems**
- **The time it takes to address a filter leak:**
  - **Five to ten minutes** planned time for an experienced team to scan a filter
  - At least **two labor hours** unplanned downtime to remove, replace, and retest a leaking filter
- Loss from a single microglass filter leak:
  - **$250,000+/hr** (two hours of unplanned downtime)
  - **$20,000** (documentation and meetings)

  Total Cost: $520,000+
- **$3,000 to $20,000 documentation costs** associated with a **single** filter **leak**

Sources: State of the Air 2015, American Lung Association, 2015; Database of state indoor air quality laws, Environmental Law Institute, 2015

Strict Standards Require the Highest Levels of Protection

Within the pharmaceutical industry, strict requirements on air purity levels are necessary because of the direct effect that airborne contamination has on the quality of the pharmaceutical products. Anything that could come into direct contact with a pharmaceutical product is a potential risk toward contamination. Especially for aseptically prepared parenteral medicine (such as injectables and infusions), no contamination can be allowed, otherwise severe harm or life-threatening health risks to the patient can result.

The Air Inside These Facilities Can Contain:

- Molds, spores, pollens
- Carbon monoxide, radon, volatile organic compounds (VOCs)
- Bacteria, viruses, and byproducts
- Vehicle engine exhaust, exhaust from industrial plants
- Asbestos, clays, elemental particles, and man-made fibers

Balancing High Level Protection with Total Cost of Ownership

Clean air is not possible without a carefully selected and reliably functioning air filtration system. The performance of installed air filters, whether terminal filters or prefilters, directly determines how effectively harmful contaminants are prevented from entering the airstream in process environments.

Leak-free and high filtration efficiency performance of the HEPA filter is vital for ensuring that air purity is optimized, the pressure differentials between rooms are met, and healthy working conditions are achieved. At all times air in critical areas should be supplied at the terminal stage by HEPA-filtered unidirectional airflow, preceded by sequential prefiltration steps. However, if the air filter selection process does not also consider the lifetime operating costs of a given product, facilities could be exposed to unnecessary risks and expenses.

A thorough air filter audit of your HVAC Systems is the first step that AAF Flanders takes in order to provide you with professional guidance and analysis for cost savings and risk reduction. By conducting this audit, we will be able to understand your current state and then utilize TCO Diagnostic®, an advanced analytical software tool, to identify how you can improve air quality, energy savings, and operational flexibility while reducing risk and total cost of ownership.

Life Sciences

Pharmaceutical

Providing Contaminant-free Environments for Pharmaceutical Drug Compounding

Compounding pharmacies prepare personalized prescription medications from individual ingredients mixed together in the exact strength and dosage required. Compounded medications can include capsules or tablets, creams or gels, and injectables. Because the risk of infection is greater with injectables, they must be prepared according to strict standards established by the United States Pharmocopeia (USP) Chapter 797 regulations for compounding sterile products.

Based on these standards, the air in the compounding area must meet ISO Class 5 standards for clean air, which specify the number of particles permitted per cubic meter of air, to prevent microbial contamination that could cause infection in patients.

Containment air filtration systems are essential to ensuring an environment free of dangerous microbial contaminants for compounding drugs safely.

Single Source Manufacturing and Expertise in Critical Pharmaceutical Applications

Containment filtration systems are designed, developed, and manufactured to exact standards for control of microbial contamination in compounding pharmacies. High quality, customized total containment filtration systems manufactured by a single source ensure maximum performance reliability in adherence with required ISO Class 5 standards for clean air.

AAF Flanders specializes in the design, manufacturing, and testing of complete, custom containment filtration systems incorporating HEPA filters with maximum filtration efficiency for a virtually particulate-free environment to prevent contamination of compounded drugs. The systems also contain fan filters units, terminal modules, and Model 22 hoods (PharmaGel™ modules) for fail-safe filtration.

AAF Flanders' leading expertise in critical applications and single-source, total system approach ensure compliance with stringent regulatory requirements for clean air and sterility, providing an environment free of microbial contamination that could lead to serious and deadly infections in patients.

Filtration Solutions

HEPA/ULPA Filters

HEPA and ULPA filters are the most efficient air filters commercially available. They are used in cleanroom and other applications requiring ultra-clean air—semiconductor, electronics, pharmaceutical manufacturing and research. AAF Flanders HEPA and ULPA filters are individually tested before shipment to ensure they meet rated efficiency and resistance. AAF Flanders HEPA and ULPA filters are available in a variety of efficiencies—from 99.97% tested on .3 µm particles to 99.9995% and higher tested on .1 to .2 µm particles. All filters are available scan-tested.

MEGAcel® II eFRM
(see page 177)

Box Filters

These rigid, extended surface filters are ideal for use in all high efficiency applications. The supported pleat filters provide strength and integrity in high flow, turbulent, and variable airflow conditions. These filters are designed to remove airborne biological contaminants in critical areas, such as hospitals and pharmaceutical processing.

Gas-Phase Products

AAF Flanders has assumed an industry leading position with the development of its innovative SAAF product line designed to reduce or eliminate harmful gaseous contaminants. In combination with our expertise in airborne particulate filtration, SAAF products and solutions allow us to develop unique and effective total filtration solutions to protect people, processes, and equipment.

Containment Filtration

All AAF Flanders contaminant products are designed, developed, and manufactured to exact standards for control of dangerous, toxic, or noxious contaminants. Containment systems are very high quality, high efficiency systems used to filter and contain dangerous particulate and/or gaseous contaminants. In addition to manufacturing standard components, AAF Flanders specializes in the design, manufacturing, and testing of complete custom filtration systems.

Containment Systems
(see page 205)