



FilterTalk

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BIOSAFETY CABINETS KEEP RESEARCHERS ON THE SAFE SIDE

The first biosafety cabinet was built by 1905 Nobel prize-winner Dr. Robert Koch, a German scientist who used it to study anthrax, tuberculosis and cholera.

- Engineered Systems

The HEPA filter, developed during the Manhattan Project, was incorporated into biosafety cabinets in the 1940s.

- Center for Disease Control (CDC)

HEPA filters catch 99.97 percent of particles as small as 0.3 microns and most viruses and bacteria attach to hosts ranging in size from 0.5 to 5 microns.

- Engineered Systems

Hollywood has crafted a few spectacular stories about deadly diseases (1995's *Outbreak*, 1996's *The Rock*) but for some dedicated researchers, handling lethal viruses or contagious pathogens is just another day at the lab.



The technicians who work with dangerous or any highly-sensitive materials protect themselves and their research with biosafety cabinets, or BSCs. These environmentally-controlled spaces can provide clean, isolated air on orders of magnitude above what is found in a hospital surgical room. A BSC is only as valuable as its air filtration system, however, and only a few suppliers like Filtration Group have the capability to develop, produce and then re-produce them.

"In the last ten years cabinet manufacturers have offered more options for their customers so we have to supply a wide range of HEPA and ULPA filters to suit their requirements," said Gene Klingbeil, Filtration Group's market manager. "This requires a flexible manufacturing process and the ability to meet increasingly stringent product specifications."

The many types of biosafety cabinets come in three classes, each with a distinct level of protection for the worker and the substances they're handling.

- A Class I BSC looks like a chemical fume hood and simply draws the air in the cabinet away from personnel and exhausts the air through a HEPA. Not recommended for any dangerous materials.
- Class II BSCs have an inward air flow and a downward split curtain of HEPA-filtered laminar flow that protects the contents within the cabinet, and a HEPA handles the exhaust. Good for handling viruses that pose a moderate risk, such as Hepatitis B, HIV and salmonellae.
- In a Class III, the working environment is completely sealed off and personnel insert their arms into attached rubber glove ports. Supply air is drawn in through a pre-filter and a blower pushes the air through a HEPA into the workspace. The air is drawn out through double HEPA filters, safest for working with samples of a flesh-eating virus or highly contagious microorganism, this would be your work space of choice.

Labs that use BSCs should carefully consider their filter choice, explains Klingbeil. The purchasing decision should start with the manufacturer's specification along with their recommended supplier of the filters.

"There are only two filter names you'll see written into a cabinet's technical drawing, and Filtration Group is one of them," Klingbeil added. "The filter is the heart and soul of the entire system. If you pick one that doesn't meet the specs, you're compromising its performance and endangering both the specimen under review and the person studying it."

The reliability of the construction and the performance of a BSC's advanced filters keep the workers and the sensitive contents safe, so a routine assignment in the lab doesn't lead to a dramatic Hollywood ending.

NEW PARTNERSHIP LAUNCHES IN SWEDEN

Filtration Group's flexible manufacturing processes and broad range of products have enabled the company to form many U.S. partnerships and recently, it's opened doors to new opportunities overseas.



IF Luftfilter AB, a Scandinavian filtration company, was in the market for a line of high efficiency air filters and looking for a partnership with a high-quality, engineer-driven manufacturer. Founded in 1941 (one year before FGI was established), Luftfilter had steadily built itself into one of the region's leading filtration manufacturers with a strong reputation for advanced product development in air purification. Today, it is a member of Latour AB, one of Sweden's largest and most diversified corporations, producing and marketing filters for many types of HVAC applications.

A U.S.-based consultant for the air filter industry recognized the synergies of Filtration Group's manufacturing abilities and Luftfilter's European distribution. Luftfilter was seeking a new supplier for the region and Filtration Group is a global supplier seeking expansion into new markets.

Prior to this introduction Filtrair, Filtration Group's sister company, had a presence in Scandinavia and now provides Luftfilter with its synthetic filter media.

Filtration Group will supply its lines of HEPA and ULPA filters from the company's Aurora plant to the Swedish town of Alingsas, home to Luftfilter's headquarters and major manufacturing facility. Unlike Filtration Group, which works primarily through distributors, Luftfilter sells directly to its European-based customers.

"The partnership will help Luftfilter gain a stronger hold of the high purity market," said Filtration Group business manager Jan Hammarlund. "With the addition of our high efficiency products, Luftfilter should attract new customers in its market segments."

Luftfilter recently placed its first order and the shipment is scheduled for delivery in early fall. "This opens a lot of doors for both companies," said Filtration Group's CEO Larry Ost. "Filtration Group is excited to be entering a new European market and we look forward to seeing Luftfilter grow in the coming years."





GOT A QUESTION FOR US?

Q: What is a laminar flow cabinet and how does it control product contamination?

A: A laminar flow cabinet creates a particle-free working environment by taking in air through a high-efficiency filtration system and exhausting it down (vertically) or across (horizontally) a work surface in a laminar, or unidirectional, path. The filtration system consists of a pre-filter and a HEPA filter.

Because the HEPA-filtered air flowing across the cabinet work surface does not contain any airborne particles, it protects the product being evaluated from outside contamination.

The laminar flow cabinet is enclosed on the sides and kept under constant positive pressure in order to prevent the infiltration of contaminated room air, which could damage the product or specimen being examined.

Laminar flow cabinets are ideal for small projects so the researchers don't have to operate an entire cleanroom. In the laboratory, individual laminar flow cabinets are commonly used for specialized work where the elimination of airborne contamination is critical to the end results of the work processes.

- The Filtration Group Engineering Team

PRODUCT SPOTLIGHT: CHANGE MADE EASY

Filters, the good ones at least, are built to last. But some filters and their applications call for more frequent changeouts. While this can seem like an expensive hassle, it doesn't have to be.



The UltraStar Replaceable Terminal Module is one of Filtration Group's high efficiency products that is easy to replace and easy on the bank account. The module

was designed using high efficiency mini-pleated wet laid glass media. This feature provides easy installation, an optimum service life and is ideal when frequent changeouts are required.

When changeouts occur, only the filter pack is changed, not the entire module. This helps to reduce ownership costs.

And that's not the only thing this UltraStar module can reduce. Its low pressure drop design saves on energy consumption – an initiative all Filtration Group products are built to achieve. It also has an adjustable damper to create balanced and uniform airflow, which results in a longer service life.

The replaceable duct modules are designed to optimize filtration performance in any application, but are commonly found in the pharmaceutical, semiconductor, microelectronic, biotechnology and photographic industries. They have also been very successful when used in hospital operating rooms.

BETTER CUSTOMER SERVICE STEERING NEW PARTNERSHIPS



This summer, Filtrair entered into an exclusive marketing and distribution partnership with Kenosha, Wis.-based Air Flow Technology, Inc., which is now the premier distributor of Filtrair's ceiling diffusion media products used in the industrial finishing and autobody markets.

Filtrair's diffusion media is an ideal complement to Air Flow Technology's vast product lines in the company's key markets. This partnership combines the strengths of both companies and will result in a superior level of service and products for all of Air Flow Technology's customers.

"Filtrair is one of a small group of companies that is accepted by OEM automotive manufacturing facilities throughout the world," said Jay Forcucci, general manager of Filtrair. "Our work with Air Flow Technology will help expand our media into new markets."

A New Face in Canada

Filtration Group Canada and Dafco Filtration Products announced that the two companies have merged to form Dafco Filtration Group Corp.

The merger has positioned the company

as a market leader in Canada, but the real benefits belong to the customers. Dafco Filtration Group Corp. is better equipped to creatgive its customers total filtration solutions using state-of-the-art products, accompanied by expansions in engineering, product development, testing capabilities, manufacturing and distribution.

"The shape of our business is changing rapidly. This union is a logical step that combines the strengths of two of the top filter manufacturers," said Bob Assaad, president of Dafco Filtration Group Corp.

The company will focus a lot of attention on improving indoor air quality (IAQ) while reducing its customers' energy consumption and costs. "We are aware of environmental issues and strive to develop products that both reduce energy consumption and offer an increased service life, reducing waste disposal," said Larry Ost, CEO of Filtration Group, Inc.



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