# Mini Brochure

Introduction & Solutions Overview

**REDEFINING AIR FILTRATION TECHNOLOGY**

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## About GAFCO®

A leader in the development, design, production, and sale of air filters, filtration systems, cleanrooms, and laboratory equipment for a wide range of industries and applications. We bring over three decades of expertise supplying next generation air filters and solutions to HVAC, gas turbine, dust collector, and gas phase applications.

Catering to our customers' diverse requirements in the healthcare and pharmaceutical industry, we deliver revolutionary safety cabinets and cross contamination equipment, as well as design, consult, and execute sophisticated cleanroom projects ensuring compliance with stringent international and environmental standards in over 30 countries.

We're proud to have achieved the internationally recognized ISO 9001, ISO 18001, and ISO 22000 certifications for our overall performance in quality, supply chain management, customer service, occupational health and process safety. GAFCO is an associate member of the National Air Filtration Association and promotes sustainable LEED projects as a member of the US Green Building Council (USGBC).

We posses state-of-the-art testing equipment and production machinery, utilize the finest raw materials leading world manufacturers have to offer, and employ certified specialists in the field of air filtration and cleanroom technology at the forefront of advancements in indoor air quality and environmental sustainability.



## GAFCO® Milestones

**1990**

### The Fire Tragedy

Incurred severe asset losses in a tragic fire accident, the production facility was rebuilt.

**2005**

### GAFCO Established

Delivered HVAC air filters to meet both regional and global filtration standards.

**2008**

### Expanding Solutions

Established the production of HEPA & ULPA filters, air purifiers, and fan filter units.

**2010**

### Change in Direction

Change the strategy and value creation, the new face of the brand was born.

**2014**

### New Industries

Established the production of dust collector filters and patent aluminum filter media.

**2017**

### Everything Cleanroom

Launching clean-room construction division & awarded mega cleanroom projects.

**2020**

### Digital Transformation

The launch of a mega digital transformation project built around our customer needs.

**2023**

### Further Expansions

Launch the production of gas turbine filters, clean benches and bio safety cabinets.

## Company Profile

**1990**
Founded

**34**
Years of experience

**Saudi Arabia**
Headquarters

**30 +**
Countries Served

**250 +**
Employees

**225**
Products

**24**
Recognitions

**15**
Nationalities

**12,000**
SQM Factory

**14,020**
SKU's

**12**
Distributors

**10,000 +**
Filters / Day

## Contaminants Eliminated

Particulates

Molecules

Grease

Fumes

## Certifications

ISO 18001 CERTIFIED

ISO 9001 CERTIFIED

ISO 22000 CERTIFIED

RoHS COMPLIANT CERTIFIED

NAFA National Air Filtration Association ASSOCIATE MEMBER

UL CERTIFIED

## Our Difference



### Real World Testing

Continuously advancing our testing capabilities and refining our performance measurement capabilities to deliver filtration solutions that are safe, effective, and reliable in the real world.



### Our Suppliers . Our Success

Our products are only as good as are our inputs. We strive to work with suppliers who are not only capable but also motivated towards continuous improvement.



### Performance by Design

Intelligence made visible, we design things to be functional, not necessarily understood. Keeping customer needs and user experience at the core of our innovations throughout the process.



### Continues Improvement

Continuously engaging in R&D programs in collaboration with institutions and universities, we develop and demonstrate interoperability and functionality in real world scenario settings.





### Value Born in Supply Chain

We connect customer challenges with solutions from our best-in-class suppliers utilizing the finest raw materials, components, and machinery leading world manufacturers have to offer.



### Precision and Consistency

While maintaining velocity, we tailor solutions for our customers amidst rapid transitions in technology as well as local and global regulatory compliance requirements.



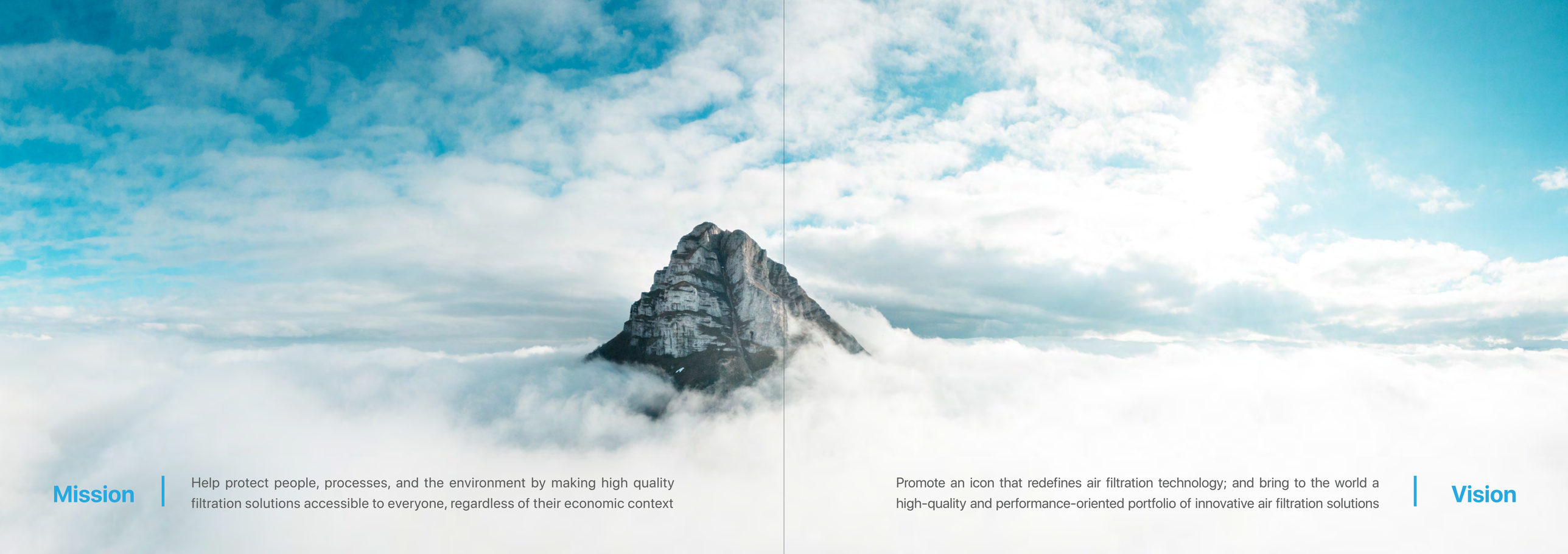
### Certified & Vetted

An extensive set of quality tools shape our processes assuring maximum production efficiency, don't just take our word for it — We're ISO 2009, ISO 18001, and ISO 22000 certified.



### Benchmarking

The fundamental understanding of product performance, application use, and functional requirements based on market research and laboratory testing sets our underlying definition of quality.



## Mission

Help protect people, processes, and the environment by making high quality filtration solutions accessible to everyone, regardless of their economic context

## Vision

Promote an icon that redefines air filtration technology; and bring to the world a high-quality and performance-oriented portfolio of innovative air filtration solutions

## Industries Served



Residential



Commercial



Industrial



Offices & Buildings



Shopping Centers



Schools & Universities



Life Sciences



Museums



Train Stations



Air Ports



Hospitals & Healthcare



Bio-Safety Cabinets



Laboratories



Clean Rooms



Food & Beverage



Paint Booths



Cabins



Gas Phase



Gas Turbine



Micro Electronics



Military Equipment



Telecom Systems



Nuclear Power



High Temperature

## Indoor Air Quality

Understanding the source of indoor contaminants is important yet taking control of your IAQ will help you resolve or prevent health problems for people, process, and the environment we all share.

And whilst symptoms of poor indoor air quality may be less obvious in the short term, they are evolving in the form of chronic health effects which are only realized years after exposure to poor indoor air quality has occurred or after long or repeated periods of exposure, such as respiratory diseases, heart disease, and even cancer. Although, lager dust particles (3 microns and bigger) settle rapidly, smaller dust particles less than 0.1 microns behave like gases and have negligible settling velocities. Those who suffer from breathing problems like asthma and allergies truly appreciate the impact of indoor air quality ... The same holds true for the rest of us, it's just less obvious because it takes longer for the negative effects to manifest.

We encourage customers, stakeholders, suppliers, and interested parties to reach out to us or schedule a site visit for a closer look at our production capabilities and our most recent developments in air filtration, capabilities, and the contribution we make to indoor and outdoor air quality across a wide range of applications and industries.



## Loss of Life Expectancy

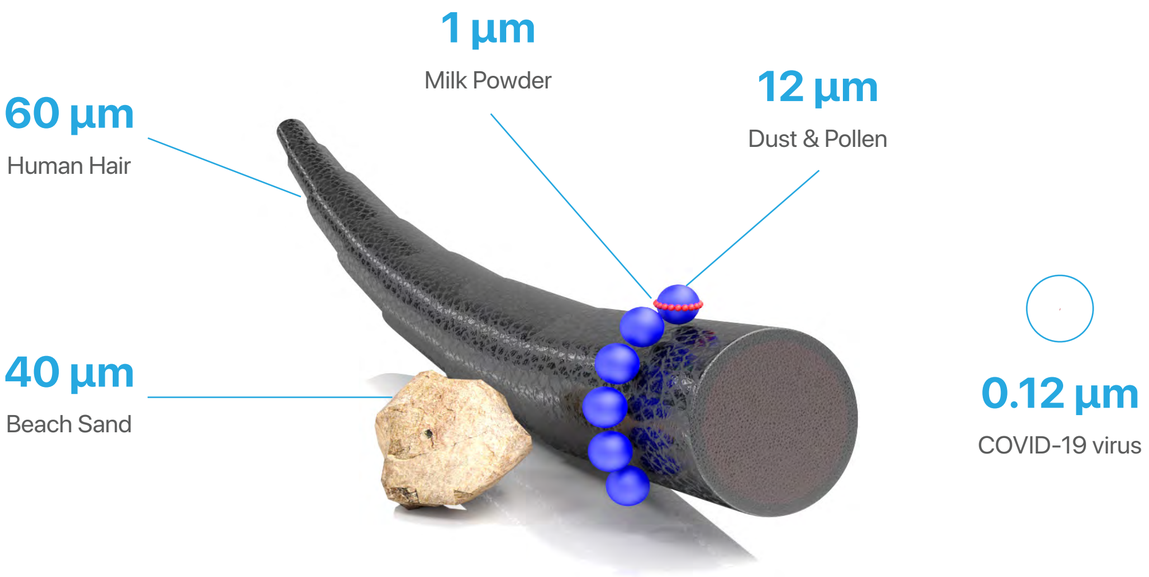
Ambient air pollution is a global threat that has caused a Loss of Life Expectancy LLE to drop by 2.9 years, where the global mean LLE from air pollution vastly exceeds of violence (0.3 years) and rivals that of tobacco smoking (3.0 years).

According to the EPA, the levels of indoor air pollutants are often 2 to 5 times higher than outdoor levels, where on average, humans spend 85% of their time indoors, this made IAQ a crucial area in scientific research due to the broad range of effects such sick building syndrome where building occupants experience acute health and discomfort effects that appear to be linked to time spent indoors, without being exposed to a specific illness a clear cause could not be identified. Buildings suffering from poor IAQ introduce occupants that complain of symptoms associated with acute discomfort, such as, headache, eye, nose, or throat irritation, dry cough, dry or itchy skin, dizziness and nausea, difficulty in concentrating, fatigue, and sensitivity to odors where the root cause of these symptoms is not known, reports claim relief soon after leaving a building.

Indoor environments are highly complex, we are often exposed to a variety of contaminants such as printing machines, cleaning products, construction activities, carpets and furnishings, perfumes, cigarette smoke, as well as a wide range of outdoor pollutants and gases including carbon monoxide, radon, volatile organic compounds, particulates, microbial contaminants such as mold and bacteria.

## Particle Sizes

Research indicates that the COVID-19 virus has a particle diameter of approximately 0.12 microns, where is most testing confirms that it falls within the range of 0.08 and 0.15 microns.  To put this size into prospective, the average human eye cannot see particles smaller than 50 microns in diameter! The info graphic presents the proportional size of a number of common particulates in relation to the COVID-19 virus.






## Particle Behavior

**Particle Shedding Rate per Activity**

| Type of Activity | 0.5 µm / Per minute |
|---|---|
| Sitting without moving | 100,000 |
| Moving hands, arms, head | 500,000 |
| Active hand/arm movement | 1,000,000 |
| Standing up from a sitting position | 2,500,000 |
| Rapid movement, climbing stairs, etc. | 110,000,000 |

**Particle Settling Velocities**

| Particle Size (µm) | Settling Velocity |
|---|---|
| 100 | 60 feet per minute |
| 50 | 15 feet per minute |
| 10 | 7 inches per minute |
| 5 | 2.5 inches per minute |
| 1 | 5 inches per hour |
| 0.5 | 1.5 inches per hour |
| 0.1 | 1 inch per day |
| < 0.1 | Negligible (may or may not settle) |

There are many potential sources of contamination in a clean room, however, the number one source of contamination is people!  Entering a cleanroom, personnel immediately impact the level of cleanliness, the human body releases particles into the surrounding environment rapidly, and the particle shedding rate increases as the level of activity increases, as such, human activity is monitored and solutions are offered to enhance control over the cleanroom environment once the target cleanness levels (target cleanroom class) has been met.

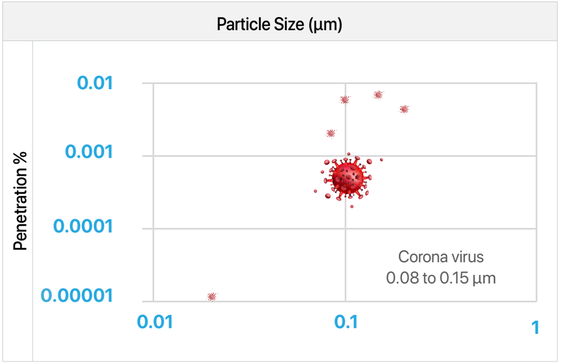
Another important consideration is particle size, large dust particles (PM10) such as coarser dust and organic particles settle quite rapidly. Smaller dust particles (PM2.5) such as pollen, spoors and other organic particles tend to stay suspended in the air or settle slowly. Fine dust particles (PM1 or smaller) such as smoke, bacteria and viruses behave like gases and have no rate of fall but are affected by motion. Particles in the range of 0.1 to 1.0 microns have negligible settling velocities and are considered harmful often causing adverse health effects.

## Filter vs. Virus

Research indicates that viruses that have been identified and isolated can range in diameter from 0.02µm to as large as 0.5 µm. The COVID-19 virus has a particle size ranges between 0.08 and 0.15 microns. Particles in this range can have negligible settling velocities and behave more like gases. In order for high efficiency filters (such as HEPA filters) to be effective, they have to be accurately selected, installed and maintained in appropriate systems, proper air distribution within a space plays a significant role in air treatment and quality of filtration.

Can HEPA filters trap the Corona-virus? Given the filters are operated at the manufacturer's recommended face velocity, the collection efficiency of an H13 HEPA filter exceeds 99.95% at the COVID-19 virus particle! In a study concerning the use of HEPA filtered air cleaners to prevent the spread of COVID-19, virus capture ratios exceeded 99.97% at repeatedly high ventilation volumes. The table below demonstrates the penetration of a HEPA filter at a range of particle sizes from 0.01 to 0.5 µm, unsurprisingly, HEPA filters are very efficient at particles smaller than 0.08 µm.

**HEPA Filter vs. COVID-19 Particle Size Penetration**

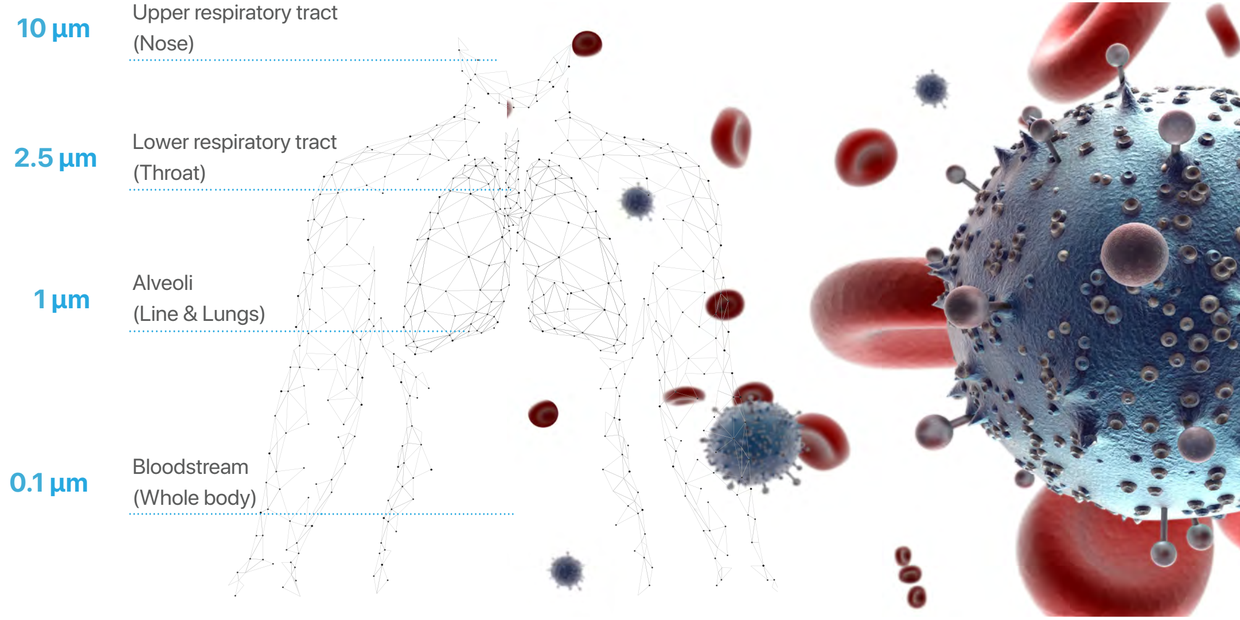



**HEPA Filter Efficiency vs. Particle Size**

| Size (µm) | Penetration (%) | Efficiency (%) |
|---|---|---|
| 0.01 | 0.000123 | 99.999877 |
| 0.08 | 0.020489 | 99.979511 |
| 0.10 | 0.029236 | 99.970764 |
| 0.15 | 0.028177 | 99.971823 |
| 0.20 | 0.0.16066 | 99.983934 |
| 0.30 | 0.000935 | 99.999065 |
| 0.40 | 0.000016 | 99.999984 |
| 0.50 | 0.000001 | 99.999999 |



## Particles & Respiratory System



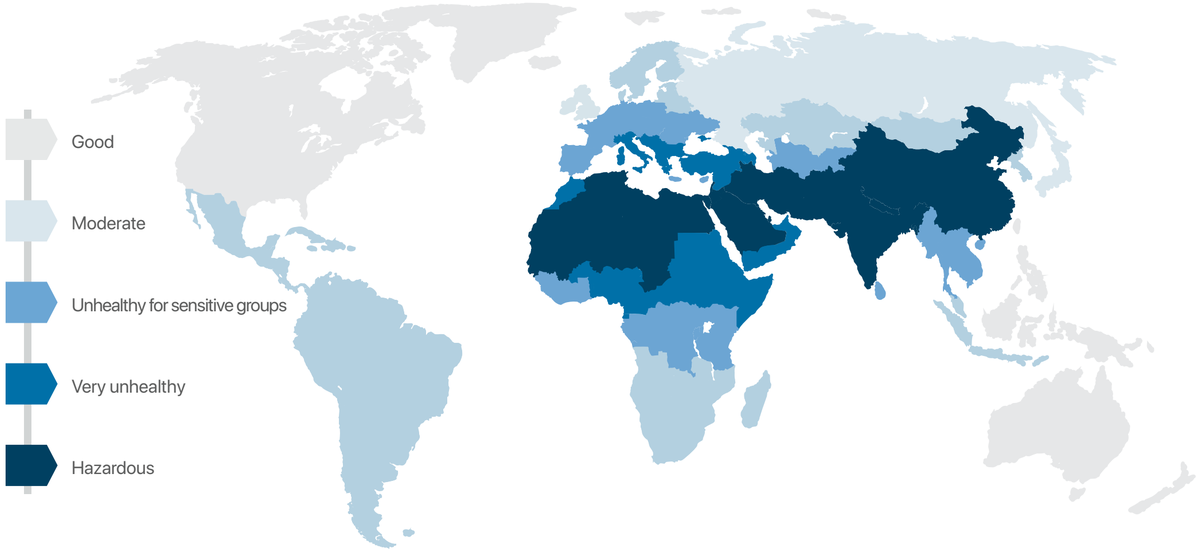

Particles enter the human body through the nose and mouth as we breath, and whilst the human body eliminates most large particles we inhale (typically in the nasal cavity), particulates smaller than 1 micron continue to penetrate deep into the lung and even get into the bloodstream posing great health risks and often causing serious breathing problems. The smaller the particle (<PM1.0), the more dangerous they can be to the function of our respiratory system.



## IAQ

People with respiratory issues, such as asthma and allergies, truly value indoor air quality. Likewise, even those who don't have such conditions stand to benefit, although this effect may not be immediately apparent as it takes a while for the negative effects to become evident.

## Atmospheric Pollution



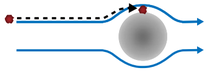

92% of humans on earth breath unsafe air. The above graph shows how severe is the problem across continents. The World Health Organization has charted large parts with dark red, which plots areas with more than 70 particulate matters (PM) that are smaller than 2.5 micrometers in the air indicating higher concentration of particulate matters in the air.

The PM2.5 pollutants, which come from dust and smoke, can penetrate deep into the lungs and increase the risk of heart and lung diseases including asthma and lung cancer. Air pollution is a major cause of disease and deaths, killing more than 7 million people annually, and dropping the global Loss of Life Expectency (LLE) mean by 2.9 years.

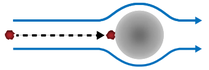


## Filtration Mechanisms

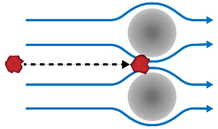
In air filtration, there are five mechanisms in which particles are filtered from the air by the filtering medium, each mechanism has a specific particle size range where it is the dominant factor at filtering particles. Interception and inertial impaction are the dominant mechanism for particles greater than 0.2 µm, diffusion is most effective for particles that are less than 0.2 µm, where is electrostatic attraction is found generally effective at particles smaller than 0.4 µm.



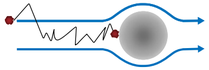
**Interception**
Occurs when the inertia of a particle is not strong enough to continue in a straight line. The particle follows the air stream around the fiber until it makes contact with it and becomes attached. Interception is the only mechanism that is not affected by air velocity and important in removing bacteria.



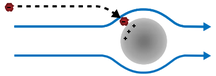
**Inertial Impaction**
Occurs when large particles with a mass and certain speed travel in a straight line or continuous direction. This mechanism shows that these particles cannot follow the stream line around the fiber and collide with the fiber instead.



**Straining**
Occurs when the particle diameter is bigger than the opening between the media members (fiber, metal, mesh, etc.). In this case, particles retain on the fiber and con not pass through the gap between the two media fibers.



**Diffusion**
The random movement of particles cause that particle to contact the fiber (Brownian movement or motion). The smaller the particles, the greater the diffusion effect. The more time the particle has in the “capture zone”, the greater the chance of capture. This mechanism is the most difficult to imagine or explain. It is also important for virus removal.



**Electrostatic**
In this mechanism, particles and fibers are both electrically charged. Particles are attracted to the fiber by electrical forces. These fibers get charged during production. Filters lose their electrostatic charge by time because of the particles captured on the surface of the fiber.

**Our suppliers are the backbone of our**

# DISTINCTIVE VALUE PROPOSITION

**And the key to our success!**

Our quest for quality and specific performance objectives effectively limit the number of suppliers that can meet our requirements.  We strive to work with suppliers who are not only capable but also motivated towards continues improvement, ensuring our strict performance benchmarks are consistently met.





## Conditional Performance Testing

An automated filter scanning test rig AFS 150 is designed to meet the strict requirements of filter testing according to EN1822-4 (Leakage Test/Filter Scan) and EN 1822-5 (Integral Separation Efficiency Test) and ISO 29463-4/-5) with high levels of automation, delivering air flow, resistance, penetration distribution, and efficiency at MPPS of EPA, HEPA, and ULPA filters.



## Automated Efficiency Scanning

With flow rates ranging from 200 to 5000 $m^3/h$ (face velocities up to 750 FPM), filters of various dimensions from 305 x 305 up to 1220 x 1830 mm can be mounted and tested using 2 head scanners downstream and diluter upstream the filter bank, all functions of the test rig are controlled by PC, test results such as air flow, velocity, efficiency, leakage, temperature, humidity, and resistance are recorded and verified to strict benchmarks.







## Controlled Mini Pleating Spacing Technology

The heart of any filter manufacture is their pleating equipment. GAFCO utilizes state of the art pleating machinery featuring motorized pleat gathering stations, electronically controlled variable pleat height stabilizer for all pleat heights from 12 mm up to 280 mm, a programmable database aids save the pleating requirement of each customer, sales order, and batch. A hot-melt device works with foam melt or solid hot melt to maximize filter surface area.



## Reproducible Quality Sealing System

The automated CNC gasketing and gel sealing machine records all parameters, configurations, mixing ratios, material and process data ensuring the reproducibility of high quality gel and gasket seals. High acceleration, narrow turning circles and fluid movements over long contours, the dynamic 3-axis linear robots are characterized with high accuracy and acceleration over a very large working area presenting an extremely precise fluid motion essential for high efficiency filtration.



## Achieving Excellence

Through customer involvement, performance benchmarking, technology utilization, continuous improvement, and life cycle analysis.

**OPTIMIZING TOTAL COST OF OWNERSHIP**

## Cleanrooms by Definition

A cleanroom is an enclosed space in which airborne particulates, contaminants, and pollutants are kept within strict limits. They are used when it is necessary to ensure an environment free of bacteria or viruses. A cleanroom provides a controlled, isolated environment for handling contamination-sensitive substances or for protecting the exterior environment from dangerous substances in the controlled area.

HEPA/ULPA filters are designed for applications requiring ultra clean environments, every filter made is assembled, finished, inspected, individually tested and serial numbered by skilled, trained, and experienced craftsmen and systems. A key component in any cleanroom or zone is the HEPA / ULPA filter that is used to trap particles at the MPPS micron range to meet the strict requirements of ISO 14644-1, EU GMP, or FED 209.



Cleanrooms vary in size and complexity, and are used in industries such as pharmaceuticals, biotech, medical device and life sciences. The density of sub-micron and larger airborne particle contamination inside a cleanroom is kept within tightly controlled limits by forcing filtered clean air into the cleanroom. Cleanrooms controls this dispersion and allows manufacturing to be carried out in a clean environment.

Contaminants are generated continuously by people, processes, facility systems and equipment and therefore must be continuously removed from the cleanroom space. The allowable level of contamination is dictated by specifications for the operations being performed. Particle counts are taken live or periodically to ensure the room meets the target cleanness levels it was designed to meet, our certified specialists can assist validate your facility and certify it meets any standard.



## Cleanroom Standards

**Cleanroom Standards**

| Class | Maximum Particles / $m^3$ | | | | | | |
|---|---|---|---|---|---|---|---|
| | ≥ 0.1 µm | ≥ 0.2 µm | ≥ 0.3 µm | ≥ 0.5 µm | ≥ 1 µm | ≥ 5 µm | FED STD 209E equivalent |
| ISO 1 | 10 | 2.37 | 1.02 | 0.35 | 0.083 | 0.0029 | - |
| ISO 2 | 100 | 23.7 | 10.2 | 3.5 | 0.83 | 0.029 | - |
| ISO 3 | 1,000 | 237 | 102 | 35 | 8.3 | 0.29 | Class 1 |
| ISO 4 | 10,000 | 2,370 | 1,020 | 352 | 83 | 2.9 | Class 10 |
| ISO 5 | 100,000 | 23,700 | 10,200 | 3,520 | 832 | 29 | Class 100 |
| ISO 6 | $1.0 \times 10^6$ | 237,000 | 102,000 | 35,200 | 8,320 | 293 | Class 1,00 |
| ISO 7 | $1.0 \times 10^7$ | $2.37 \times 10^6$ | 1,020,000 | 352,000 | 83,200 | 2,930 | Class 10,000 |
| ISO 8 | $1.0 \times 10^8$ | $2.37 \times 10^7$ | $1.02 \times 10^7$ | 3,520,000 | 832,000 | 29,300 | Class 100,000 |
| ISO 9 | $1.0 \times 10^9$ | $2.37 \times 10^8$ | $1.02 \times 10^8$ | 35,200,0000 | 8,320,000 | 293,000 | Room Air |

A facility, zone, or room designated as a cleanroom should be filtered to ensure the removal of particles and contaminants. Most pharmaceutical facilities use HEPA and ULPA filters to remove the micro-organisms and particles in the supply air. High efficiency filters having a minimum particle collection efficiency of 99.95% @ MPPS (0.1 to 0.4 µm) are essential for capturing viruses and are more resistance to airflow. These filters are usually constructed in two ways: deep-pleated or mini pleat technologies.

HEPA and ULPA filters are considered the most efficient air filters. These filters are tested before shipment to ensure they meet very specific standards as well as efficiency and resistance benchmarks. GAFCO offers HEPA and ULPA filters in efficiencies from of 99.95% (H13) to 99.999995% (U17). Offered in a wide range of designs, configurations, and sizes to meet the application and process requirements of the facility as well as the production regulating standards governing of the pharma industry.

## Cleanroom Design & Construction



### Cleanroom Design

GAFCO built cleanrooms are designed to maintain specific parameters such as flow pattern, humidity, pressure, air change requirements to a specific cleanroom class preventing airborne contaminants from harming your processes. Cleanroom design and construction is managed by a specialized team that first understands the process and application at hand before attempting to propose your road map towards operational success.



### Cleanroom Construction

Cleanrooms are constructed from walls prefabricated at our facility to accommodate any cleanroom size or finish requirement. Aluminum honeycomb panels are the most popular cleanroom structure used because they are non non-particle shedding, both anti-static, and antibacterial. Reinforced stainless steel or extruded aluminum frames are produced to very high tolerances to ensure a safe, reliable, and maintenance free cleanroom operation.



## Cleanroom Certification & Validation



### CleanRoom Certification

Cleanroom testing and certification services are executed in accordance with EU GMP, FED 209, or ISO 14644-1. Cleanroom testing results are thoroughly analyzed, quality reviewed, and documented, specific test protocols and reporting procedures may be customized to customer specifications. The most technologically advanced equipment and measurement tools allows for the certification of any class or size cleanroom quickly and accurately.



### Filter Integrity Testing

HEPA/ULPA filters are the heart of any cleanroom and play a critical role in maintaining a contamination free environment. Our certified team of specialists provide fast and dependable mobile HEPA/ULPA filter integrity testing on site, alternatively filters can also be brought to our manufacturing facility for testing. Once tested, a performance certificate will be issued for each unit, verifying the efficiency of the filters in operation.

| Cleanroom Design | |
|---|---|
| Cleanliness classification 2 | Air changes per hour |
| ISO CLASS 9 ( 1000,000 ) | 5 - 15 |
| ISO CLASS 8 ( 100,000 ) | 5 - 30 |
| ISO CLASS 7 ( 10,000 ) | 30 - 60 |
| ISO CLASS 6 ( 1,000 ) | 125 - 240 |
| ISO CLASS 5 ( 100 ) | 240 - 480 |
| ISO CLASS 4 ( 10 ) | 300 - 540 |
| ISO CLASS 3 ( 1 ) | 360 - 540 |
| ISO CLASS 2 | 360 - 600 |
| ISO CLASS 1 | 500 - 700 |

This table relates cleanliness class to both the average air velocity in the cleanroom and rate of air changes per hour. The range of values listed is a consensus of existing practices and is not intended to indicate design. It is up to the designer and end user to arrive at a value either inside or outside the range that is consistent with project needs. You may consult your GAFCO sales representative to work out the best selection for your criteria.

| Filter Efficiencies | |
|---|---|
| Cleanliness Class | Filter Efficiency |
| Class 1 | 99.999995% @ MPPS |
| Class 2 | 99.999995% @ MPPS |
| Class 3 | 99.99995% @ MPPS |
| Class 4 | 99.9995% @ MPPS |
| Class 5 | 99.995% @ MPPS |
| Class 6 | 99.995% @ MPPS |
| Class 7 | 99.95% @ MPPS |
| Class 8 | 99.95% @ MPPS |
| Class 9 | 99.95% @ MPPS |

Air filter selection is a critical aspect of meeting your indoor air quality requirements, the lower end of the range is more appropriate for cleaner processes and a more disciplined cleanroom gowning procedure. Cleanliness classifications in parenthesis refer to the former FED STD 209E classifications. Airflow patterns listed represents the more common airflow characteristics for cleanrooms of that class which varies by application.





| Air Returns | |
|---|---|
| Cleanliness Class | Air Return Design |
| Class 1 | Raised Floor |
| Class 2 | Raised Floor |
| Class 3 | Raised Floor |
| Class 4 | Raised Floor |
| Class 5 | Low Wall Long Axis |
| Class 6 | Low Wall |
| Class 7 | Low Wall or Ceiling |
| Class 8 | Low Wall or Ceiling |
| Class 9 | Low Wall or Ceiling |

Achieving the optimal air change rate requires proper ceiling filtration coverage, especially in large cleanrooms, while this can lead to higher energy consumption and increased costs of both initial construction and ongoing operation. Proper cleanroom design can deliver a smaller percentage of ceiling coverage with adequate cleanliness and air change rates, and while higher air velocities results in a cleaner cleanroom. Before deciding on

| Filtered Ceiling Coverage | |
|---|---|
| Cleanliness Class | Number of Filters |
| Class 1 | 100% Ceiling Coverage |
| Class 2 | 100% Ceiling Coverage |
| Class 3 | 100% Ceiling Coverage |
| Class 4 | 100% Ceiling Coverage |
| Class 5 | 100% Ceiling Coverage |
| Class 6 | 20 - 60% Ceiling Coverage |
| Class 7 | 5 - 40% Ceiling Coverage |
| Class 8 | 5% Remote Filter Bank |
| Class 9 | 5% Remote Filter Bank |

The appropriate velocity and air changes for your application, careful evaluation is recommended of factors affecting your level of cleanness during operation, such as number of personnel, access frequency, air source, quality and number of pre-filtration stages. For assistant conducting a thorough survey and assessment of your requirements, consult our technical teams dedicated to work out the best selection for your criteria.

## Percision & Consistency

# WHILE MAINTAINING VELOCITY

The fundamental understanding of product performance, application use, and functional needs based on market research and laboratory testing sets of our underlying definition of quality for every product we design and deliver.



## Quality Assurance

Assuring quality of inputs at every stage of the production process. QC teams overlook a defined set of parameters across every activity where an associated system-based feedback loop achieves total error prevention and early detection procedures reduce waste in time and resources.

Quality across every element and sub assembly of the production process is monitored and quality benchmarks applied to physical products in post-production stages by validating lot samples to verify features and functionality meet the specifications and requirements of our clients on case-by-case basis.

Our quality assurance practices incorporate a multitude of parameters, such as target efficiency, resistance, dust-holding capacity, life cycle analysis, total cost of ownership, and consistency of design and performance to strict engineering tolerances.

Statistical process control is used to command production processes through the use of control charts, stratification, histograms, and in-process data collection of inputs and outputs at various stages of the production process, we detect variations or trends in quality early in the process assuring nothing is left to chance.

GAFCO teams focus on enhancing the operational efficiency and effectiveness of our manufacturing base and processes, advancing our technology by refining our testing capabilities and performance measurements for our solutions to surpass global standards, and more importantly, our strict performance benchmarks.




## Quality Control

Our quest for quality and specific performance objectives effectively limit the number of suppliers that can meet our requirements.  Born in supply chain, our products can only be as good as their inputs.

The fundamental understanding of product performance, application use, and functional requirements based on market research and laboratory testing sets our underlying definition of quality for every product we deliver.

The capacity to supply the requisite volumes or price is not the primary criterion. Thus begins a comprehensive sourcing and qualifying process, audits, assessments, and comprehensive testing programs before approvals of design, performance, or reliability are granted to potential successful vendors.

Suppliers are the backbone of GAFCO's distinctive value proposition, we strive to work with suppliers who are not only capable but also motivated towards continuous improvement, ensuring our stringent performance benchmarks are consistently met.

We promote international standards by conducting comprehensive research for the development of new filtration solutions, proactively utilizing innovative methods to represent real world settings and testing scenarios.

Advancing hyper-automation, we endeavor to produce as little waste as possible and preserve resources to transfer benefits of our operational efficiency to our valued customers, and the communities we serve and love.

# Solutions in Rapid Transitions

Tailoring solutions for our customers amidst rapid transitions in technology as well as regulatory compliance requirements, we connect customer challenges with solutions from our best-in-class suppliers utilizing the finest raw materials and equipment leading world manufacturers have to offer.



## Hands on Training

GAFCO offers a wide range of training courses in a vast range of topics, each developed to share the accumulated knowledge of our experts and organization in the field of particulate and gas phase filtration science and practices, including cleanroom design, construction, and maintenance, bio-safety cabinets, filter and system selections, standards and compliance. Our faculty delivers a great training experience at our production facility in 2nd industrial city of Riyadh, Saudi Arabia.

We are delighted to invite individuals and interested parties as part of GAFCO's Success Partners Program. The Success Partner Program is designed to demonstrate our gratitude towards our clients, suppliers, and the society and contribute to their understanding and awareness of indoor air quality and recent contributions in air filtration science among key decision makers.



## Factory Tours

As one of few Asia's leading manufacturers, we are delighted to invite interested parties for a guided tour around our production facilities. We encourage customers, stakeholders, suppliers, and partners to schedule a factory visit by filling our on-line form for a closer look at our production capabilities and most recent developments for a better understanding of our business philosophy, the range of products and solutions we deliver, and the contribution we make to advance air quality across a wide range of applications both locally and globally.

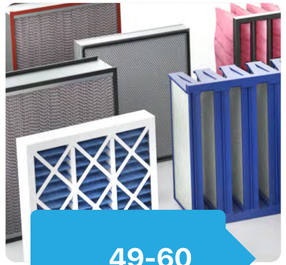
Company visits are conducted Saturday to Thursday. Evening tours can be arranged on request. Your tour may include visits to one or two production plants, all tours start at production plant 1. If you arrive by car, please park in the parking lot in the guests designated area.

## We foster an atmosphere of cohesion

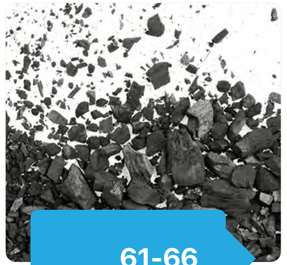
Boosting innovation to supply reliable high performance solutions

**ADDRESSING REAL WORLD CUSTOMER PROBLEMS!**





49-60 HVAC Filters



61-66 Gas Phase Filters



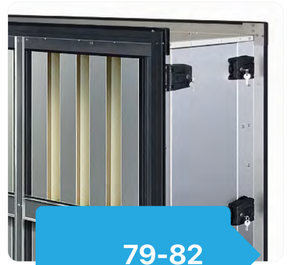
67-70 Gas Turbine Filters



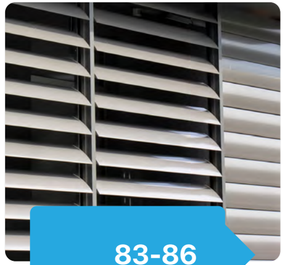
71-74 Dust Collector Filters



75-78 Modules



79-82 Housings



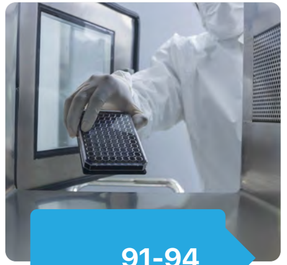
83-86 Air Intakes



87-90 FFU's & Purifiers







91-94 Cross Contamination



95-98 Laboratory Equipment



99-102 Aerosol collectors



103-106 Cleanrooms



107-110 Kitchens



111-114 Smoking Rooms



115-118 Industrial Air Cleaners

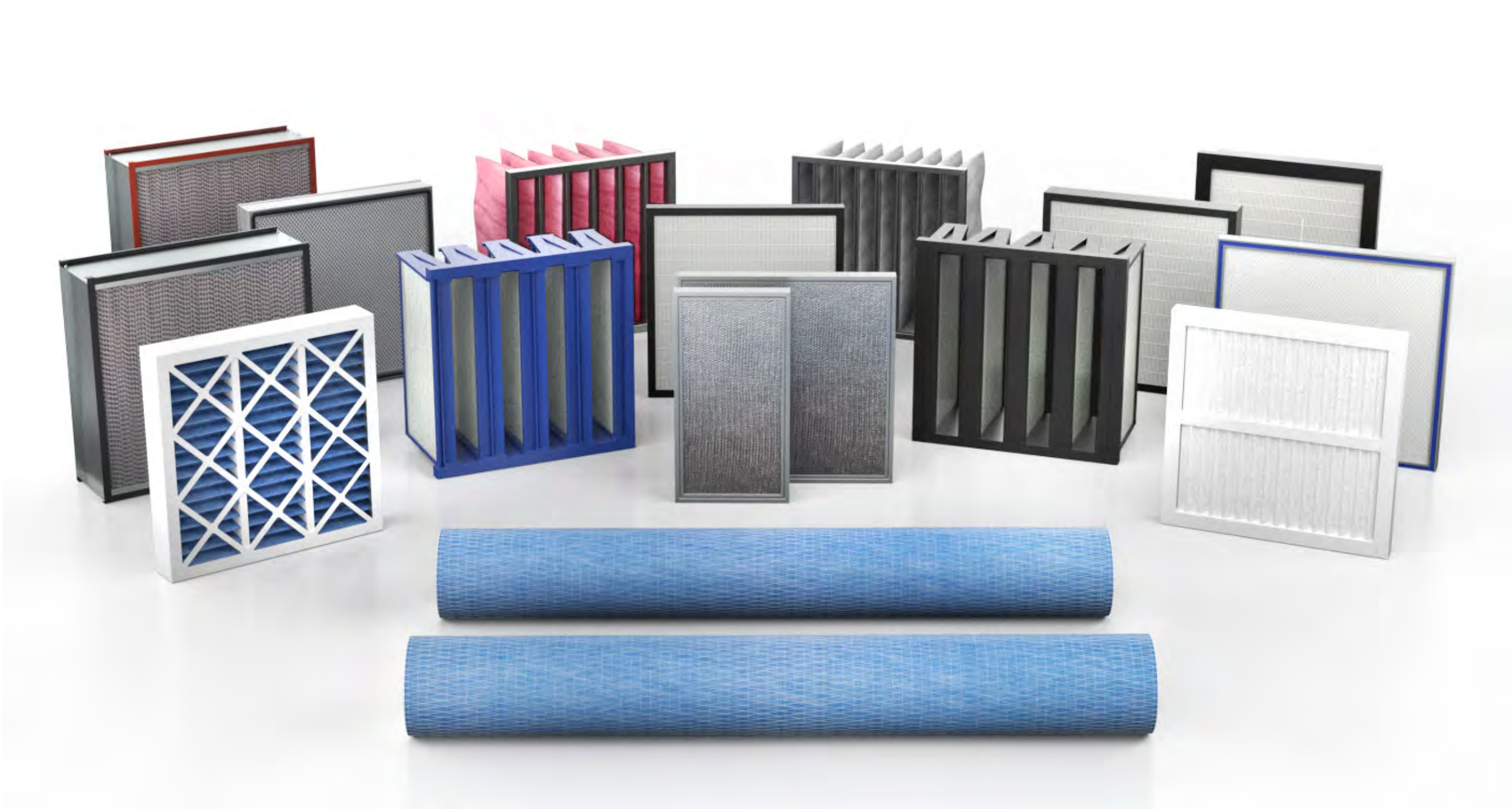


119-122 Services

# HVAC FILTERS

## FOR GENERAL VENTILATION

High performance energy saving, general ventilation air filters made in a vast range of designs, sizes, and classes to meet ASHRAE, EN, and ISO standards to address our customer's particulate contamination challenges across multiple industries and applications.



## Aluminum AMP™



**Media Pads**

Expanded Aluminum Media Pads

G2 > G4

1/4" | 5/8" | Custom Thicknesses

## Polymax SMP™



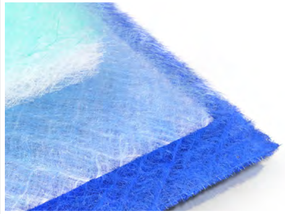
**Media Pads**

Synthetic Media Pads

G1 > G4

5 | 10 | 15 | 20 | 25 | 40 MM Thicknesses

## Glassflow GMP™



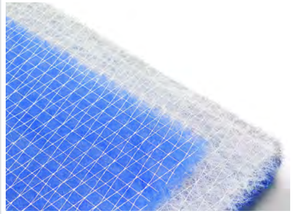
**Media Pads**

Fiber Glass Media Pads

G2 > G4

1" | 2" | 3" | 4" Thicknesses

## Glassflow GMPT™



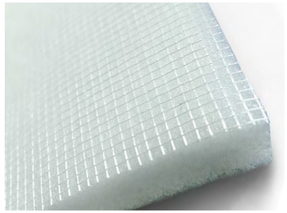
**Media Pads**

Thread Supported Fiber Glass Media Pads

G2 > G4

1" | 2" | 3" | 4" Thicknesses

## Polymax SMPT™



**Media Pads**

Thread Supported Synthetic Media Pads

G4

20 MM Thickness





## Aluminum AMR™



**Media Rolls**

Expanded Aluminum Media Rolls

G2 > G4

1/4" | 5/8" | Custom Thicknesses

## Polymax SMR™



**Media Rolls**

Synthetic Media Rolls

G1 > G4

5 | 10 | 15 | 20 | 25 | 40 MM Thicknesses

## Polymax SMRT™



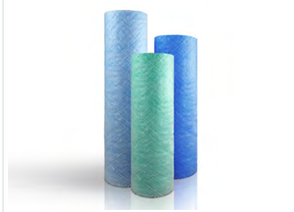
**Media Rolls**

Thread Supported Synthetic Media Rolls

G4

20 MM Thickness

## Proglass GMR™



**Media Rolls**

Glass Fiber Media Rolls

G2 > G4

1" | 2" | 3" | 4" Thicknesses

## Proglass GMRT™



**Media Rolls**

Thread Supported Glass Fiber Media Rolls

G2 > G4

1" | 2" | 3" | 4" Thicknesses

## Autoroll SYN™



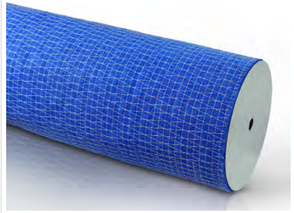
**Automatic Roll Filters**

For Automatic Machinery - Synthetic

G2 > G4

5 | 10 | 15 MM Thicknesses

## Autoroll GLS™



**Automatic Roll Filters**

For Automatic Machinery - Glass Fiber

G2 > G4

1" | 2" Thicknesses

## Duratrap™



**Panel Filters**

Expanded & Flattened Metal Mesh Media

G1 > G2

1" | 2" | 4" Depths

## Duplex™



**Panel Filters**

Aluminum & Synthetic Media Combo

G3 > G4

1" | 2" Depths

## Aluminum G™ / AL™



**Panel Filters**

Expanded Aluminum Media

G1 > G2

1" | 2" | 4" Depths

## Chronet SS™



**Panel Filters**

Woven Stainless Steel Mesh

G1 > G2

1" | 2" | 4" Depths

## SLIM-Line™



**Panel Filters**

Synthetic Media

G3 > G4

7 | 10 MM Depths

## EcoFILL™



**Panel Filters**

Permanent Frame Replaceable Media

G2 > G4

1" | 2" | 4" Depths

## Pure F-Type™



**Panel Filters**

Synthetic Media

G3 > G4

1" | 2" Depths

## Proglass™



**Panel Filters**

Lofted Glass Fiber Media

G3 > G4

1" | 2" | 4" Depths





## SleekFil™



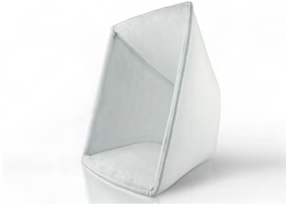
**Rod Supported Filters**

Synthetic Media

G3 > G4

6 | 8 MM Thicknesses

## Qube™



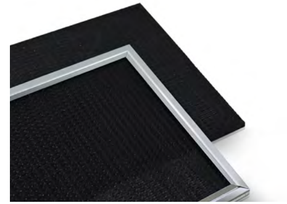
**Rod Supported Filters**

100% Lofted Polyester

G4 > M5

10"| 15"| 20" | Custom Depths

## Silkamesh™



**Rod Supported Filters**

Nylon Mesh Media

G1

6 | 8 | 10 | 12 | 15 | 20 MM Depths

## Super-Sonic G4™



**Bag (Pocket) Filters**

Blend of Synthetic Media

G4

12″ to 36″ Pocket Depths

## Super-Sonic 45%™



**Bag (Pocket) Filters**

Blend of Synthetic Media

F5 (45% Efficiency)

12″ to 36″ Pocket Depths

## Super-Sonic 65%™



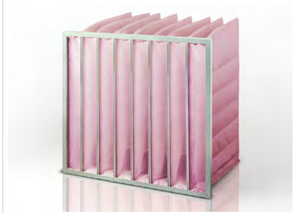
**Bag (Pocket) Filters**

Blend of Synthetic Media

F6 (65% Efficiency)

12″ to 36″ Pocket Depths

## Super-Sonic 85%™



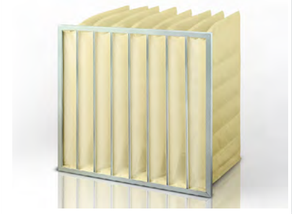
**Bag (Pocket) Filters**

Blend of Synthetic Media

F7 (85% Efficiency)

12″ to 36″ Pocket Depths

## Super-Sonic 95%™



**Bag (Pocket) Filters**

Blend of Synthetic Media

F8 (95% Efficiency)

12″ to 36″ Pocket Depths

## Super-Sonic 98%™



**Bag (Pocket) Filters**

Blend of Synthetic Media

F9 (98% Efficiency)

12" to 36" Pocket Depths





## PrymGlass 45%™



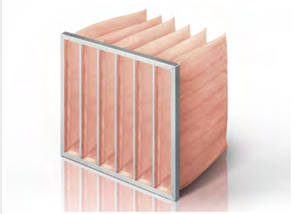
**Bag (Pocket) Filters**

Glass Fiber Media

F5 (45% Efficiency)

12″ to 36″ Pocket Depths

## PrymGlass 65%™



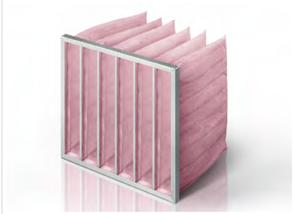
**Bag (Pocket) Filters**

Glass Fiber Media

F6 (65% Efficiency)

12″ up to 36″ Pocket Depths

## PrymGlass 85%™



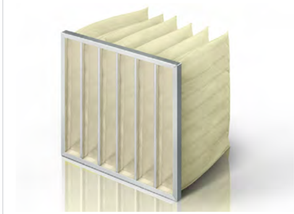
**Bag (Pocket) Filters**

Glass Fiber Media

F7 (85% Efficiency)

12″ up to 36″ Pocket Depths

## PrymGlass 95%™



**Bag (Pocket) Filters**

Glass Fiber Media

F8 (95% Efficiency)

12″ up to 36″ Pocket Depths

## PrymGlass 98%™



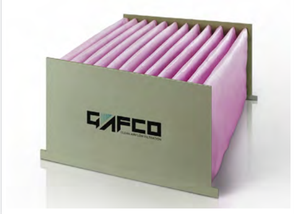
**Bag (Pocket) Filters**

Glass Fiber Media

F9 (98% Efficiency)

12″ to 36″ Pocket Depths

## Soft-Sonic™




**Bag (Pocket) Filters**

Glass Fiber (Synthetic Option Available)

F5 > F9 (45% > 98% Efficiencies)

8″ | 12″ | 24″ Depths

## MasterPleat™



**Pleated Filters**

Synthetic Media - Standard Capacity

G4

1" | 2" | 4" Depths

## MasterPleat HC™



**Pleated Filters**

Synthetic Media - High Capacity

G4

1" | 2" | 4" Depths

## Pure V-Type™



**Pleated Filters**

Cleanable Synthetic Media

G4

1" | 2" | 4" Depths

## Xtra-Pleat™



**Pleated Filters**

Self Supported Synthetic Media

G4 > M6

1" | 2" | 4" Depths

## Ultima-Pleat™



**Pleated Filters**

Rigid Synthetic Media

G4 > M6

1" | 2" | 4" Depths

## Tribo-V™



**Pleated Filters**

Triboelectric Media

F6 > F8

1" | 2" | 4" Depths

## ComPAQ™



**Pleated Filters**

Self Supported Synthetic Media

F5 > F9

2" | 4" Depths

## Infinyte™



**Compact Filters**

Wire Mesh Supported Synthetics Media

F5 > F9

6" | 12" Depths





## Clymax™



**Aluminum Separated Filters**

Micro Glass Media

F6 > F9

6" | 12" Depths

## GrandPAK™



**Aluminum Separated Filters**

Standard Capacity - Micro Glass Media

H13 > H14

6" | 12" Depths

## GrandPAK HC™



**Aluminum Separated Filters**

High Capacity - Micro Glass Media

H13 > H14

6" | 12" Depths

## GrandPAK HT™



**Aluminum Separated Filters**

High Temperature Micro Glass Media

H13 > H14

6" | 12" Depths

## V-Guard SC™



**Compact Filters**

Standard Capacity - Micro Glass Media

M6 > F9

12″ Depth

## V-Guard HC™



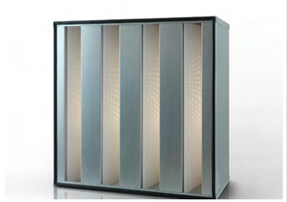
**Compact Filters**

High Capacity - Micro Glass Media

M6 > F9

12" Depth

## Aseptik™



**Compact Filters**

Micro Glass Fiber Media

E10 > E12

12″ Depth

## Micro-CELL™



**Compact Filters**

Micro Glass Fiber Media

H13 > H14

12″ Depth

## Micro-CELL PNL™



**Compact Filters**

Micro Glass Fiber Media

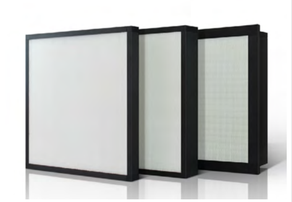
H13 > H14

12″ Depth





## STIPH™



**Mini Pleat Filters**

Hybrid Rigid Synthetic Media

F7 > E12

2″ | 4″ | 6″ Depths

## MicroFyne™



**Mini Pleat Filters**

Micro Glass Fiber Media

H13 > H14

30 | 48 | 69 | 90 | 95 MM | Other Depths

## MicroFyne PLUS™



**Mini Pleat Filters**

High Capacity Micro Glass Fiber Media

H13 > H14

150 | 292 | 305 MM Depths

## PrymSeal PNL™



**Mini Pleat Filters**

Micro Glass Fiber Media

H13 > U17

81 | 104 MM Depths

## PrymSeal SHL™



**Mini Pleat Filters**

Micro Glass Fiber Media

H13 > U17

30 | 48 | 69 | 94 | 122 MM Depths

## UltraFyne™



**Mini Pleat Filters**

Micro Glass Fiber Media

U15 > U17

30 | 48 | 69 | 90 | 95 MM | Other Depths

## UltraFyne HC™



**Mini Pleat Filters**

High Capacity Micro Glass Fiber Media

U15 > U17

150 | 292 | 305 MM Depths

## PuriViolet™



**Mini Pleat Filters**

Micro Glass Fiber Media with UV Light

H13 > U17

Standard & Custom Sizes Available

HVAC Filters
Gas Phase Filters
Gas Turbine Filters
Dust Collector Filters
Modules
Housings
Air Intakes
FFU's & Purifiers
Cross Contamination
Laboratory Equipment
Aerosol Collectors
Cleanrooms
Kitchens
Smoking Rooms
Industrial Air Cleaners
Services

# GAS PHASE FILTERS

## FOR MOLECULE FILTRATION

Highly customizable gas phase air filters built from forms of activated carbon and alumina in accordance to ISO 10121 or ASHRAE 145.2 standards to serve the most specific requirements across a wide range of applications and eliminate molecules, odors, and gases.



## SatuCARB™



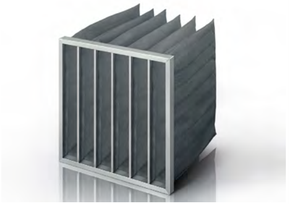
**Very Light Odor Control**

Synthetic Carbon Coated Media

G3 > G4 - %45 General Odor Efficiency

1" | 2" Depths

## Graphyte™



**Light to Moderate Gas Adsorption**

Laminated Carbon Bag Filter

G4 - Up to 85% on General Gases

12" to 36" Pocket Depths

## Graphyte PLUS™



**Gas & Particulate Filtration**

Laminated Carbon & Synthetic Media

F7 | F8 - Up to 85% on General Gases

12" to 36" Pocket Depths

## Active-CELL™



**Moderate to High Gas Adsorption**

Laminated Carbon (Gas Filter)

G4 - Up to 95% on General Gases

12" Depths

## Active-CELL PLUS™



**Gas & Particulate Filtration**

Laminated Carbon & Synthetic Media

F7 > F8 - Up to 85% on General Gases

12" Depths

## Chemiseize™



**Moderate to High Gas Adsorption**

Very High Capacity Laminated Carbon

G3 > G4 - Up to 95% on General Gases

12" Depths

## Chemiseize PLUS™



**Gas & Particulate Filtration**

Laminated Carbon & Synthetic Media

G4| F7 | F8 - Up to 85% on General Gases

12" Depths

## CarboPleat™



**Light to Moderate Gas Adsorption**

Standard Capacity Laminated Carbon

G3 > G4 - Up to 85% on General Gases

2" | 4" | 6" | 12"





## CarboPleat HC™



**Moderate to High Gas Adsorption**

High Capacity Laminated Carbon

G3 > G4 - Up to 95% on General Gases

2" | 4" | 6" | 12" Depths

## CarboSORB STD / CST™



**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 98% on Target Gases

1" | 2" Depths

## Active-CELL GR STD / CST™



**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 99% on Target Gases

12" Depths

## Chemiseize GR STD / CST™



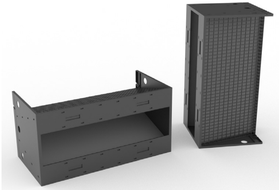
**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 99% on Target Gases

12" Depths

## Capsule-12 STD / CST™



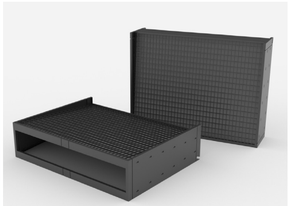
**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 99.99% on Target Gases

24" x 12" x 12"

## Capsule-18 STD / CST™



**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 99.99% on Target Gases

6" x 24" x 18"

## MasterCarb STD / CST™



**High Gas Adsorption**

Media Selection Based on Target Gases

Up to 99.99% on Target Gases

10" | 18" | 24" Lengths

## Hegaurd™



**High Gas Adsorption**

ASZM-TEDA Media for Military Applications

Up to 99.99% on Target Gases

6" | 12" | Other Depths

| Sulfursieze H2S™ | Aluminics NO2™ | AmmoniSorb NH3™ | ToxiShield™ |
|---|---|---|---|
|  |  |  |  |
| **Treatment of acid gases ($H_2S$, $SO_2$, HCl, VOCs).** | **Treatment of acid and nitric gases ($H_2S$, $SO_2$, SO, NO2, NO, HCl, HCHO, VOCs).** | **Treatment of ammonia (NH3) and amines.** | **Treatment of war field gases (Cyanogen Chloride, Hydrogen Cyanide, Phosgene)** |
| Common applications include odor control in stations, waste water treatment plants, offices, kitchens, welding fumes, and hospitals chemical treatment. | Common applications include kitchens, restaurant odors, toilets, odor control stations, waste water treatment plants, offices, welding fumes, and hospitals. | Common applications include fertilizers, waste water treatment plants, plantation, experimentation farms, agriculture labs. | Common applications include security and crises management centers, gas masks, defense centers, protective clothing, and environmental protection agencies. |
| Developed from a distinctive process that enables it to achieve exceptional H2S absorption without the need for any chemical reagents applied to the carbon. | A blend composed of 50% impregnated activated carbon (10% CuO) and 50% alumina media (10% NaMnO4/KMnO4). | Impregnated activated carbon pellets engineered specially for Ammonia gas ($NH_3$) removal. | Activated carbon granules developed specifically to protect against deadly and poisonous war gases, this non-chromium carbon is ideal for use in battlefields. |
| • Formulated to effectively eliminate H2S, SO2, and sulphur compounds.<br>• Impressive adsorption capacity of 0.3 g/cc, our media ensures efficient removal of unwanted compounds.<br>• Optimized pore structure for excellent VOC absorption, minimal dust generation and air resistance. | • Blend of %50 impregnated activated carbon and %50 alumina media.<br>• High removal efficiency of hydrogen sulfide (H2S), sulfur dioxide (SO2), nitrogen dioxide (NO2), nitric oxide (NO), and formaldehyde (HCHO)<br>• Physisorption and chemisorption methods of gas removal. | • Manufactured by high temperature steam activation on coconut shell.<br>• High adsorption efficiency specifically in ammonia removal.<br>• Highly optimized pore structure to deliver superior VOC absorption, low dust generation and low pressure drop. | • Chromium free NBC grade carbon.<br>• Improved physical and chemical adsorption properties for maximum protection against war gases.<br>• Designed for longer performance and temperature stability.<br>• Protects against cyanide, cyanogen chloride (CK), and other harmful gases. |
| Media is available in a range of granule or pallet sizes and may be supplied in bulk form or pre-filled in loose-fill air filters. | Media is available in a range of granule or pallet sizes and may be supplied in bulk form or pre-filled in loose-fill air filters. | Media is available in a range of granule or pallet sizes and may be supplied in bulk form or pre-filled in loose-fill air filters. | Media is available in a range of granule or pallet sizes and may be supplied in bulk form or pre-filled in loose-fill air filters. |



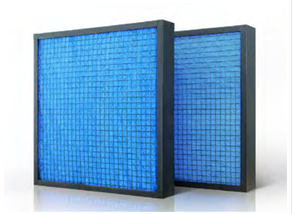
# GAS TURBINE FILTERS

## FOR POWER SYSTEMS

Built to operate in variable and turbulent environmental conditions to protect gas turbines and power generating systems from ambient air contaminants that would otherwise cause fouling, erosion, and corrosion reducing engine and turbine performance output.



## Proglass GT™



**Panel Filters**

Thread Supported Lofted Glass Fiber

G2 > G4

1" | 2" | 3" | 4" Depths

## MasterPleat GT™




**Pleated Filters**

HD Pleated Synthetic Media

G4

2" | 3" | 4" Depths

## TrueLoft GT™



**Bag (Pocket Type) Filters**

100% Lofted Polyester Media

G4 > M5

12" up to 36" Pocket Depths

## Clymax GT™



**Aluminum Separated Filters**

Micro Glass Fiber (Multiple Frame Options)

F6 > F9

12" Depths

## V-Guard SC-GT™



**Compact Filters**

Heavy Duty Micro Glass Fiber

F6 > F9

12" Depths

## V-Guard SHC-GT™



**Compact Filters**

Heavy Duty Micro Glass Fiber

F7 > H13

18" | 24" Depths

## STIPH GT™



**Pleated Filters**

Hybrid Synthetic Media

F7 > E12

2" | 4" Depths

## Durapeak™



**Compact Filters**

GT Nano Fiber Media

F7 > E12

1,230 MM | Other Custom Sizes





## CrownPULSE CS™



**Cylindrical Filters**

Cellulose & Synthetic Media Blend

M5 > F9

26" | Other Custom Sizes

## CrownPULSE FF™



**Cylindrical Filters**

Fine Fiber Melt blown Synthetic Media

F7 > F9

26" | Other Custom Sizes

## CrownPULSE NT™



**Cylindrical Filters**

Nano Coated Electro-spun Media

F7 > F9

26" | Other Custom Sizes

## CrownPULSE SN™



**Cylindrical Filters**

100% Hydrophobic Synthetic Media

F7 > E12

26" | Other Custom Sizes

## ZenithPULSE CS™



**Conical Filters**

Cellulose & Synthetic Media Blend

M5 > F9

26" | Other Custom Sizes

## ZenithPULSE FF™



**Conical Filters**

Fine Fiber Melt blown Synthetic Media

F7 > F9

26" | Other Custom Sizes

## ZenithPULSE NT™



**Conical Filters**

Nano Coated Electro-spun Media

F7 > F9

26" | Other Custom Sizes

## ZenithPULSE SN™



**Conical Filters**

100% Hydrophobic Synthetic Media

F7 > E12

26" | Other Custom Sizes

HVAC Filters
Gas Phase Filters
Gas Turbine Filters
Dust Collector Filters
Modules
Housings
Air Intakes
FFU's & Purifiers
Cross Contamination
Laboratory Equipment
Aerosol Collectors
Cleanrooms
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# DUST COLLECTOR FILTERS

## FOR PULSE JET BAG-HOUSES

Our reliable and highly efficient industrial dust collector bag filters fit a variety of pulse jet bag-houses and other dust collector systems. We offer a wide range of fabrics, coatings, finishes, and size configurations to meet the needs of diverse industries and applications.



## DusTrap-PLY™



**Polyester Filter Bag**

| |
|---|
| Polyester Fiber |
| 500-550-600 g/m² |
| 130 - 150 °C |

## DusTrap-NMX™



**Aramid Filter Bag**

| |
|---|
| Aramid Fiber |
| 550 g/m² |
| 204 - 240 °C |

## DusTrap-TFL™



**PTFE Filter Bag**

| |
|---|
| PTFE Fiber |
| 750 g/m² |
| 260 - 280 °C |

## DusTrap-FGI™



**Woven Fiberglass Filter Bag**

| |
|---|
| Glass Fiber |
| 750-770 g/m² |
| 260 - 280 °C |

## DusTrap-PPS™



**PPS Filter Bag**

| |
|---|
| PPS |
| 550- 650 g/m² |
| 165 - 200 °C |

## DusTrap-PLM™



**Polyamide Filter Bag**

| |
|---|
| P84 Fiber |
| 550 – 900 g/m² |
| 240 - 260 °C |

## DusTrap-ACR™



**Acrylic Filter Bag**

| |
|---|
| Acrylic Fiber |
| 550 g/m² |
| 130 - 150 °C |

## DusTrap-PLP™



**Polypropylene Filter Bag**

| |
|---|
| Polypropylene |
| 550 G/M² |
| 90 - 95 °C |





## DusTrap-HMP™



**Homo polymer Acrylic Filter Bag**

| |
|---|
| Homo polymer Acrylic |
| 550 G/M² |
| 130 - 150 °C |

## DusTrap-NYL™



**Bag Filters**

| |
|---|
| Nylon |
| 5 –100 µm |
| 120 - 135 °C |

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# MODULES

## FOR TERMINAL INSTALLATIONS

Units are manufactured under a quality assurance program and are then assembled, finished, inspected, individually tested and serial numbered by skilled, trained, and experienced crafts-men and systems. Supplied in a wide range of designs equipped. With our premium HEPA or ULPA filters ready for installation



## Hygientech TXA™



**Top Access Ceiling Modules**

- Terminal Modules for Cleanrooms
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## Hygientech TSS™



**Top Access Ceiling Modules**

- Terminal Modules for Cleanrooms
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## Hygientech SXA™



**Side Access Ceiling Modules**

- Terminal Modules for Cleanrooms
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## Hygientech SSS™



**Side Access Ceiling Modules**

- Terminal Modules for Cleanrooms
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## ArmOR LGT™



**Operation Theatre Modules**

- Surgical  Modules with Light Access
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## ArmOR SLD™



**Operation Theatre Modules**

- Surgical  Modules without Light Access
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

## ArmOR PWD™



**Operation Theatre Modules**

- Self Powered Surgical  Modules
- Equipped with HEPA or ULPA Filters
- Range of Sizes, Finishes, and Accessories

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# HOUSINGS

## FOR DUCTED INSTALLATIONS

Highly customizable housing can be equipped with a wide range of air filters and staging configurations to suite all types of framing systems, installations, and application uses from general supply and exhaust air ventilation to air filtration of radioactive, toxic, and biological particles and gases in highly sensitive application.



# Housings

## PurePath™



**Single Stage Filter Housings**

- Particulate Filtration Single Stage Housings
- Range of Filter, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## PurePath II™



**Two Stage Filter Housings**

- Particulate Filtration Two Stage Housings
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## PurePath III™



**Three Stage Filter Housings**

- Particulate Filtration Three Stage Housings
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## KLEANZ PRT IV™



**Four Stage Filter Housings**

- Particulate Filtration Four Stage Housings
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## GaShield STD™



**Conventional Filter Housings**

- Fits Both Laminated & Granular Filters
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## GaShield TRY™



**Tray Type Filter Housings**

- Fits Tray Type Gas Phase Filters
- Range of Finishes & Accessories
- Up to 60,000 CFM Air Flow Capacities

## GaShield CYL™



**Cylindrical Filter Housings**

- Fits Canister Type Gas Filters
- Range of Finishes & Accessories
- Up to 60,000 CFM Air Flow Capacities

## ENVIRO-SAFE™



**Bag-In Bag-Out Filter Housings**

- Particulate and/or Gas Filtration BIBO
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

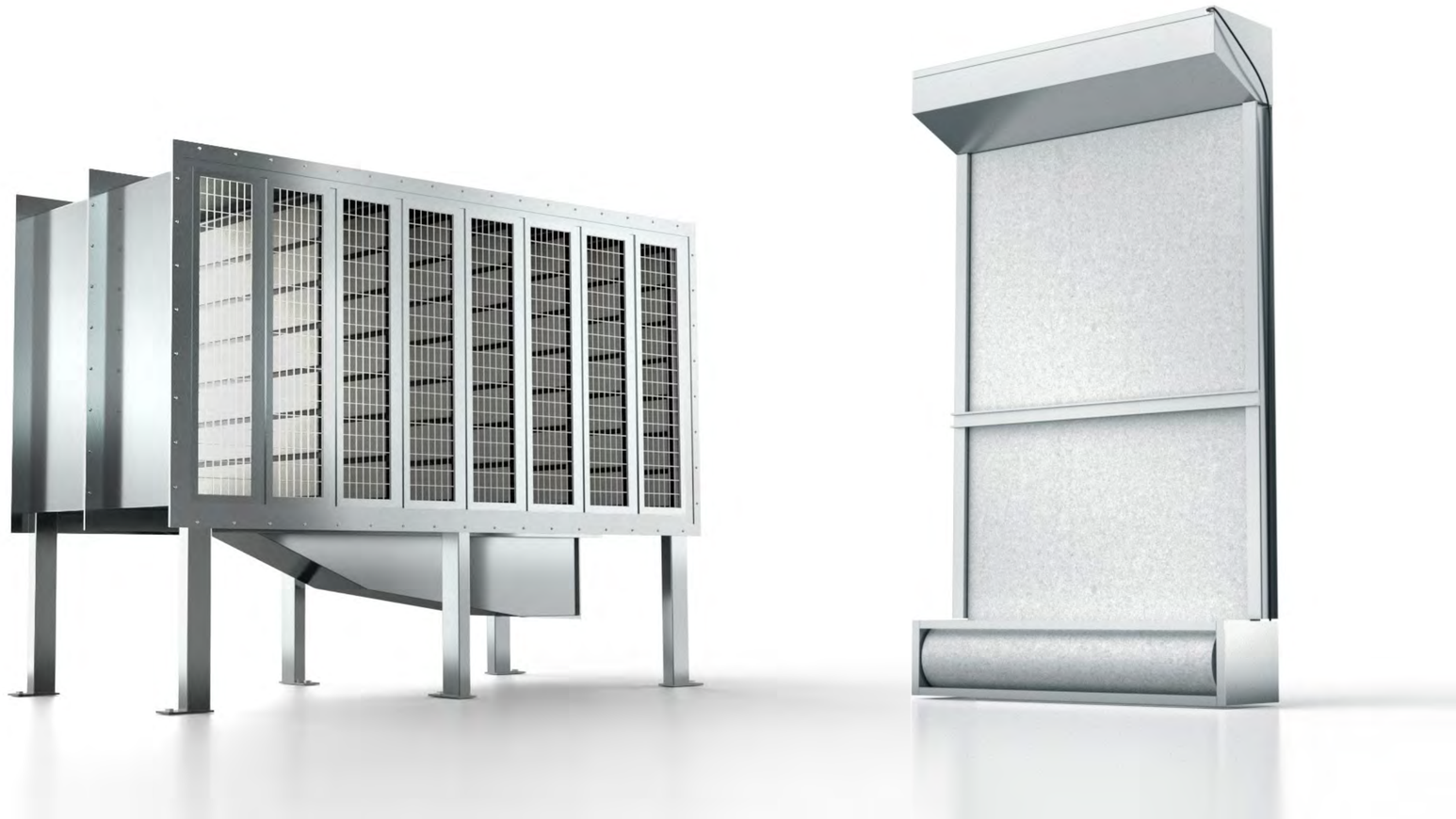


HVAC Filters
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# AIR INTAKES

## FOR HIGH VOLUME AIR INTAKES

We offer a wide range of economical and reliable air intake filtration solutions for high volume systems. Customer needs are assessed by our experienced selection and technical teams, and the best selections are made based on application, operating conditions, air intake volumes, and level of performance needs.



## Pro-TECHT™



**Built-up Filter Banks**

- Single Stage Air Intake Built-up Filter Banks
- Wide Range of Filter Selections
- Configurable to Intake Size & Flow Volume

## PRO-TECHT PLUS™



**Built-up Filter Banks**

- Two Stage Air Intake Built-up Filter Banks
- Wide Range of Filter Selections
- Configurable to Intake Size & Flow Volume

## AutoKlean SYN™



**Automatic Roll Filters**

- Synthetic Media Roll Included
- G1 > G4
- Configurable to Intake Size & Flow Volume

## AutoKlean Glass™



**Automatic Roll Filters**

- Glass Fiber Media Roll Included
- G2 > G4
- Configurable to Intake Size & Flow Volume

## Inertia™



**Inertia Filters**

- Self-cleaning Inertia Separators
- May be Supplied with Blade Fans
- Configurable to Intake Size & Flow Volume



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# FFU'S & PURIFIERS

## FOR ULTRA CLEAN AIR ANYWHERE

We offer a broad range of portable air purifiers and ceiling (ducted and static) FFU's built and configured to deliver ultra clean HEPA and ULPA filtered air anywhere. Featuring our powerful semi silent fans and multi-speed controllers as standard equipment, the units may be equipped with a range of optional accessories to address any specific contamination challenges.



## Ventex FFU™



**Particulate Fan Filter Units**

- Fan Filter Units for Particulate Filtration
- Pre & Final Filters Included
- Up to 1,500 CFM Air Flow Capacities

## Udorless FFU™



**Gas Phase Fan Filter Units**

- Fan Filter Units for Gas Filtration
- Pre & Final Filters Included
- Up to 1,500 CFM Air Flow Capacities

## Ventex PFFU™



**Particulate Air Purifiers**

- Portable Air Purifiers for Particulate Filtration
- Pre & Final Filters (Optional Gas Filter)
- Up to 1,200 CFM Air Flow Capacities

## Udorless PFFU™



**Gas Phase Air Purifiers**

- Portable Air Purifiers for Gas Filtration
- Pre & Final Filters (Optional Particulate Filter)
- Up to 1,200 CFM Air Flow Capacities

## Ventex PFFU Plus™



**Negative Air Purifiers**

- Negative Pressure Builders
- H13 > U17
- Up to 1,200 CFM Air Flow Capacities

## Virushield™



**Infected Patient Barrier**

- Pre & Final Filter Included
- H13 > U15
- Up to 1,200 CFM Air Flow Capacities



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# CROSS CONTAMINATION

## YOUR CLEANROOM GATEWAY

Cross contamination equipment are designed to function as a reliable gateway between a clean room and a none cleanroom or cleanrooms of different classes to eliminate the potential of cross contamination and the risk imposed by the transfer of people, products, tools or equipment on the integrity of a clean environment.



# Cross Contamination

| SafePATH-STC™ | SafePATH-DMC™ | BLAST Air Shower™ |
|---|---|---|
|  |  |  |
| **Cross Contamination** | **Cross Contamination** | **Cross Contamination** |
| Pollutants Barrier for Cleanroom Materials | Pollutants Barrier for Cleanroom Materials | Pollutants Barrier for Cleanroom Staff |
| Static Pass box (No Filter Included) | Dynamic Pass box (With Fan & Filters) | Variety of Sizes, Finishes, and Accessories |
| Variety of Sizes, Finishes, and Accessories | Variety of Sizes, Finishes, and Accessories | Self Powered, Auto Function, LED Display |



HVAC Filters
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# LABORATORY EQUIPMENT

## PREVENTION & PROTECTION

We aim to advance science and discovery by providing a safe working environment for people, products, and processes in laboratories and healthcare facilities. We certify, design, and manufacture fume hoods, clean benches, and bio-safety cabinets utilizing the latest technologies in a wide range of sizes, classes, standard and custom configurations to meet the most rigorous local and global safety standards.



## C-BENCH VER™



**Clean Benches - Vertical Flow**

- Sample Protection
- Optional Smart Controller
- Motorized Sash
- Vertical Flow Design
- HEPA Final Filter

## C-BENCH HRZ™



**Clean Benches - Horizontal Flow**

- Sample Protection
- Optional Smart Controller
- Motorized Sash
- Horizontal Flow Design
- HEPA Final Filter

## C-BENCH ANML™



**Clean Benches**

- Animal Transfer Station
- Optional Smart Controller
- Motorized Sash
- Optimized for Easy Access
- HEPA Final Filter

## F-HOOD NBP™



**Fume Hoods - Non-bypas**

- Operator & Environment Protection
- Optional Smart Controller
- Motorized Sash
- Non-bypass Design
- Carbon Chemisorption Filter

## F-HOOD BYP™



**Fume Hoods - Bypass**

- Operator & Environment Protection
- Optional Smart Controller
- Motorized Sash
- Bypass Vent Design
- Carbon Chemisorption Filter





## LAMEX C1™



**Biosaftey Cabinet - Class I**

- Operator & Environment Protection
- Touch Screen Smart Controller
- Filter Lifespan Monitoring & Airflow Alarm
- Motorized Sash
- HEPA Final Filter

## LAMEX C2A1™



**Biosaftey Cabinet - Class II A1**

- Sample, Operator & Environment Protection
- Touch Screen Smart Controller
- Filter Lifespan Monitoring & Airflow Alarm
- Motorized Sash
- ISO 5 Cleanliness Level & HEPA Final Filter

## LAMEX C2A2™



**Biosaftey Cabinets - Class II A2**

- Sample, Operator & Environment Protection
- Touch Screen Smart Controller
- Filter Lifespan Monitoring & Airflow Alarm
- Motorized Sash
- ISO 5 Cleanliness Level & HEPA Final Filter

## LAMEX C2B1™



**Biosaftey Cabinets - Class II B1**

- Sample, Operator & Environment Protection
- Touch Screen Smart Controller
- Filter Lifespan Monitoring & Airflow Alarm
- Motorized Sash
- ISO 5 Cleanliness Level & HEPA Final Filter

## LAMEX C2B2™



**Biosaftey Cabinets - Class II B2**

- Sample, Operator & Environment Protection
- Touch Screen Smart Controller
- Filter Lifespan Monitoring & Airflow Alarm
- Motorized Sash
- ISO 5 Cleanliness Level & HEPA Final Filter

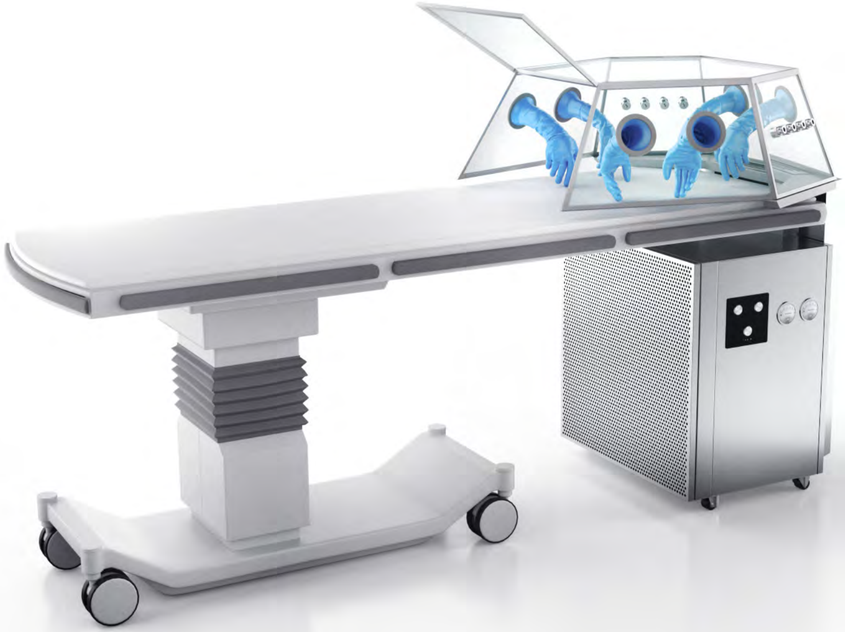
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# AEROSOL COLLECTORS

## EXPOSURE RISK REDUCTION

We offer sophisticated filtration solutions designed for surgical and clinical facility staff obligated to treat patients in unfavorable health conditions such as those suffering from epidemics prone or infectious diseases that require urgent surgical intervention. The units are designed to eliminate the risks of aerosol exposure to the environment and surgical or clinical staff and help them operate in a risk free setting.





# Aerosol collectors

| Dentasafe™ | Surgimask™ |
|---|---|
|  |  |
| **Aerosol Collectors** | **Facial Isolation Cabins** |
| For Aerosol Suction in Dental Operations | For Aerosol Suction in Surgical Operations |
| Aluminum Alloy Adjustable Suction Arm | Multiple Glove Access Channels |
| Protects Staff from Infectious Diseases | Protects Staff from Infectious Diseases |
| Includes Pre-Filter and H14 HEPA Filter | Includes Pre-Filter and H14 HEPA Filter |



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# CLEANROOMS

## INNOVATIVE HYGIENE ENVIRONMENTS

Catering to our customers' diverse requirements in the medical and pharmaceutical industry, GAFCO designs, builds, test and commissions revolutionary cleanroom projects that have met the sophisticated needs of customers ensuring compliance with the most stringent international and environmental standards.

We deliver turnkey end-to-end cleanroom solutions utilizing our certified specialists in the field of air filtration and cleanroom technology at the forefront of advancements in indoor air quality and environmental sustainability.



| UltraTent™ | Climasure™ | Cleanroom Construction |
|---|---|---|
|  |  |  |
| **Surgical Mini Environments** | **Portable Mini Environments** | **Cleanroom Construction** |
| Mobile Clean Environment Anywhere | Built to ISO 14644 or EU GMP Standards | Turnkey Solutions by GAFCO Experts |
| Pre & Filter Filters (H13 > U17) | Pre & Filter (H13 > U17) Filters Included | Built to ISO 14644 or EU GMP Standards |
| Variety of Sizes, Finishes, and Accessories | Variety of Sizes, Finishes, and Accessories | Designed, Built, Tested & Certified |



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# KITCHENS

## ODOR & FUME CONTROL

We offer a broad range of fume and odor control filters and systems that address the needs of residential, commercial, and central cloud kitchens. Catering to our customers' diverse requirements in the food processing industry, GAFCO designs, builds, and executes installations of complex pollution control projects helping facility managers eliminate the risks associated with cooking fumes and reactive organic gases.



## Greasetrap™



**Grease & Fume Filters**

Designed for Cooking Hoods

Stainless Steel Baffle Construction

Available in a Wide Range of Sizes

## Chronet SS-KTN™



**Grease & Fume Filters**

Stainless Steel Mesh Filter

G1 > G2

1″ | 2″ | 3″ | 4″ Depths

## CarboSORB KTN™



**Odor Filters**

Carbon V-Bank Filter

Activated Carbon Granule

G3 > G4 - 95% Activity on Target Gases

## CarboPleat KTN™



**Odor Filters**

High Capacity Laminated Carbon

G4 | F7 | F8 - 95% Activity on Target Gases

2″ | 4″ | 6″ | 12″ Depths

## Chemiseize GR-KTN™



**Odor Filters**

Carbon V-Bank Filter

Activated Carbon Granule

G3 > G4 - 95% Activity on Target Gases

## Capsule-12 KTN™



**Cassette Filters**

Media Selection Based on Target Gases

Up to 99% on Target Gases

6″ x 24″ x 18″

## Capsule-18 KTN™



**Cassette Filters**

Media Selection Based on Target Gases

Up to 99% on Target Gases

24″ x 12″ x 12″

## MasterCarb KTN™



**Cartridge Filters**

Media Selection Based on Target Gases

Up to 99% on Target Gases

18″ | 24″ Lengths





## GaShield STD-KTN™



**Odor Filtration Housings**

Fits Both Laminated & Granular Filters

Range of Filters, Finishes, and Accessories

Up to 60,000 CFM Air Flow Capacities

## GaShield TRY-KTN™



**Odor Filtration Housings**

Fits Tray Type Gas Phase Filters

Range of Finishes & Accessories

Up to 60,000 CFM Air Flow Capacities

## GaShield CYL-KTN™



**Odor Filtration Housings**

Fits Canister Type Gas Filters

Range of Finishes & Accessories

Up to 60,000 CFM Air Flow Capacities

## Hoodyfil ESP™



**Fume Filtration Systems**

Hood-Type Electrostatic Precipitator (ESP)

For Light Load Cooking Fumes

Up to 3,000 CFM Flow Capacities

## Electrofil SP-ESP™



**Fume Filtration Systems**

Single Pass Electrostatic Precipitator (ESP)

For Moderate Load Cooking Fumes

Up to 60,000 CFM Flow Capacities

## Electrofil DP-ESP™



**Fume Filtration Systems**

Double Pass Electrostatic Precipitator (ESP)

For High Load Cooking Fumes

Up to 60,000 CFM Flow Capacities

## Ecoviro SP Ecology Units™



**Fume & Odor Filtration Systems**

Single Pass Electrostatic Precipitator (ESP)

Range of Filter & Accessory Selections

Up to 60,000 CFM Flow Capacities

## Ecoviro DP Ecology Units™



**Fume & Odor Filtration Systems**

Double Pass Electrostatic Precipitator (ESP)

Range of Filter & Accessory Selections

Up to 60,000 CFM Flow Capacities

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# SMOKING ROOMS

## FOR NONSMOKERS & VAPERS

GAFCO delivers patent activated carbon filters, filter housings, modular smoking cabins and rooms specifically designed to eliminate harmful contaminants and toxic gases from penetrating to the surrounding facility or environment. Smoking cabins are available in different sizes and designs and are built to fit any space to address the needs of both enterprise and commercial smoking rooms and lounges.



## CarboSORB SMK™



**Odor Filters**

- Carbon V-Bank Filter
- Activated Carbon Granule
- G3 > G4 - 95% Activity on Target Gases

## Activ-CELL SMK™



**Odor Filters**

- Compact V-Cell Filter
- Laminated Carbon Media
- 90% Activity on Target Gases

## Activ-CELL GR-SMK™



**Odor Filters**

- Compact V-Cell Filter
- Granular Special Blend Media
- 98% Activity on Target Gases

## Chemiseize SMK™



**Odor Filters**

- Carbon V-Bank Filter
- Activated Carbon Granule
- 95% Activity on Target Gases

## Chemiseize GR-SMK™



**Odor Filters**

- Carbon V-Bank Filter
- Activated Carbon Granule
- 95% Activity on Target Gases

## Capsule-12 SMK™



**Cassette Filters**

- Media Selection Based on Target Gases
- Up to 99% on Target Gases
- 6" x 24" x 18"

## Capsule-18 SMK™



**Cassette Filters**

- Media Selection Based on Target Gases
- Up to 99% on Target Gases
- 24" x 12" x 12"

## MasterCarb SMK™



**Cartridge Filters**

- Media Selection Based on Target Gases
- Up to 99% on Target Gases
- 18" | 24" Lengths





## Udorless SMK™



**Air Purifiers**

- Pre & Carbon Filter Included
- Aif Flow up to 1200
- 95% Efficiency on Target Gases

## GaShield STD-SMK™



**Odor Filtration Housings**

- Fits Both Laminated & Granular Filters
- Range of Filters, Finishes, and Accessories
- Up to 60,000 CFM Air Flow Capacities

## GaShield TRY-SMK™



**Odor Filtration Housings**

- Fits Tray Type Gas Phase Filters
- Range of Finishes & Accessories
- Up to 60,000 CFM Air Flow Capacities

## GaShield CYL-SMK™



**Odor Filtration Housings**

- Fits Canister Type Gas Filters
- Range of Finishes & Accessories
- Up to 60,000 CFM Air Flow Capacities

## SmoKAB ETP™



**Smoking Cabins**

- Enterprise Smoking Room Cabins
- Wide Range of Filter & Accessory Selections
- Turnkey Solution by GAFCO Experts

## SmoKAB COM™



**Smoking Cabins**

- Commercial Smoking Cabins
- Wide Range of Filter & Accessory Selections
- Turnkey Solution by GAFCO Experts

HVAC Filters
Gas Phase Filters
Gas Turbine Filters
Dust Collector Filters
Modules
Housings
Air Intakes
FFU's & Purifiers
Cross Contamination
Laboratory Equipment
Aerosol Collectors
Cleanrooms
Kitchens
Smoking Rooms
Industrial Air Cleaners
Services

# Industrial Air Cleaners

## SAFE INDUSTRIAL PROCESSES

Industrial air cleaners are an economical solution that negates the need to exhaust treated air outside industrial facilities to improve indoor air quality from contaminants generated by grinding, cutting, welding, and similar industrial machinery and equipment. These self powered, self contained and efficient air cleaners are highly configurable and can be built to eliminate particulates, fumes, and gases, born indoors by industrial processes.



| Vacumax™ Air Cleaners | Weldfil™ Fume Extractors |
|---|---|
|  |  |
| **Industrial Vacuum Cleaners** | **Welding Fume Extractors** |
| Built for General Industrial Cleaning | Built for Welding Fume Treatment |
| Removable Dust Container | Self Supported Suction Hood |
| Heavy Duty Compact Design | 360° Rotation Suction Arm |

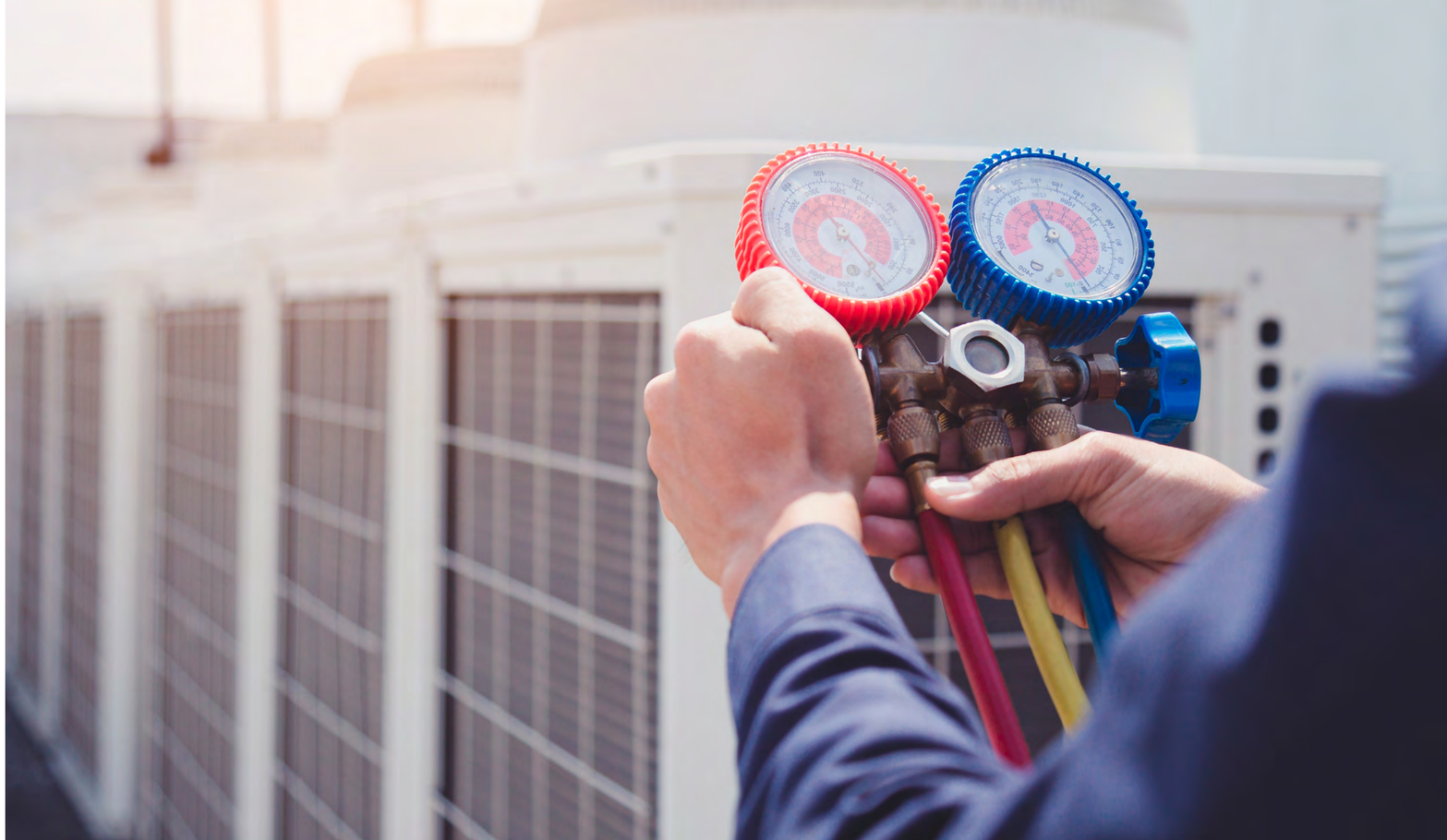


HVAC Filters
Gas Phase Filters
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# SERVICES

## FOR THOSE IN NEED OF SUPPORT

Our certified specialists possess years of experience troubleshooting HVAC equipment and cleanroom problems. With access to the most advanced equipment and measurement instruments, our teams can deliver fast and reliable support to address any air quality issues, execute filter and equipment integrity testing, and provide cleanroom validation and certification on demand.



## Cleanroom Classification



### Validating Cleanrooms

- Our certified specialists possess years of experience performing qualification work in a vast range of environments and applications.
- Cleanroom testing and certification services are executed in accordance with EU GMP, FED 209, or ISO 14644-.
- Cleanroom testing results are quality reviewed, analyzed, and documented. Specific test protocols and reporting procedures may be customized to customer specifications.
- Advanced equipment and measurement tools allows for the certification of cleanrooms quickly and accurately.

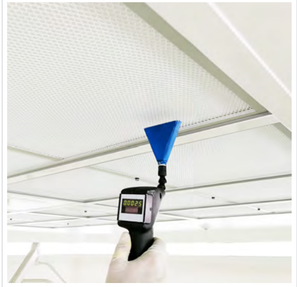
## Cleanroom Consultation



### Design to Execution

- Cleanroom consultation services help you design and maintain the optimal cleanroom environment for your process and application process needs.
- With years of experience addressing cleanroom problems in the Middle East and a proven track record of success, we offer customized consultation tailored to your specific requirements.
- A dedicated and certified team of cleanroom professionals are committed to ensuring that your cleanrooms meet the highest global standards while maximizing your operational efficiency.

## Filter Integrity Testing



### Validating Air Filters

- HEPA/ULPA filters are the heart of any cleanroom and play a critical role in maintaining a contamination free environment.
- Our certified team of specialists provide fast and dependable mobile HEPA and ULPA filter integrity testing on site, alternatively, filters can also be brought to our manufacturing facility for testing.
- Once tested, a performance certificate will be issued for each unit, verifying the efficiency of the filters in operation and the test velocity, temperature, penetration, and filter class.

## Cleanroom Filter Installations



### Guidance & Assistance

- Our technicians are trained on the proper installation of HEPA and ULPA filters in accordance to the highest hygienic standards and industry best practices, ensuring proper sealing and minimizing the risks of air bypass.
- We also provide safe and effective disposal of contaminated filters, helping maintenance teams maintain a clean and safe environment for building occupants and staff during the installation and disposal process.






## Environmental, Social, and Governance

As an air filter manufacturer, we recognize our responsibility to reduce our environmental impact and promote a sustainable future. We use environmentally-friendly materials and implement sustainable manufacturing processes throughout our supply chain to reduce our carbon footprint.

We aim to reduce our carbon footprint by using environmentally-friendly materials and constantly evaluate the impact that our processes have on the environment and the societies we serve and love.

While our products are designed to improve air quality in a range of industries, we believe that our business has the potential to make a positive impact on society, and we strive to use that power responsibly.

Gulf Air Filters Factory Company | PO. Box. 355018 Riyadh 11383 | 2nd Industrial City, Riyadh, Saudi Arabia

ISO 9001 I ISO 22000 I ISO 18001 I NAFA I USGBC