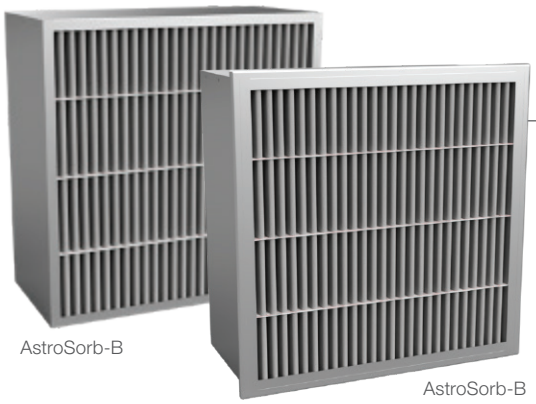


AstroSorb-B

AstroSorb-B
with Header

# AstroSorb®-B

## GAS-PHASE **BOX** FILTER FOR MAKE-UP AIR

## Product Overview

- Removal of airborne molecular contamination in cleanroom environments. Target gases: ammonia and amines, acids (HF, HCl, $Cl_2$, NOx, SOx, $H_2S$), VOCs (toluene, PGME, PGMEA, siloxanes), ozone, others.
- High adsorption capacity and high removal efficiency.
- Single or multi-sorbent filters are available.
- Constructed of cleanroom-compatible materials that do not emit dopants, metals, organics, or other molecular contaminants at levels that would pose a risk to cleanroom processes.
- Corrosion-free, non-metal construction.
- Energy efficient mini-pleat design

## Typical Applications

- Wafer manufacturing
- Semiconductor device fabrication
- Microelectronics component assembly
- TFT/LCD manufacturing
- LTPS OLED manufacturing
- Hard disk drive manufacturing
- Biopharmaceuticals
- Genetic engineering

## Additional Features

The AstroSorb-B filter is suitable for retrofit into existing MAUs, RAU, and OACs for specification into new construction projects, or for direct replacements of 12"-deep box-type or single header filters.

Each filter is individually sealed in a polybag to prevent exposure to fugitive gaseous contaminants prior to installation at customer's site.

## Excellent Performance Against Airborne Molecular Contamination (AMC)

The AstroSorb-B is a chemical filter designed to remove airborne molecular contamination (AMC) in makeup air units (MAUs) outside air conditioning (OAC) units. Available in all standard sizes, in box-type or single header frames, the AstroSorb-B uses proprietary chemical filtration media to target specific AMC or multiple AMC in semiconductor and microelectronic manufacturing cleanrooms.

## Construction

The AstroSorb-B chemical filter with galvanized steel construction and plastic pleat spacers on the air entering and air leaving sides withstand the most demanding applications. The pleat spacers maintain the shape of the synthetic media pack and ensure that both the effectiveness and service life are maximized.

The strong construction of these filters, with a supported pleat media pack, helps maintain a compact unitized structure under variable air velocities and repeated fan shutdowns. The interlocked header and cell sides, along the entire length of each side, provide maximum sealing.

Eco EPDM gasketing is standard, with other materials available as may be specified. Filter construction is with non-emitting materials to ensure that cleanroom environmental conditions are met.

## Media

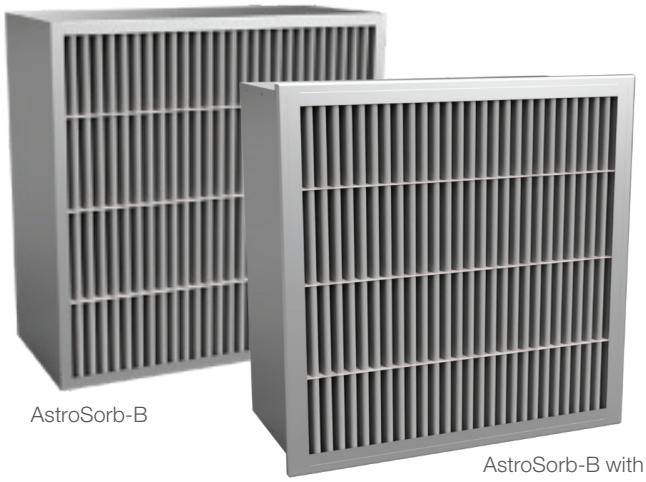
The AstroSorb-B filter is a chemical air filter composed of pleated adsorbent-loaded nonwoven fiber (ALNF) media designed to remove AMC that may be introduced through MAUs, RAUs, and OACs that can affect critical semiconductor fabrication processes and manufacturing applications.

Depending on the target gases, the type and quantity of adsorbents in the media, as well as the pleat configuration, can be adjusted to provide a filter that meets the customer's specific AMC control requirements.

The adsorbent materials used can be tailored to suit specific AMC control applications:

- MA for Acids; a corrosive gas that reacts chemically as an acid (an electron acceptor).
- MB for Bases; a corrosive gas that reacts chemically as a base (an electron donor).
- MC for Condensables; a contaminant whose boiling point is typically above room temperature and is capable of condensing on a (wafer) surface.
- MD for Dopants; a contaminant that modifies the electrical properties of (semiconductor) material.

# AstroSorb®-B | GAS-PHASE **BOX** FILTER FOR MAKE-UP AIR

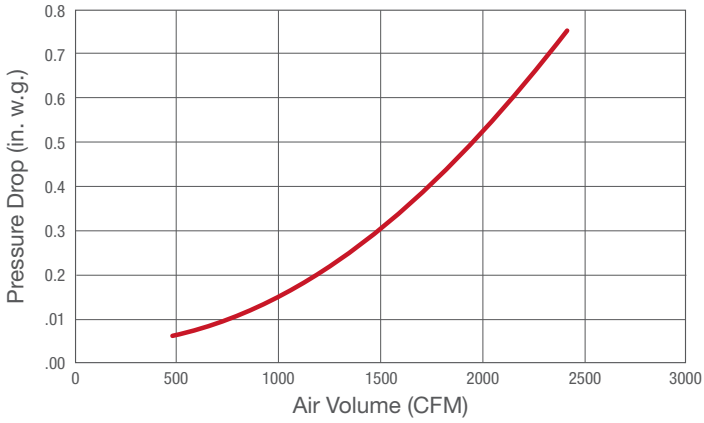


AstroSorb-B

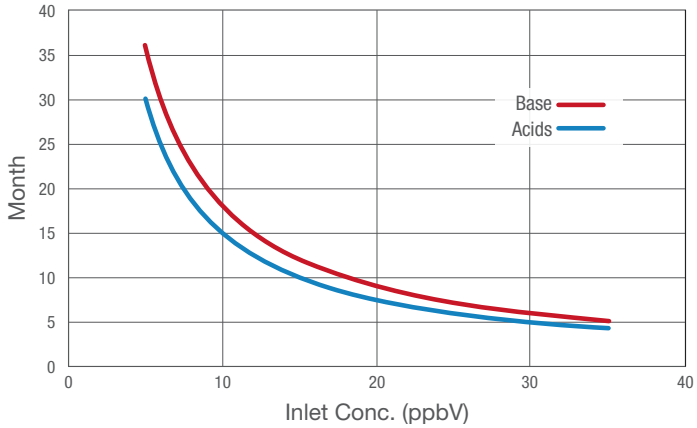
AstroSorb-B with Header

## Performance Data

### Pressure Drop




### Lifespan Curve




## General Specification

| Box Filter for Make-up Air | |
|---|---|
| Filter type | Box-Type or Single-Header Type |
| Application | Make-Up Air Unit (MAU) |
| Adsorbent | Activated Carbon<br>Impregnated Activated Carbon<br>Ion Exchange Resin |
| Non-woven | Polypropylene (PP) |
| Binder | Hot Melt |
| Frame | Galvanized Steel or Anodized Aluminum |
| Sealant | Urethane |
| Gasket | Eco EPDM |
| Temperature (°F) | 59 ± 5 |
| Humidity (%) | 75 ± 5 |
| Standard Size (in) | 24 x 24 x 12 (nom.) |
| Weight (lb) | 31 ± 4 |
| Typical Air Flow Rate (CFM) | 0 – 2,500 |
| Target Gases | $NH_3$, Amines<br>Acids (HF, HCl, $Cl_2$, NOx, SOx, $H_2S$)<br>VOCs (Toluene, PGMEA, Siloxane)<br>$O_3$ |

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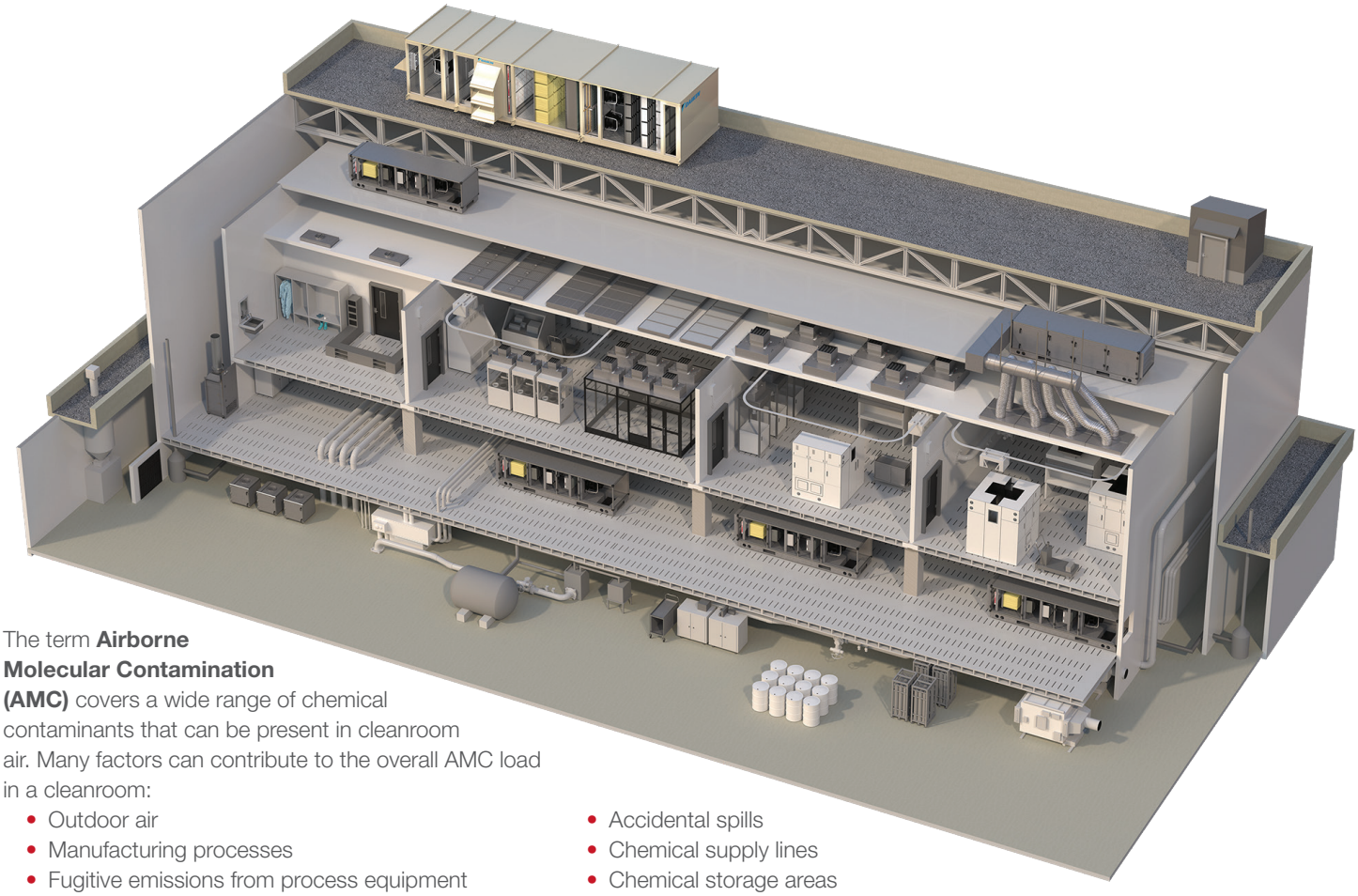
# AstroSorb® | CONTROLLING AMC IN MICROELECTRONICS

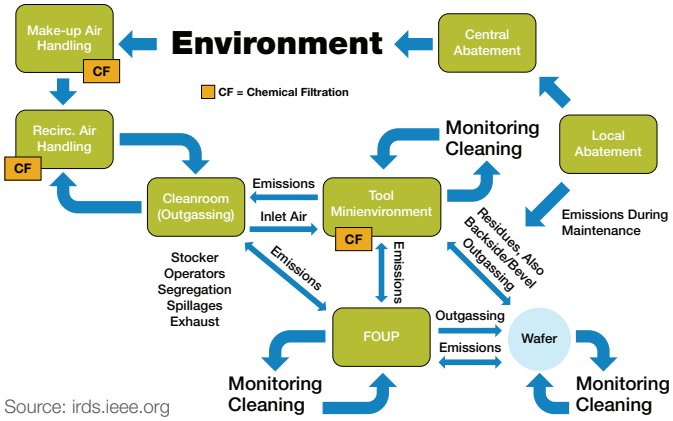


The term **Airborne Molecular Contamination (AMC)** covers a wide range of chemical contaminants that can be present in cleanroom air. Many factors can contribute to the overall AMC load in a cleanroom:

- Outdoor air
- Manufacturing processes
- Fugitive emissions from process equipment
- Off-gassing from building and construction materials
- Cross-contamination between manufacturing areas
- Accidental spills
- Chemical supply lines
- Chemical storage areas
- Bioeffluents from cleanroom personnel

AMC can be detrimental to many processes and products and can also represent considerable health hazards to personnel.

## International Roadmap for Devices and Systems (IRDS 2023)

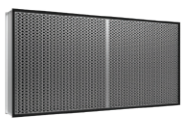



Source: irds.ieee.org

**Meeting AMC Requirements: The Total AMC Concept**

AAF is involved with ongoing updates to the IRDS in general and more specifically on the topic of AMC control. **The Total AMC Concept** takes into account sources of AMC as well as where local control is required and AAF solutions should be applied.

## AAF's complete line of AMC filtration solutions



**AstroSorb-P**
Panel Filters for Fan Filter Unit Applications

**AstroSorb-B**
Box Filters for Make-up Air Applications

**AstroSorb-V**
V-Bank Filters for Make-up Air Applications

**AstroSorb-T**
Tray Filters for Make-up Air Applications

**AstroSorb-C**
Canister Filters for Make-up Air Applications

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AAF International has a policy of continuous product research and improvement. We reserve the right to change design and specifications without notice.



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