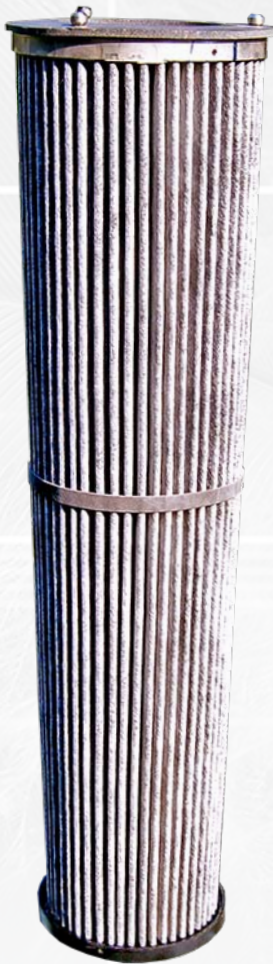


CARBOTEX ACYL-AS & AZ

TO REDUCE AIRBORNE MOLECULAR CONTAMINATION (AMC)



- High contamination removal efficiency – even for ppb concentration levels
- High contamination removal capacities – confirmed by measurements
- Low pressure drop – saves energy
- Lightweight cartridge system
- No dust release – near zero outgassing and no discharge of adsorbed gases
- Excellent removal of Acids, Condensable and Dopants

It is becoming increasingly crucial to remove airborne molecular contamination (AMC) from the air used for critical production processes in cleanrooms and in general ventilation. Whilst particulate removal has been the priority in the past, the elimination of AMC has become the focus for future improvements of process environments or indoor air quality (IAQ).

The **Carbotex ACYL** range of filters control a wide variety of AMCs, with two types of media – **AZ** and **AS** – each suited for a broad spectrum of applications.

Compared to conventional filters, **Carbotex ACYL** offer minimal pressure drop, high specific adsorption capacities, perfect adsorbent usage and a low filter weight. The excellent adsorption efficiency, capacity and pressure drop have been carefully proven under rigorous testing and field measurements.

A P P L I C A T I O N S

Application in the Microelectronics and Cleanroom Industries

In addition to chemically filtering external make-up air for the removal of environment-based VOC, SO_x and NO_x type contaminants, it is also important to account for chemical contaminants created within the facility. Outgassing of building materials as well as chemical processes inside the production facility – including photolithographic processes, acid etching, and wet cleaning/drying – may produce dangerous and yield-reducing levels of alkaline, acidic, and organic molecular contamination. The **Carbotex ACYL** gas adsorption filters are a low energy-consuming method for achieving “clean” process air environments in semiconductor manufacturing and other critical applications.

Application in HVAC

Carbotex ACYL are ideal for removing odours and improving IAQ in air conditioned buildings – an important contribution to the cure of “sick building syndrome” (SBS). **Carbotex ACYL** filters are designed for those cases in which the gas concentrations are in the lower ppm range. Such contaminations may cause the occupants unpleasant physical reactions, e.g. headaches, nausea, etc.



Left: 16 **Carbotex ACYL** cartridges for duct installation.

Carbotex ACYL-AZ filters are particularly effective against:

Carbotex ACYL-AS filters are particularly effective against acidic gases, including:

- Nitrogen oxides (NO₂, NO_x, HNO_x)
- Sulphur oxides (SO₂, SO₄)
- Hydrogen sulfide (H₂S)
- Sulfuric acid (H₂SO₄)
- Hydrochloric acid (HCl)
- Chlorine (Cl₂, BCL₃)
- Hydrofluoric acid (HF)
- F₂, SF₆, SiF₄, TEOS, BF₃

- Hydrocarbons (HC's) or volatile organic compounds (VOC's)
- Condensables: (Toluene, Silicones, Organosulfates, Trisilanol, DOP, BHT, Siloxane)
- MEK, PGMEA, PGME, THFA
- Smog, ozone, etc. (antropogenes)
- Combustion and diesel gases
- Asphalt, tar, petrol, kerosene and other fuel vapours
- Solvent and thinner vapours from paint and varnish
- Glue, rubber or cleaning agent vapours
- General personnel, cosmetic and tobacco smoke odours
- Hospital, alcohol and antiseptics odours
- Cooking, food and decaying food odours
- Many other gaseous contaminants

Technical data		
Rated Air Flow V_R	m ³ /h	2800
Pressure Drop at V_R (16 cartridges)	Pa	55
Requested Air Flow V_M	m ³ /h	3500
Pressure Drop at V_M (16 cartridges)	Pa	82
Activated Carbon Weight (per cartridge)	kg	9.5
Initial Efficiency for Toluene (Type AZ) ^[1]	%	> 93
Toluene Sorption Capacity at V_R (Type AZ) ^[1]	ppb h	105,000
Initial Efficiency for Sulfur Dioxide (Type AS) ^[1]	%	> 90
Sulfur Dioxide Sorption Capacity at V_R (Type AS) ^[1]	ppb·h	60,000
Maximum Operating Temperature	°C	< 50
Recommended Operating Temperature	°C	< 30
Relative Humidity	%	< 80
Recommended Relative Humidity:		
– ACYL-AS ^[2]	%	< 40
– ACYL-AZ ^[2]	%	< 60
Minimum Pre-Filtration Required ^[3]	–	> F6
Recommended Pre-Filtration ^[3]	–	F9

Design	
Diameter Inlet Flange	145 mm
Length of the Cartridge	564 mm
Weight of a Cartridge	1250 g

Materials	
Frame	ABS Plastic
Filter Media	Composite fibres with various types of adsorbents
Sealant	Polyurethane
Gasket	PU-foamed

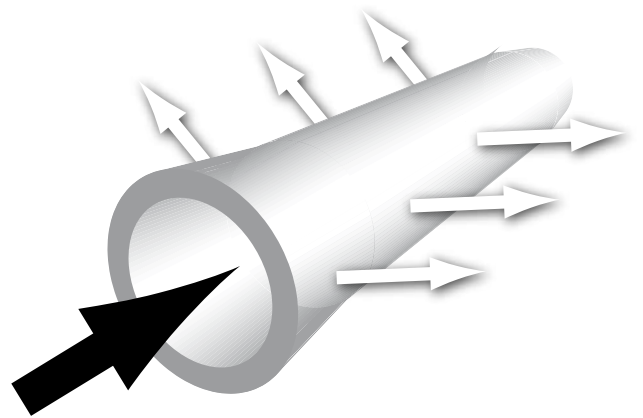
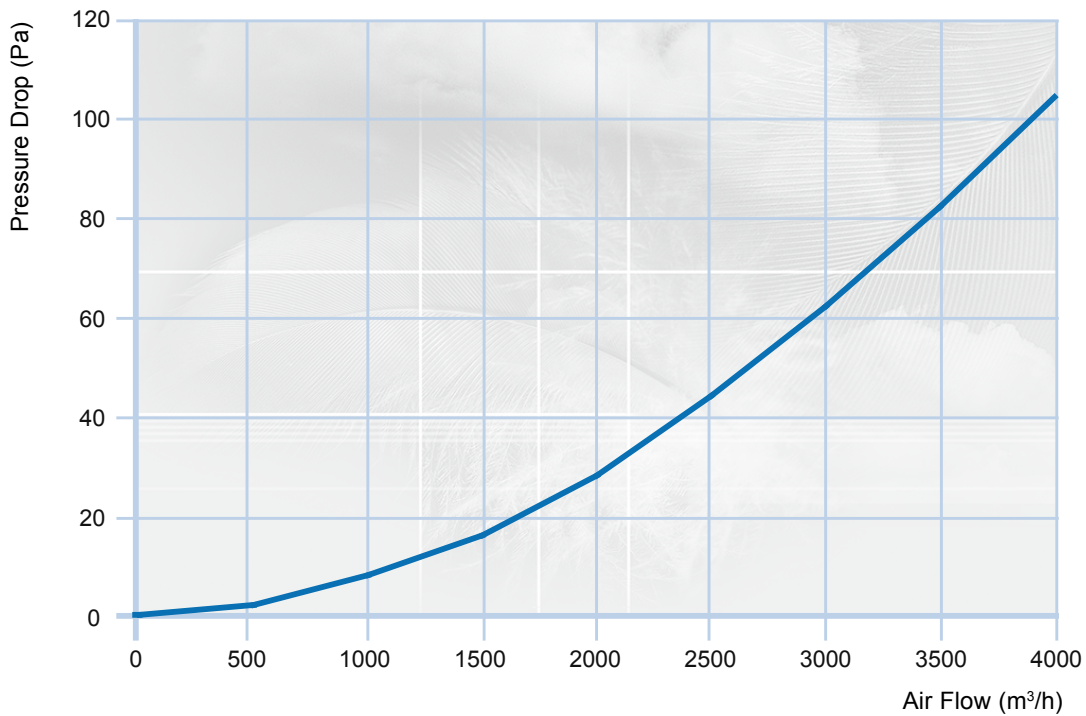
Notes

[1] Test conditions – 80% efficiency, Temperature: 23 °C, Relative Humidity: 50 %

[2] Ignoring this condition causes an efficiency reduction. Ignoring more than one condition would cause significant loss of performance.

[3] Particle prefilters for the ACYL filters significantly prolong its life and are strongly recommended.

Differential Pressure Drop (for 16 cartridge installation)



The aerodynamic, conical design of the **Carbotex ACYL** ensures an even flow of air through the cartridge, extending filter life and reducing pressure drop.