



VOKES AIR

Taking small steps together, always ahead, towards a better world



AFP-AZ Process

Removal of trace air constituents in process applications



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Removal of trace air constituents in process applications

APPLICATIONS



Clean Air



Power Generation



Clean Room



Industrial

KEY FACTS

- ▶ **Standard air flow 2500 m³/h**
Suitable for even the most demanding of applications
- ▶ **Low pressure drop**
Reduces energy consumption and lowers operating costs
- ▶ **Optimised flow design**
For low, stable pressure drop and homogenous air flow
- ▶ **Composite media**
No particle generation
- ▶ **Lightweight**
For simple filter change
- ▶ **Activated carbon media**
Designed specifically for process air applications
- ▶ **Large filter surface 10 m²**
For high efficiency and long service life
- ▶ **Both incinerable or non-flammable frame systems available**
For simple disposal and demanding applications
- ▶ **Fits standard air handling units**
For simple, low cost installation and switchover

AFP-AZ Process adsorption filters are applied where even small concentrations of gases in the air have an impact on the quality of products.

These processes can be in the electronic industry, such as micro-electronics and semi-conductor production, as well as in the manufacture of optics, MEMS (micro-electrical-mechanical systems) or high-precision mechanical devices.

Moreover, AFP-AZ Process filters are to protect precious objects and artefacts in museums and libraries from the deteriorating effects of trace gases in the air.

AFP-AZ Process filters contain a composite filter material including fine granules of specially designed activated carbon. The activated carbon is a non-impregnated version for maximum performance on a broad variety of Volatile Organic Compounds (VOC) as well as Condensable Organic Compounds (COC); condensables as per ISO/FDIS 1464 4-8:2005).

AFP-AZ Process filters are available in 4 standard sizes.

▼ AFP-AZ Process



Design

AFP filters are designed as rigid cellular 4-V filters with mini-pleated media in a header frame, to fulfil the demands of industrial applications.

Due to the rigid cellular design the AFP filter series can be applied in any orientation without effects on the technical characteristics, such as pressure drop or adsorption performance. Using a mini-pleated composite media, there is no risk of settlement of sorbent material and leakage as in systems using sorbents in bulk form. The design of the composite filter material, the production parameters and the optimised flow design of the rigid cell, provide the best possible conditions for low and stable pressure drop in operation, as well as homogeneous filter flow.

The design of the composite material is comparable to a fixed bed of microgranular sorbent particles. Fixation of the granules by a three-dimensional connecting PU-fibre network prevents movement and settlement of sorbent in the air stream. Hence the dense packing guarantees of high filtration efficiencies for trace gas components and ideal pleat shape. No particles or dust are generated by AFP filter material as can be proven by particle measurements downstream of the filter during operation.

Areas of Application

AFP-AZ Process filters are particularly effective in the removal of:

- ▶ Hospital and antiseptic odours
- ▶ Volatile organic compounds (VOC) or hydrocarbons from air streams in recirculated air or fresh air for production under clean room conditions
- ▶ Condensables (COC) as per ISO/FDIS 14644-8: 2005 from air streams in recirculated air or fresh air for production under clean room conditions
- ▶ Dopants as organo-phosphorous compounds or organo-boron compounds from air streams in production processes
- ▶ Ozone from outside air supplies or air recirculation
- ▶ Odorous combustion products, kerosene and diesel
- ▶ Many other gaseous contaminants
- ▶ Organic solvent trace gases from recirculated air of production environments, such as PGMEA, PGME, acetic acid esters

Occurrence of the target compounds to be removed and applications for AFP-AZ Process filters:

- ▶ Micro-electronic industry and display manufacturing
- ▶ Optical industry and laser application
- ▶ Imaging and photography processes
- ▶ Museums and archives
- ▶ Airports, office buildings and hospitals

▼ AFP-AZ Process product detail



Installation

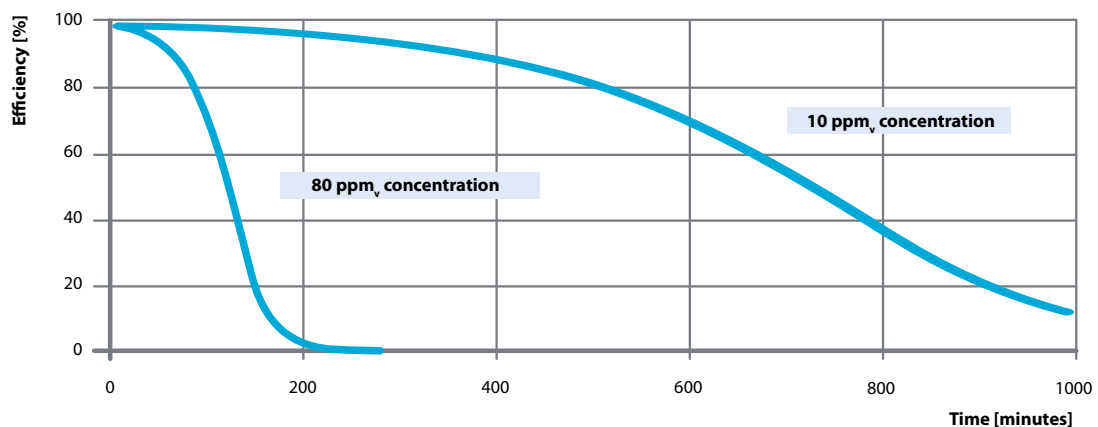
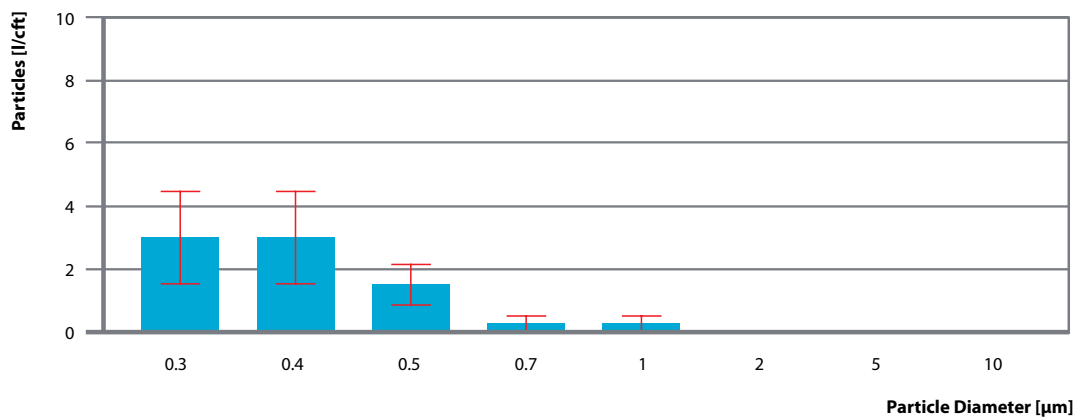
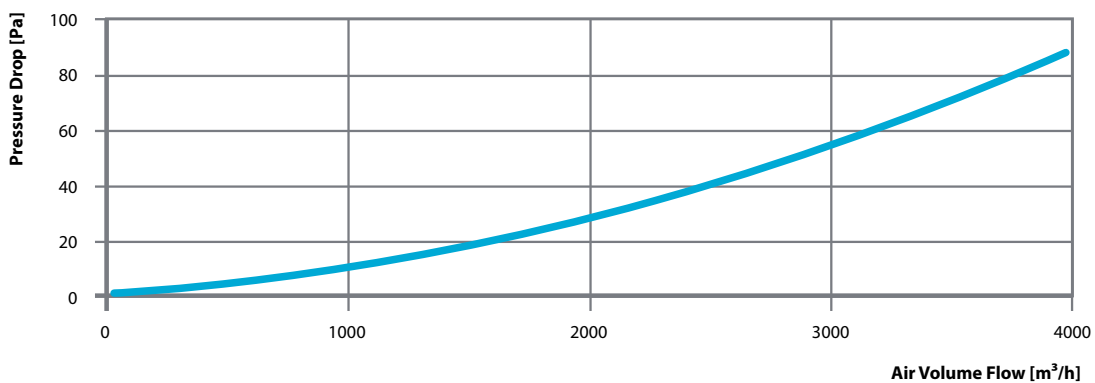
AFP Process filters can be easily installed in standard fine dust filter frames. F-frames can be combined with filter barriers and installed into ducts, air conditioning units and wall openings.

Disposal

AFP Process filters used under standard operation conditions to remove trace contaminations from process air environments can be disposed in the same way as normal industrial waste (e.g. incineration, landfill).

Filters soiled by toxic and/or radioactive constituents must be disposed as hazardous waste in accordance with local regulations.

Pressure Drop versus Air Flow (for AZ-610)



Technical Data	AFP-	AZ-610-P	AZ-508-P	AZ-420-P	AZ-305-P
Nominal air flow V_n (normal service life)	m ³ /h	2500	2000	1650	1250
Pressure drop at V_n	Pa	45	45	50	50
Rated air flow V_r (long service life)	m ³ /h	1800	1450	1200	900
Pressure drop at V_r	Pa	25	25	30	30
Total weight of filter	kg	10.1	8.5	6.7	5.1
Sorbent net weight	kg	5.7	4.6	4.2	2.6
Filter medium area	m ²	10.2	8.3	7.1	4.7
Initial efficiency at rated air flow	%	98	98	98	98
Adsorption capacity at rated air flow V_r ¹⁾	ppb.h	125,000	125,000	125,000	125,000

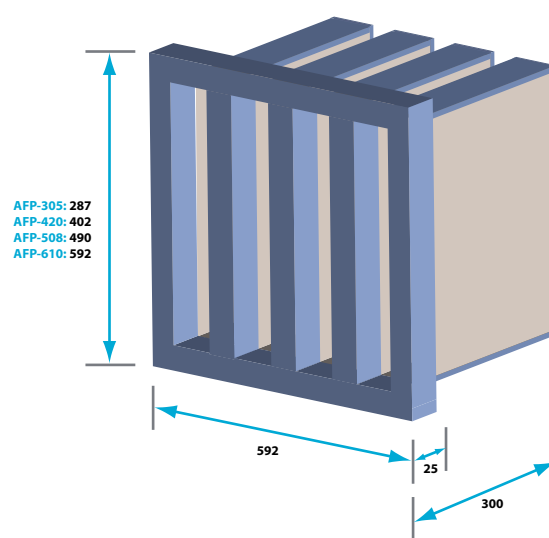
1) for sulfur dioxide, 23°C, 50% r.h. to 80% efficiency

Operation Conditions

Maximum Operating Temperature	< 50 °C
Recommended Operating Temperature	< 30°C
Maximum Relative Humidity	< 90%
Recommended Relative Humidity	< 30% < x < 60%
Minimum Pre-Filtration	F6
Recommended Pre-Filtration	F9
Back-Up Filtration Required	None – no particle shedding

Materials

Frame Material	Polystyrene, free from halogenated compounds, incinerable
Filter Material (HT-version)	Polyamide, galvanized steel, non-flammable, UL 94 V0 frame version
Filter Material	Synthetic fibre composite material, fine grain sorbents embedded in fibre matrix
Sealant	Polyurethane



▲ Dimensions (mm)



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