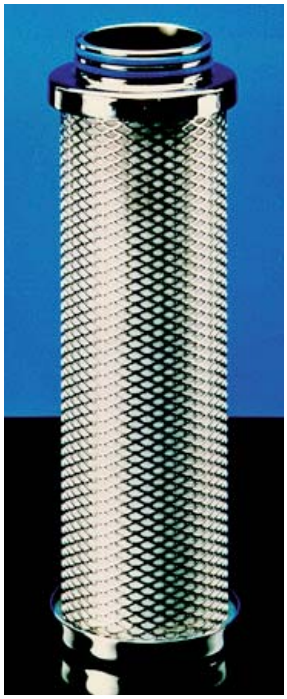
# Compressed Air Filtration

# AG / SG / HD Adsorption Filter AK

## MAIN FEATURES & BENEFITS:

- Activated carbon filter with integrated particle filter for the retention of oil vapours, hydrocarbons and odours as well as particles from compressed air or gases in industrial applications
- Innovative filtration technology; high adsorption capacity and retention rate with low differential pressure
- Validated performance data acc. to ISO 12500; reliable achievement of compressed air quality acc. to ISO 8573-1
- Flow-optimised design, minimum pressure loss for economic compressed air purification (saving of energy costs)



Depth filter AK

## INDUSTRIES

- Chemical and pharmaceutical industry

- PCB assembly and CD manufacturing

- Surface finishing

- Machine building industry and plant engineering / construction

- Energy and power generation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## PRODUCT DESCRIPTION

The adsorption filter AK consists of 2 filter stages. At the adsorption stage oil vapour, hydrocarbons and odours are removed by activated carbon adsorption. Particles are removed at the depth filter stage, consisting of microfibre fleece. In addition, support fleece and an outer stainless steel support sleeve ensure proper fixation of the adsorption and filter stage.

The flow direction through the filter is from inside to outside.
At appropriate prepurification (see „Recommended prepurification“) a residual oil content of < 0,003 mg/m³ is achieved.

The specified performance data for the achievement of the compressed air quality classes according to ISO 8573-1 were validated according to ISO 12500-2.

**Cross section of the depth filter AK**

**The AK filter element is designed and developed for the following applications:**

- **Downstream applications:**
  Final filtration for control and process air, processing of technical oil-free compressed air
- **Breathing air applications:**
  Removal of oil vapours, miscellaneous hydrocarbons as well as particles in breathing air applications
- **Automotive industry:**
  Purification of paint and lacqering finishing air

## PRODUCT SPECIFICATIONS

| Features | Benefits |
|---|---|
| Intelligent overall concept | Flow range, filtration grades, efficiencies and available options perfectly meet requirements of air purification |
| Flow-optimised Design | Minimum pressure losses, thereby savings of energy costs |
| High packing density and inner surface of activated carbon medium | High adsorption capacity and improved efficiency guarantee optimum purification performance over the whole life time |
| Microfibre fleece depth filter stage at filter outlet | Improvement of particle retention - class 1 acc. to ISO8573-1 achievable |

| Materials | |
|---|---|
| Adsorption stage | Activated carbon granulate on support fleece |
| Filter medium (particle filter stage) | Binderfree borosilicate |
| Support fleece | Polyamide fleece |
| Bonding | Polyurethane |
| End caps | Aluminium |
| O-Rings | Viton:<br>silicone free and free of compound (standard) |
| Support liners | Stainless steel 1.4301/ 304 |

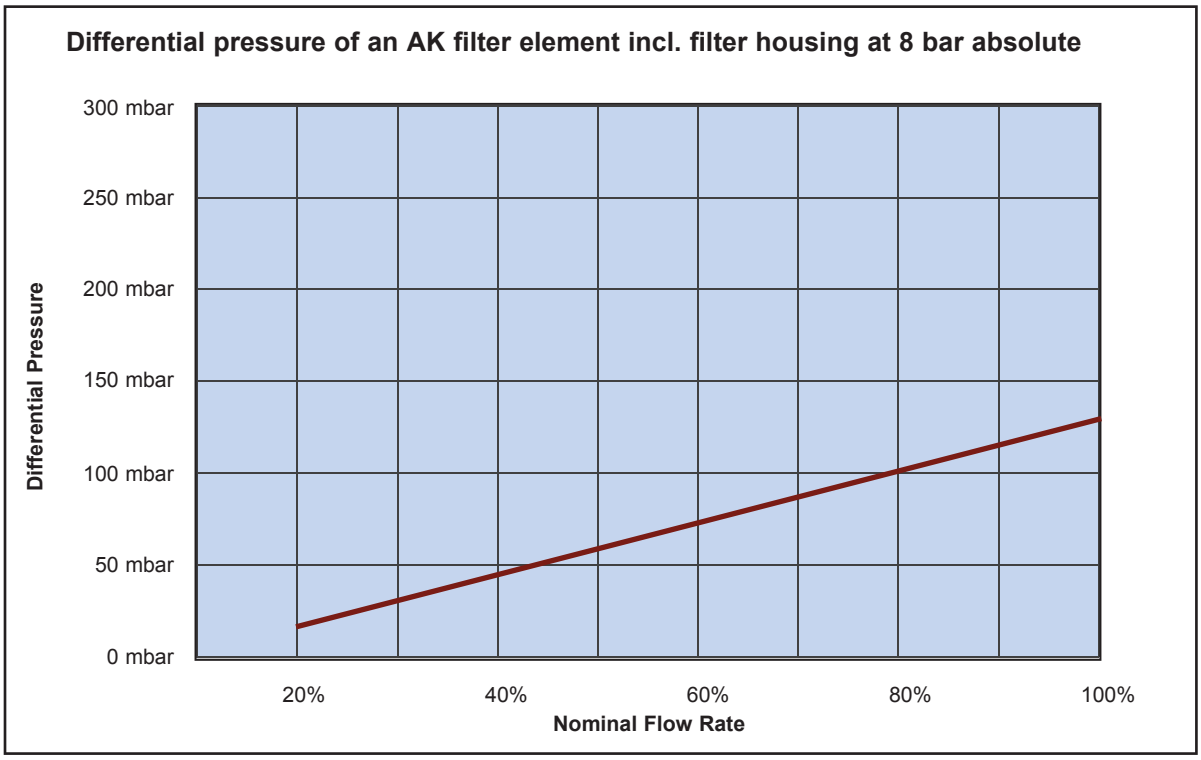
| Adsorption effiency of A (some examples) | | | |
|---|---|---|---|
| Oil vapour | A | Methyl acetate | B |
| Benzene | A | Sulphuric acid | A |
| Ethane | D | Hydrogen sulphide | C |
| Toluene | A | Chlorine | B |
| Acetic acid | A | Freon | C |
| Methanol | B | Ammonia | C |
| Acetone | B | Citrus fruits | A |
| Isopropyl ether | A | Parfumes | A |

| Key |
|---|
| A = very good |
| B = good |
| C = poor |
| D = slight |

## PERFORMANCE DATA

| Application data | |
|---|---|
| Recommended application temperature: | +10°C...+40°C (Tmax = +60°C) |
| Recommended prepurification: | Residual oil content (aerosols) < 0,01 mg/m³,<br>e.g. by sub microfilter |

## PERFORMANCE DATA




| Operating pressure bar g | 1 | 2 | 3 | 4 | 5 | 6 | **7** | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conversion factor fp | 0,25 | 0,38 | 0,50 | 0,63 | 0,75 | 0,88 | **1,00** | 1,13 | 1,25 | 1,38 | 1,50 | 1,63 | 1,75 | 1,88 | 2,00 | 2,13 |

| Element Type | Nominal Flow Rate at 7 bar g m³/h* | Sizing example for pressure which deviates from nominal pressure |
|---|---|---|
| 02/05 | 20 | $V_{nom}$ = 192 m³/h, operating pressure = 9 bar (g)<br>$V_{korr} = \frac{V_{nom}}{fp}$<br>$V_{korr} = \frac{192\ m^3/h}{1,25} = 153,6\ m^3/h$<br>**Calculated size: Type 05/20** |
| 03/05 | 40 | |
| 03/10 | 60 | |
| 04/10 | 90 | |
| 04/20 | 120 | |
| 05/20 | 180 | |
| 05/25 | 270 | |
| 07/25 | 360 | |
| 07/30 | 480 | |
| 10/30 | 720 | |
| 15/30 | 1080 | |
| 20/30 | 1440 | |
| 30/30 | 1920 | |
| 30/50 | 2880 | |

* m³ related to 1 bar abs. and 20°C

## CERTIFICATE

# Certificate of compliance with the order

according to
DIN EN 10204 2.2

Confirmation of Design and Performance Data with Test Report.

| Filter type | AK | Filter size | 02/05 - 30/50 |
|---|---|---|---|
| **Retention of oil vapours** | | | |
| Residual oil content (total) at appropriate prepurification | | | < 0,003 mg/m³ |
| Service life of the activated carbon stage | | | up to 2000 operating hours (depending on pre purification, operating temperature, operating pressure, volume flow and oil grade) |

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