



**BIO PROCESS TECHNOLOGY  
EXHAUST AIR**

***ALPINAIR***<sup>®</sup>

**EXHAUST - AIR  
FILT SYSTEMS**

**INNOVATIVE SYSTEM  
FOR THE PURIFICATION OF  
INDUSTRIALLY POLLUTED  
EXHAUST STREAMS**

**Odor remove  
Decontamination of solvers  
Sterilisation of the exhaust air**

**KOFEC**  
**BETTER AIR & LIQUID SOLUTIONS**

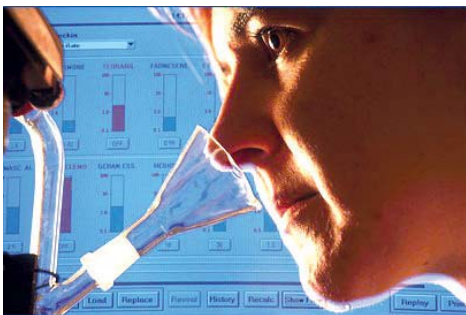


## *Industrial exhaust air treatment*

A plenty of chemical substances in industrial and communal exhaust gases may also be dangerous to health in even little concentrations (<100 ppmv = 0,01 Vol-%).

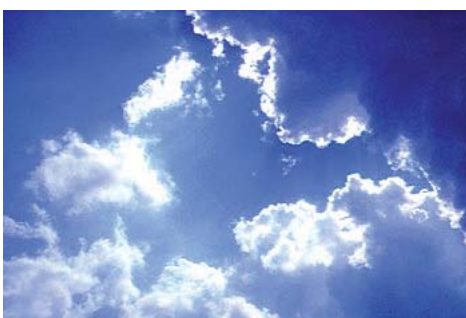
Furthermore the disturbance due to intense odour means becomes apparent with concentrations of only a few ppmv.

The removal of such few additives resp. especially the decontamination of odours is until now only possible in connection with considerable expenses as well as concerning the capital as also the operating charges



## *ALPINAIR® PLASMAFILT - a milestone*

KOFEC has developed a special procedure combination - the **ALPINAIR® PLASMAFILT** system - for the treatment of such exhaust air streams. The key component of this procedure is a not thermic plasma (NTP).



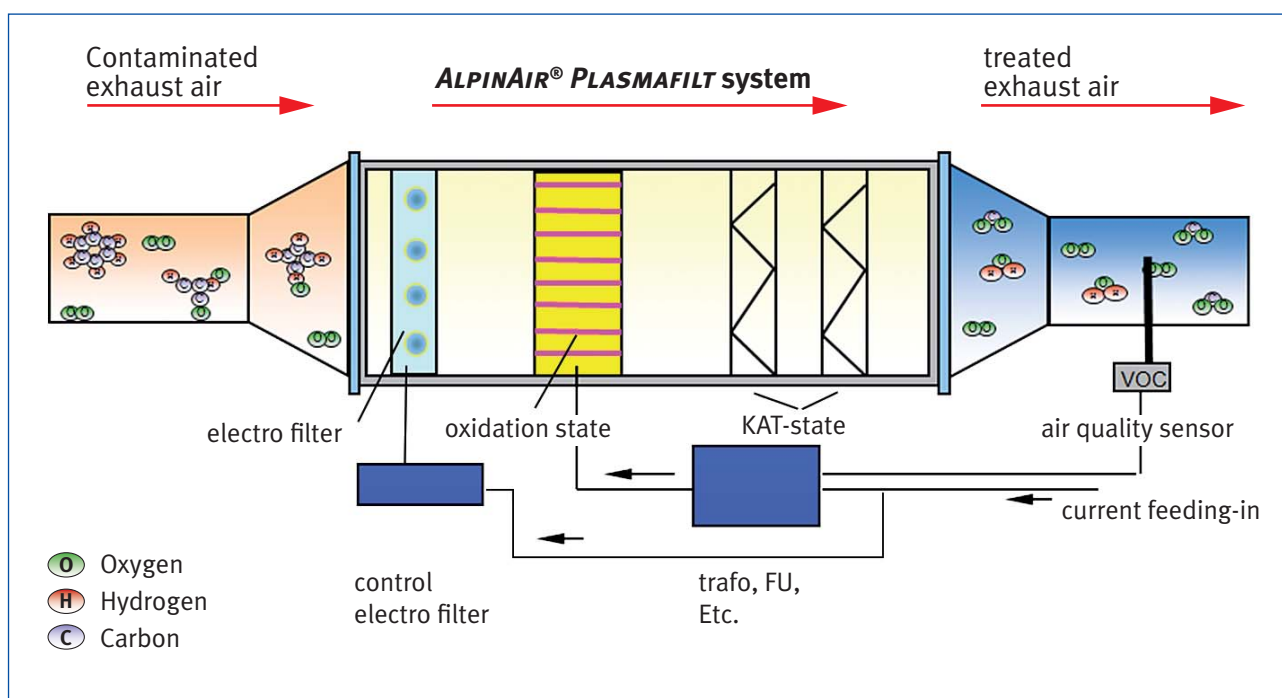
It is known that such plasma procedures represent a cheaper and especially energy efficient method for minimizing odour and for residue-free decontamination of carbon hydrogen (CH) and chlorine carbon hydrogen (CCH) charges.

The **ALPINAIR® PLASMAFILT** system is not only characterized by low operating costs but also by a high purity of the treated exhaust air and by maintenance easiness and operating security.



## *Fields of application*

- Odour decontamination
- Decontamination of solvers
- Sterilization of the exhaust air



The graphic shows schematically the construction of the **ALPINAIR® PLASMAFILT** systems

## 1. Particle filtering (electro filter or air scrubber)

Instead of bag, cell or cassette filters you have to choose electrostatic filtration units for an effective particle decontamination. By this particles are filtered out effectively and especially with the least operating costs (no filter exchange – only constant washing).

## 2. Oxidation state

If the exhaust air flows through this oxidation mist, the atoms are agitated resp. ions and ozone are produced.

The results are reactive radicals, which react with the pollutant molecules carried along and at the very best lead to the complete oxidation of the pollutant components into carbon dioxide and water.

## 3. Wear resistant catalyser

Depending on the application resp. the respective problem it may be necessary to use different catalysers.

These catalysers increase on the one hand the efficiency of the oxidation (decompose the remaining pollutants molecules) and secure the decomposition of the ozone being generated in the plasma. These catalysers are wear resistant, i.e. they have an almost unlimited duration of life.

**ALPINAIR® PLASMAFILT -  
easy and efficient**

## **4. Sensoric technology - drive**

The **ALPINAIR® PLASMAFILT** system disposes of a sophisticated control. The electrostatic filter as well as the plasma filter are fed by an individual control panel.

The control of the electro filter detects self-dependently the contamination degree of the filter and puts out an according note. (I.e. in case of a contamination of 80 % the note “filter cleaning” already appears, in order to have enough time to clean the filter).

Optionally there is available the observation of the installation by means of respective VOC sensors. These special mixture gas sensors are able to detect resp. to quantify relatively well certain pollutants (odours).

## **5. Neutralisation during the washing process**

If the particle filtering is installed as air scrubber, the VOC part in the water is possibly neutralized by the BALS Advanced Oxidation System. Cavitation + oxidation.

## **Advantages which convince:**

- Effective exhaust air purification
- Favourable purchasing and operating costs
- No wearing parts
- Secure observance of limits even when operating conditions change
- No residual products, decontamination of pollutants into CO<sub>2</sub> and water
- Easy retro-fitting for already existing systems
- Also for very big air quantities



***Know-how for  
unimitable technology***



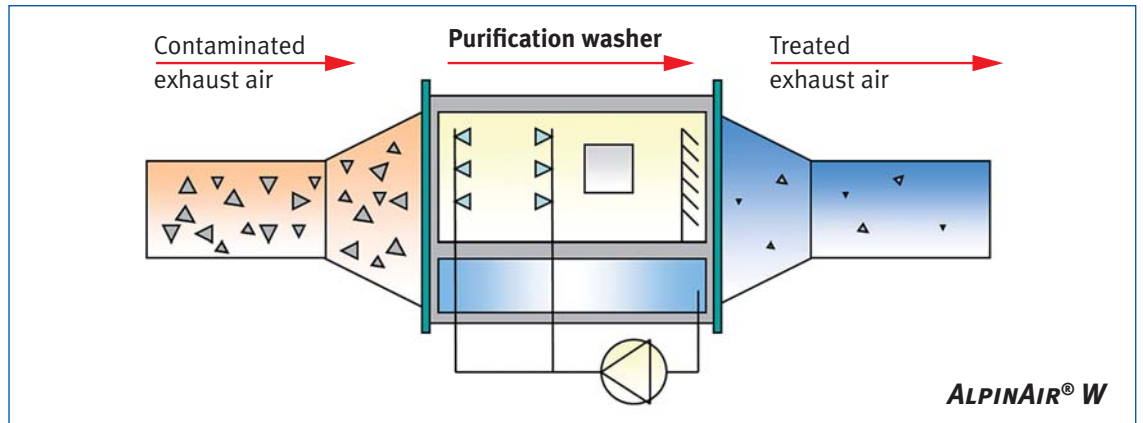
*The ALPINAIR® PLASMAFILT system has many fields of application:*

- Kitchen, restaurant and gastronomy exhaust air
- Garages, tunnel and workshop exhaust air
- General odour decontamination in the food industry (oxidation of amines, aldehydes, fatty acids, sulphuric hydrogen...)
- Decontamination of solvers – decontamination in the colour, lacquer and printing industry
- Composting installations – animal keeping
- Processing cadaver – fish – meat
- Exhaust air from metal processing plants
- General process exhaust air

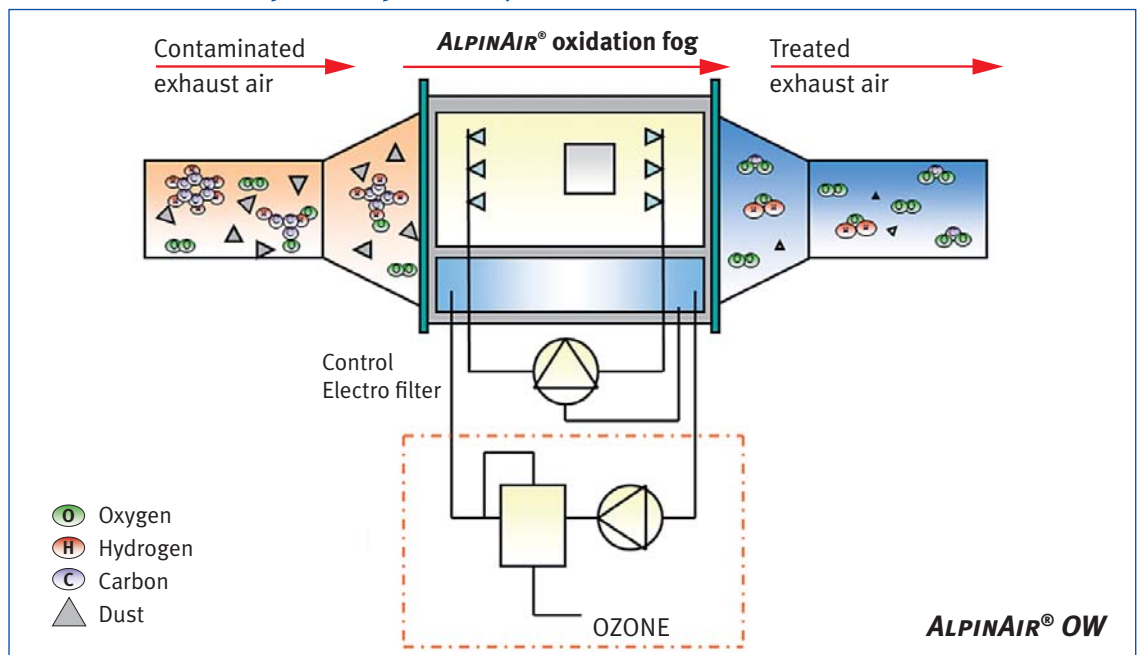


***KOFEC stands for:***  
***Highest technologic level***  
***Strong innovation force***  
***Quality guarantee***  
***Reliability***

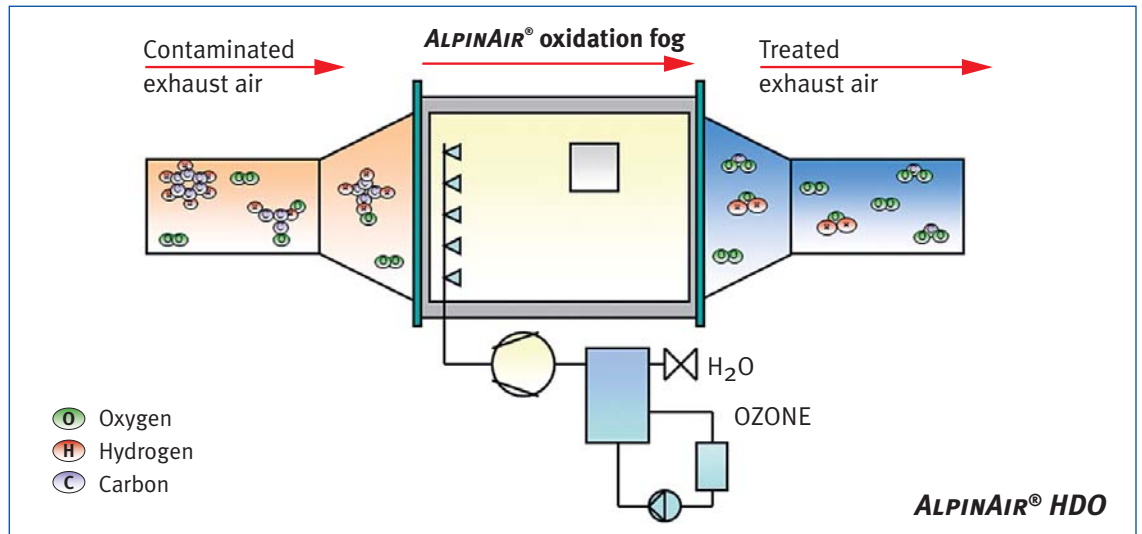
### Air treatment component particle filter



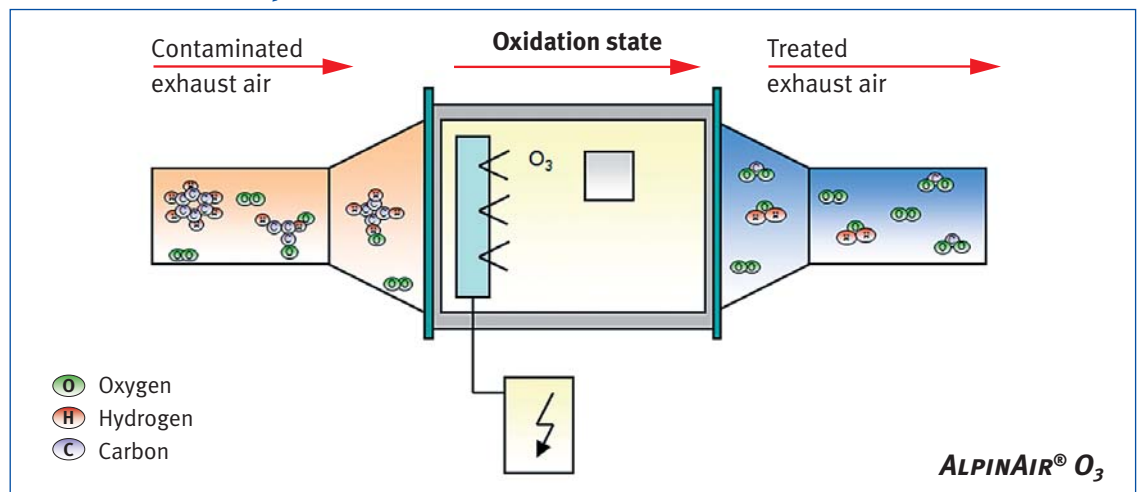
### Air treatment component particle filter + odour neutralisation



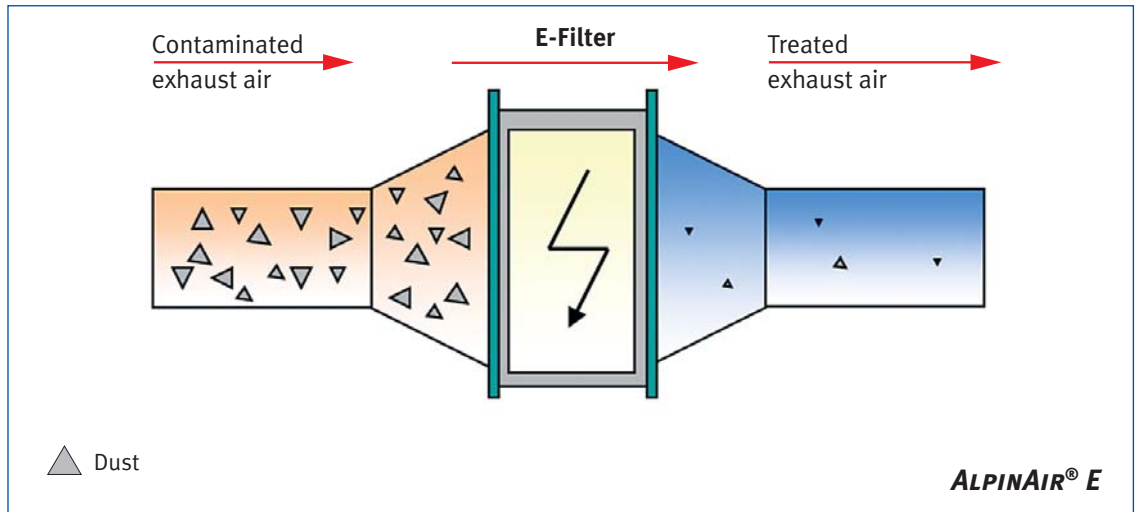
## Air treatment component odour neutralisation



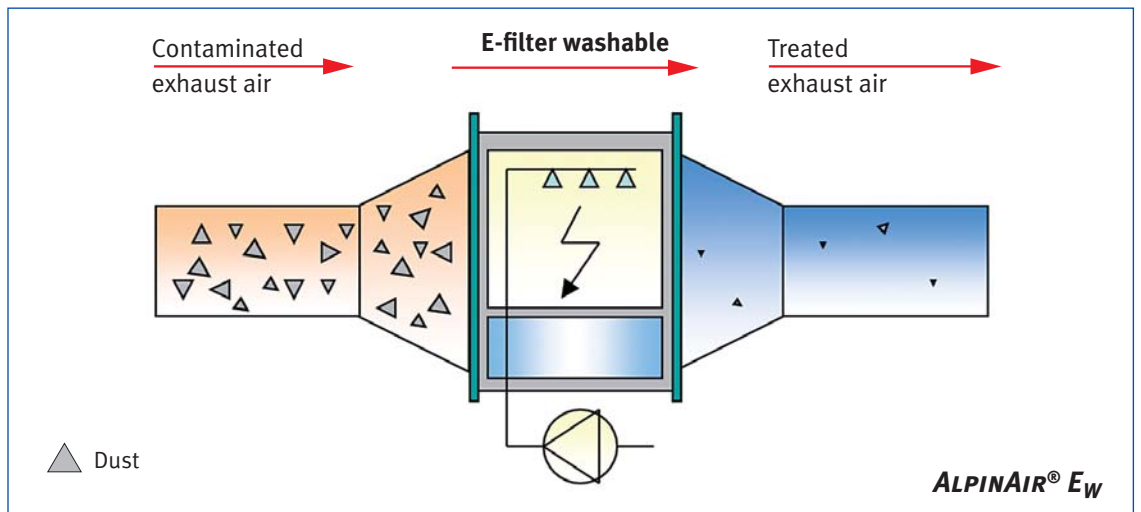
## Air treatment component odour neutralisation



### Air treatment component particle filter

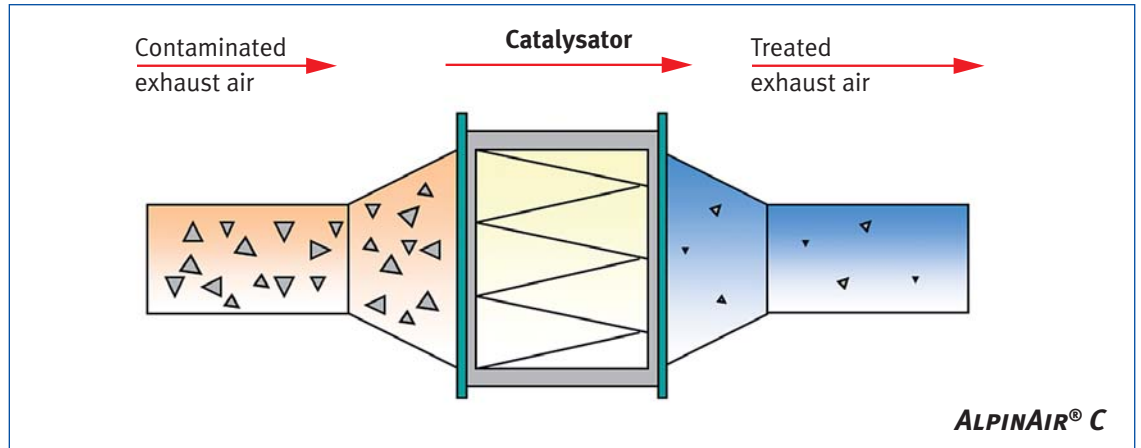


### Air treatment component particle filter

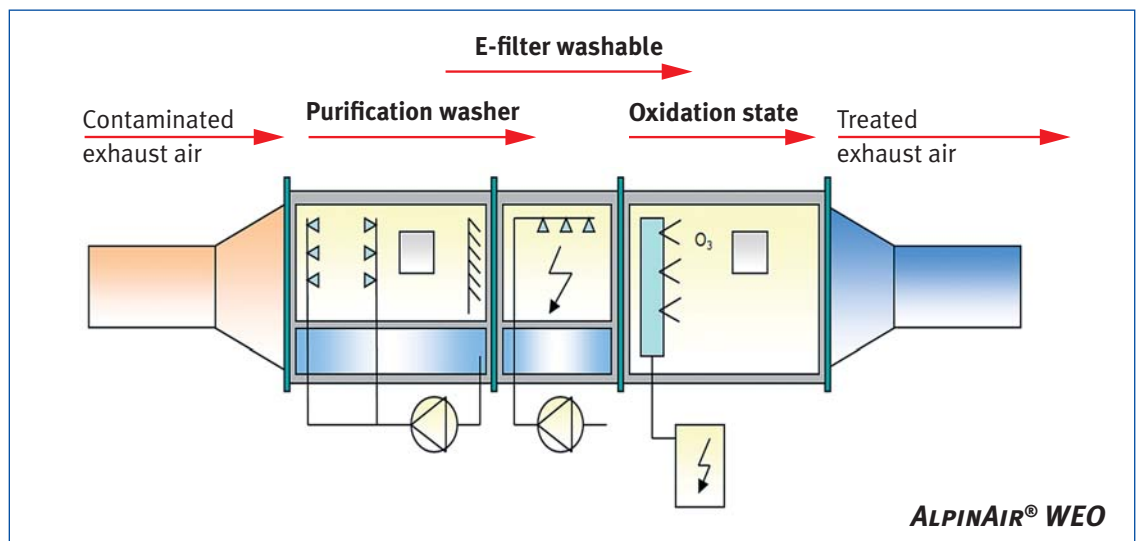




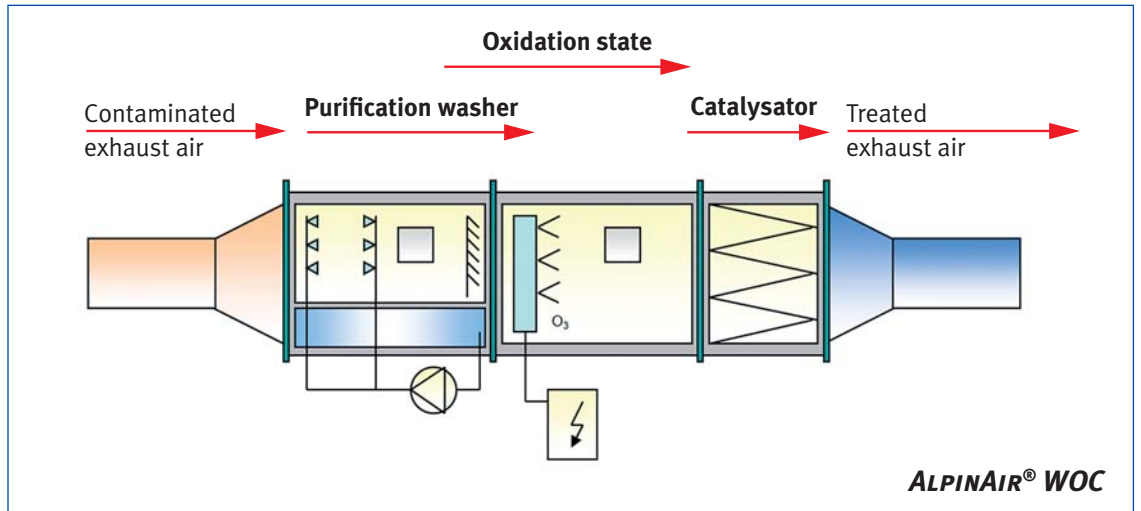
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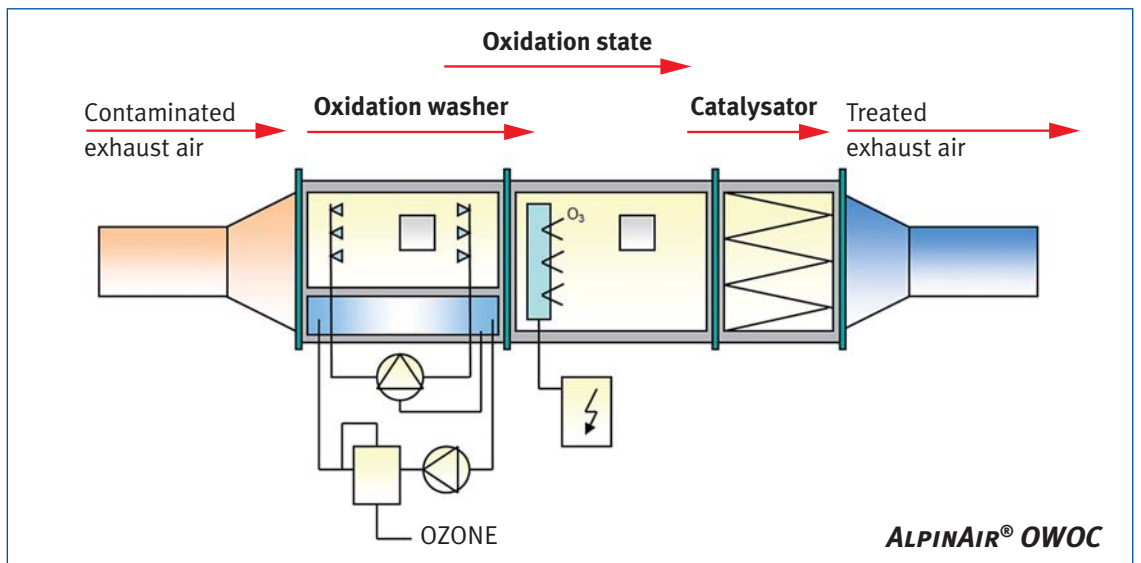
## Air treatment component - particle + odour filter



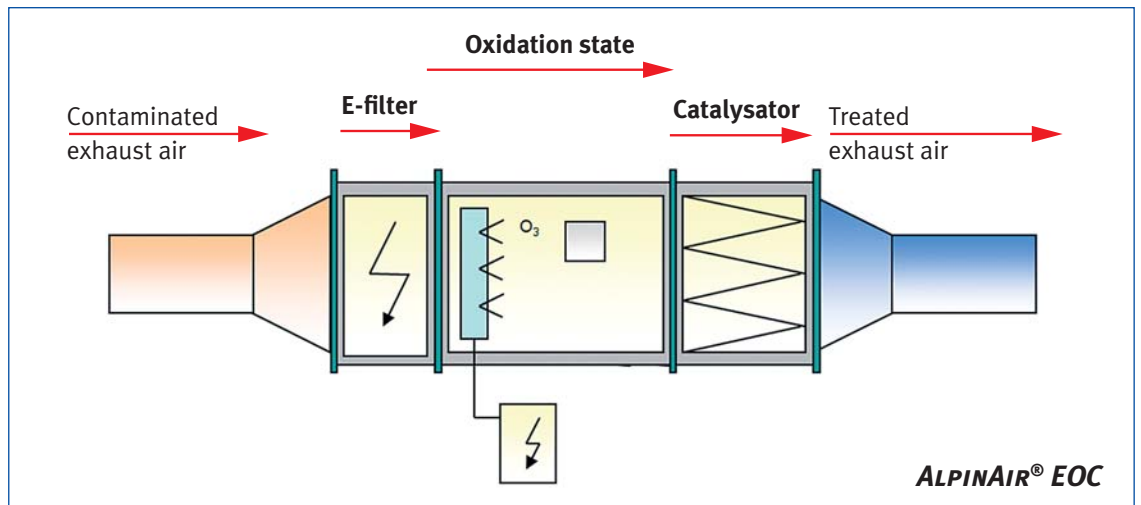
### Air treatment component - particle + odour filter



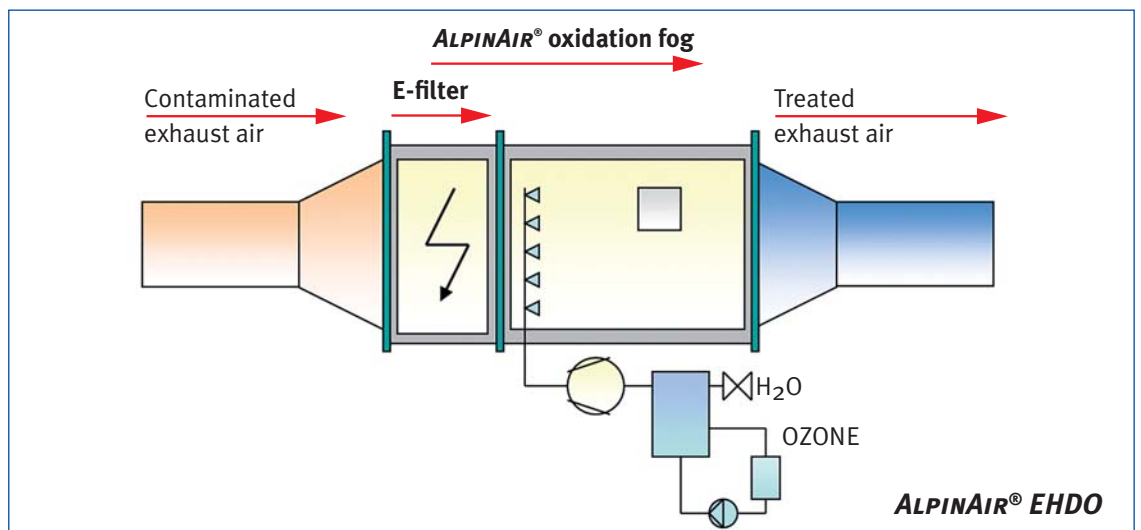
### Air treatment component - particle + odour filter



## Air treatment component - particle + odour filter



## Air treatment component - particle + odour filter





Every application of the bioprocess technology **ALPINAIR®** necessitates different treatment states.

For tests there is available a mobile installation.

Our collaborators are available for further information:

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