

# Aerox®-Injector

Industrial Odour Control



Solutions in Odour Control



# Industrial Odour Control

The human nose is very sensitive and very low concentrations of certain chemical compounds can cause irritation or discomfort. If an industrial facility or other commercial process produces such compounds, something has to be done in the interest of those living in the vicinity. There are a variety of techniques for controlling odour release. The Aerox Injector is utilised in a wide range of industries. The process converts odorous compounds into compounds that cannot be detected, before they leave the premises via a discharge stack or chimney.



## Successful Applications Aerox technology

- Oil seed processing
- Pet food
- Fish feed
- Slaughterhouses and rendering
- Poultry feed and animal feed
- Composting sludge
- Drying tobacco leaves
- Rubber tyre production
- H<sub>2</sub>S / Mercaptans removal in chemical industry and waste water treatment works



# The Aerox<sup>®</sup>-Injector

## The Aerox<sup>®</sup>-Injector - Innovative but proven Industrial Odour Control

The Aerox<sup>®</sup>-Injector has been developed for industrial odour control. The technology is proven and yet highly innovative with many attractive features.

It is not a modification of a "standard" technology. NTP (Non Thermal Plasma) technology was developed for the feed industry in cooperation with Cargill and a leading European laboratory between 1994 and 1996.

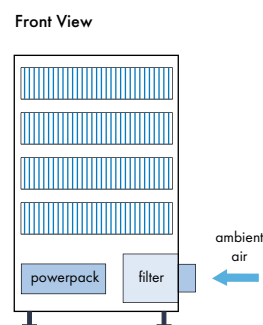
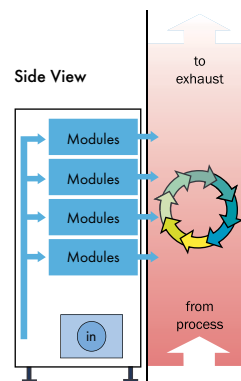
### How does the Aerox<sup>®</sup>-Injector work?

Odour removal by the Aerox<sup>®</sup>-Injector is based on high speed oxidation. The oxidised molecules cannot be detected by the human nose, hence they do not cause irritation to individuals.

The Aerox<sup>®</sup>-Injector system consists of a SS304 cabinet containing a series of special modules. Ambient air is radiated and, as a result, the oxygen and water vapour molecules in the air are dissociated. This transition is the first step in a process where eventually an extremely reactive gas is formed comprising a mixture of unstable oxygen atoms, ions, radicals etc., with elevated electron energy levels. This gas, often called 'active oxygen', has the ability to execute a high-speed oxidation reaction with the odour components after injection in the polluted air.

### Benefits:

- Very compact and easy to install against the discharge duct after cyclone/bagfilter.
- The injection principle: only ambient air is treated in the modules (NOT the process air!), before it is injected into the duct. So no contamination of the modules by the process air can occur. This results in very high reliability and low operational costs.
- No water, chemicals, carbon, biomaterial are required. Only an electrical power supply is needed.
- Lower price: No need to purchase the modules: Aerox rents the modules. We guarantee their performance over 8,000 hours of production. After this they will be regenerated. Through this arrangement the customer keeps up with our innovative technology. This is due to the modules will be modernized in the coming years. Consequently providing our customers with the latest technology after every 8,000 hours of production.
- Excellent references for many different industrial applications and approved by many authorities and regulatory organisations world wide.
- Very large air-flow (up to 100,000 m<sup>3</sup>/h) can be treated by just one compact Aerox<sup>®</sup>-Injector.
- Environmental friendly, due to low energy consumption and zero waste.
- Remote Performance Control.
- Considered as B.A.T. by many regulatory agencies.

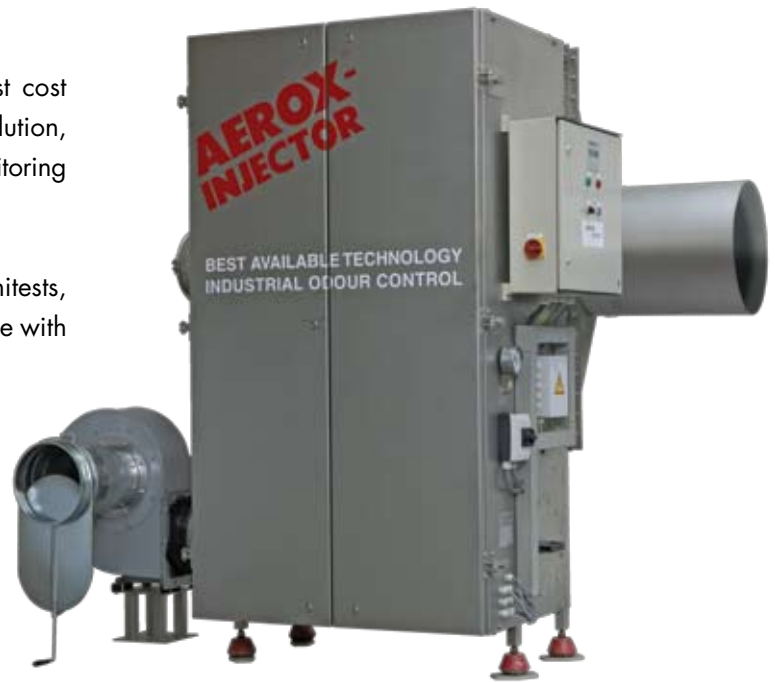


# The Aerox philosophy

To ensure Aerox advise and offer clients the most cost effective, environmentally friendly odour control solution, an on site performance test (mini-test) plus odour monitoring are important tools for the Aerox engineers.

Odour guarantees are possible, based on such minitests, if odour measurements are carried out in accordance with EN 13725:2003.

Associated test units are available.

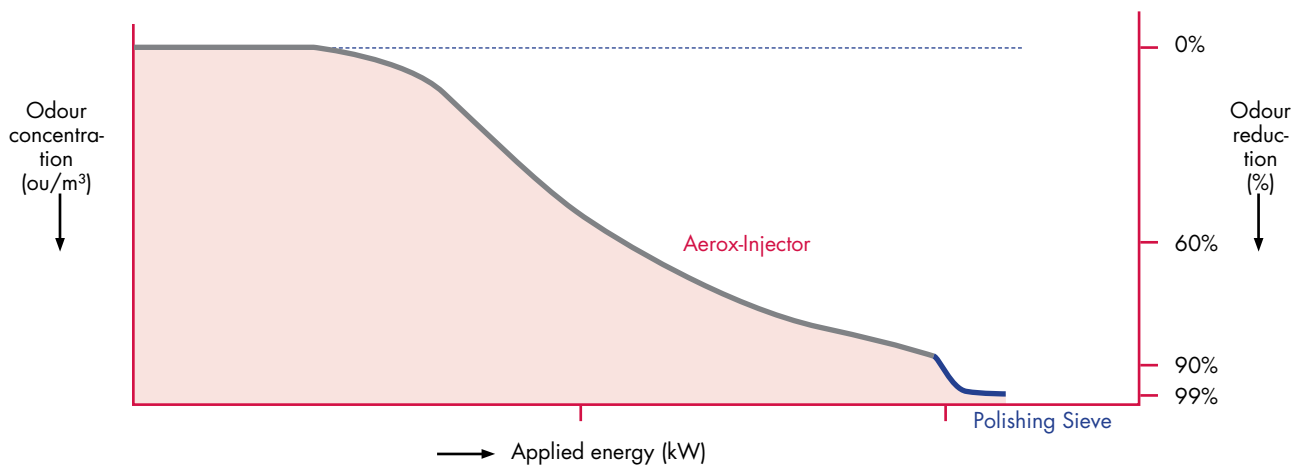


## These tests provide:

- Maximal odour reduction (%)
- Emission and Immission (to be calculated)
- Required energy per  $\text{m}^3/\text{h}$  air
- Design full scale Aerox unit

# Designing the best possible odour control

- Odour reduction is a function of:
- Nature of the Odour melange
  - Required energy /  $\text{m}^3$  air, type and quantity of Modules (Aerox®-Injector)
  - Zeolite quality and contact time (optional Aerox®-Polishing Sieve)



# The company

Aerox B.V. is a developer of industrial odour control technologies. By combining a high degree of expertise with innovation, Aerox has created total and long-term solutions for industrial odour control. The company has made its name as a specialist in the design, production, development, supply, installation and service/maintenance of odour control abatement technology. Our company's evolution has taken place in close consultation with our clients and their expectations with respect to the environment, hygiene, accuracy and flexibility. These aspects play a major role in the continuing development of the company. Based on a wide range of standard products, tailor made solutions are provided to our clients across the world. Aerox has guaranteed quality for more than thirty years.

From our Aerox office in the Netherlands, supported by our international agents network, we are able to provide local support to our customers anywhere at any time.

## What makes Aerox different from the competitors?

Aerox specialises in industrial odour control. Our application knowledge is world class and has been constantly expanding since 1974. The Aerox Injector is regarded in many countries as the 'Best Available Technology' for odour control. World market leaders in the field like Cargill, INVE, IFF, Biomat, Frutarom, Tate & Lyle, EWOS, etc. have selected our company to provide their odour control solutions because of our proven innovative products, knowledge and long-term partnership service program.

We design and manufacture the best products on the market and we work closely with renowned Universities, Laboratories and Institutes in several countries in order to stay ahead of our competitors. This is achieved through more than just a product sale. We provide a long-term odour control solutions which include our unique *Aerox Partnership Program* for lifetime guarantee, consultancy service and cost savings. Our extensive focus on:

- Odour control technology
- Global presence
- Research and development
- Satisfied customers
- On-site pilot test service

Creating the optimal environment to ensure our clients receive higher standards of products and services than offered by any of our competitors.



# The Aerox®-Polishing Sieve for total odour control

Improving the overall odour reduction efficiency is possible by installing as second step an Aerox®-Polishing Sieve after a new or existing Aerox®-Injector. The Polishing Sieve contains thin plates filled with modified zeolite.

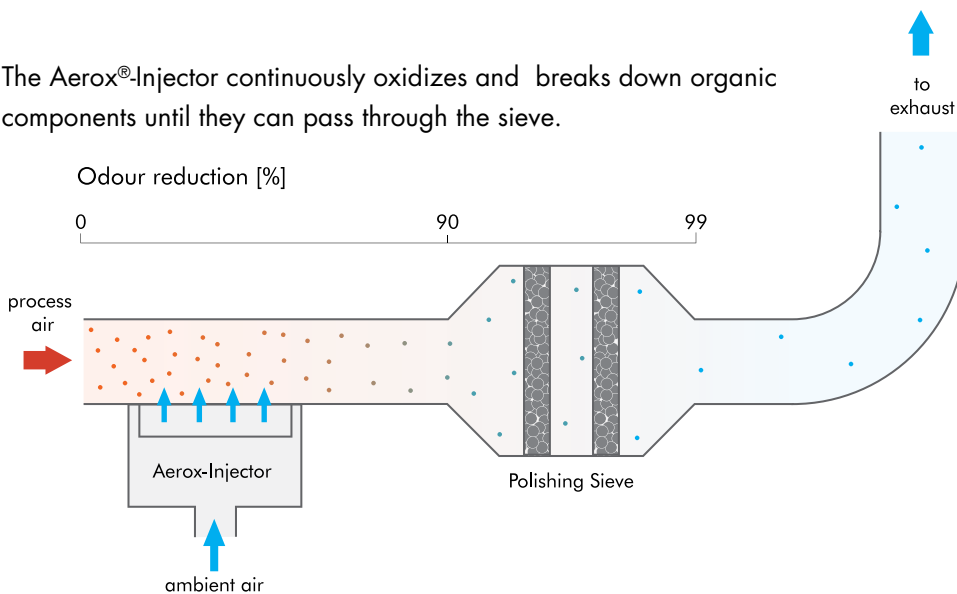
**The combination of an Aerox®-Injector plus an Aerox®-Polishing Sieve offers:**

A very effective, reliable and environmental friendly two-steps odour control system. High odour removal levels results in a *very low odour emission* into the environment: **no more smell !**

## How does the Aerox®-Polishing Sieve work?

- **First step** is the Aerox®-Injector: fast oxidation by injecting activated oxygen.
- **Second step** is the Aerox®-Polishing Sieve with synthetic zeolite modules:
  - adsorbing the remaining odour, enabling further odour reduction by oxidation reactions; chemical adsorption and ion exchange inside the reactive sites of the synthetic zeolite.
  - The remaining active oxygen from the Aerox®-Injector is continuously oxidizing the adsorbed odour molecules that are left behind in the Aerox®-Polishing Sieve. This process will continue until they are small and can leave the Aerox Polishing Sieve. By this time there is no remaining odour. This process also keeps the Aerox®-Polishing Sieve clean and offers a long life.

The Aerox®-Injector continuously oxidizes and breaks down organic components until they can pass through the sieve.



## Benefits:

- The combination of the Aerox®-Injector and Aerox®-Polishing Sieve creates a very effective and high performance odour control system.
- Low energy consumption.
- Low pressure drop (as only thin layers of synthetic zeolite are used)
- Longer lifetime: the Aerox®-Injector reactive oxygen is continuously oxidizing the organic components that are left behind in the Aerox®-Polishing Sieve.

