



Odor Control by **Photoionisation**

North American Distributer

Ambio Biofiltration Ltd.
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Manufacturer

Neutralox Umwelttechnik GmbH
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NEUTRALOX®
Environmental Technology

Odor Control by Photoionisation

Photoionisation (PI) represents an exciting “new” technology in the odor control business. It is relatively new to North America but has been successfully used in Germany (and elsewhere) for over 10 years for odor control, mostly in wastewater treatment, but also in many other industrial applications.

Photoionisation is based on the application of UV light and a catalyst. The first part of the process mimics natural reactions that take place in the upper atmosphere by the interaction of air and UV light coming from the sun. The principles are fairly straightforward. Odorous air passes through a chamber where it is exposed to intense UV light. The UV light creates free radicals, (O^{-2} , OH^{-} , O_3 , etc.), that immediately begin oxidizing the odour-causing compounds.

The air then passes to a catalyst, where any remaining odorous compounds are adsorbed and are broken down by the constant flow of free radicals coming with the air from the UV section. The reactions that take place also indicate catalytic activity as one of the by-products is native sulfur – the classic catalytic Klaus reaction. Thus, the catalyst acts as both a catalyst and “buffer”.



Sludge Dryer - 1200 cfm



Whole Plant - 7200 cfm

Advantages of Photoionisation



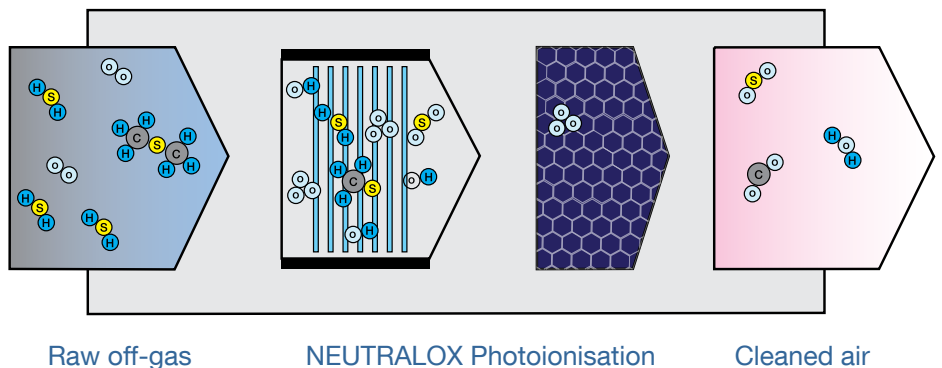
Pump Station. Velton PS 2008

- small footprint
- can handle very high concentrations of odorous compounds (100's of ppm of H₂S)
- particularly effective on all reduced sulfur compounds
- easily handles spikes
- operates over a wide temperature range (-30 °C to 70 °C)
- low maintenance requirements (1/2 day/year)
- no water or chemicals required
- very stable process
- can easily be turned on or off, and begins working immediately
- low energy demand

For demonstration purposes, a pilot plant (~300 cfm) is available.



Sludge Storage - 10,000 cfm



Raw off-gas

NEUTRALOX Photoionisation

Cleaned air

For further information, contact :

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