VEOLIA

Ozonia* XF
Ozone Systems

The XF range of ozone generators is our latest development that has set new standards for ozone production worldwide.

WATER TECHNOLOGIES

Ozonia XF Ozone Generation Technology

The Veolia research team established a new calculation basis for the vessel design and have also developed a completely new dielectric technology that will replace the phenomenally successful AT® (Advanced Technology) in larger units.

The patented new technology — IGS® (Intelligent Gap System) — takes ozone generation to levels never before thought possible.

How it Works

IGS ozone generation equipment offers users market-leading performance and Veolia's well-proven design technology for generating ozone from oxygen. The main features of this technology are set out below - many of these are unique to Veolia.

The major advance came when "AT" was commercialised. The adoption of non-glass dielectric material, combined with Veolia's standard practices, revolutionised the ozone market. The latest development of the IGS product has taken ozone generation technology to unparalleled levels. The advantages are manifold:

- Compared with glass dielectrics, ozone can be generated at much higher concentrations which dramatically reduces oxygen consumption and, consequently, operating costs. Additionally, oxygen storage on site is either reduced or fewer gas deliveries are required.
- IGS™ dielectrics are more robust than glass
- Lowest specific power consomption available on the market
- Power factor : 0.99
- Low harmonic content (US standard IEEE 519)
- The operating voltage of approximately 4000 V is lower than that of glass
- Each dielectric element is tested at over twice the operating voltage before installation – glass cannot be tested in this manner
- The "Intelligent Gap System" (IGS) optimises the ozone generator design which enhances all aspects of the operating parameters
- Veolia's system of individual fuses for each tube is still employed ensuring that a single dielectric failure does not shut down the generator. Without this protection, projected dielectric failure rates equate directly to generator downtime

Ozonia XF Capabilities:

Ozone production from 24 kg/h to over 250 kg/h with a single generator unit

- Vessels are compact as a result of the high ozone production per unit area of electrode and contain fewer tubes than the equivalent glass systems
- The generators are floor mounted allowing easy inspection and, if required, allow convenient access for maintenance

Options & Ancillary Equipment

Feed Gas Equipment

The ozonia XF range of ozone generators have been designed for dry oxygen or air feed gas. There are two main ways to obtain dry oxygen feed gas; a LOX source or from a PSA/VA.

Cooling Water Equipment

This equipment will be required when the specified amount or quality of cooling water is not available on-site. Typically, a water chiller unit is selected for this purpose and is supplied as a separate unit for installation.

Ancillary Equipment

In order to give clients the best possible service, Veolia also markets and manufactures ranges of ancillary equipment which has been especially selected or designed to match the service parameters of our ozone generators. This ancillary equipment includes: vent ozone destruct units (both thermal and catalytic versions), ozone contacting equipment (injectors, radial diffusers and porous diffusers), process control equipment, electrical plant control systems (master and slave), analytic equipment, etc.

Installation / Service

It is normal that ozone generators in the XF class are installed in secure rooms in a building. In many cases clients do not have a convenient room and have to invest sums of money for a new building. In order to save such expenditure, and to simplify the installation and commissioning phases, Veolia can offer clients the unique service of installing the complete ozone generation plant in containers which only have to be located on a simple plinth, connected-up and commissioned.

Technological Advantages and Highlights

A "Green" Chemical Environment with Ozone

Ozone is not only useful for disinfection, it is equally useful for synthesis purposes, etc. The advantages that ozone offers are manifold:

- A high reaction yield
- No waste products

With these benefits, ozone has a considerable – but to date little used – potential as the "green" chemical for all applications involving an oxidation process..

Typical XF Applicaions

Drinking Water Plants

The XF ozone generator units will be of special interest to clients operating drinking water installations such as those found on remote sites without a great deal of infrastructure.

Paper Industry

Ozone is extremely popular in the paper industry where one of its main uses is for the bleaching of the pulp both ECF and TCF. It is also used extensively for the treatment of the waste liquors.

Waste Treatment

Legislative pressure is forcing industry and municipal bodies to improve the quality of the waste before discharging to the environment.

Water Circulation Systems

In industry, ozone in conjunction with filtration is an effective combination to treat many problems.

Fish Hatcheries and Farms

To protect valuable stocks against water borne micro-organisms or pollutants and, at the same time, to increase production rates and quality levels.

Influent Water Treatment

There are many applications where companies treat the incoming water from the municipal source to establish and maintain a consistent quality specification. Ozone, combined with granular activated carbon, results in a perfect treatment step.

Cooling Water Treatment

Ozone is an excellent biocide in circulating cooling water systems. With the move towards favourable solutions and the legislative pressure to reduce harmful emissions, operators and service companies are being forced to look for better means of keeping systems clean.

Technical Data

- **Design Standards:** EN, IEC, ISO, SN, ASME, SELO (China)
- **Protection Class:** IP 42
- **Conformity:** CE

Materials

- **XF Vessel:** Stainless Steel, Special Ceramic, Viton

Product Highlights

- **Low power consumption**
- **High efficiency**
- **Long service life**
- **Low maintenance**
- **High availability**
- **Small footprint**
- **Ozonia quality**

Applications

For applications where larger quantities of ozone are required such as:

- Drinking water
- Wastewater treatment
- Pulp & paper applications
- Ozonolysis
- Leachate treatment, etc.

Main Features

- In the past, the capital expenditure and/or the operational costs have had a limiting effect on the use of ozone
- With Veolia's new development, both the equipment cost and operational costs have been drastically reduced
- Concentrations from 6 wt% to 14 wt%
- This new range will cover ozone production capacities from 24 kg/h to over 250 kg/h with a single generator unit
- This equipment will be supplied in component-form for installation in a building on the client's site or as part of a fully assembled and tested containerised plant

Resourcing the world

Curio Group Ltd
Pioneer House, 30 Celtic Court, Ballmoor, Buckingham, MK18 1RQ
Tel: +44 (0)1442 843640 | email: info@curio.group
www.curiowater.co.uk