



SMO evo Ozone Systems

MAXIMIZE THE OZONE. MINIMIZE THE ENERGY.

WEDECO
a xylem brand

Ozone. Effective and environmentally friendly.

Ozone is one of the most powerful commercially available oxidants. Pollutants, colored substances, odors, and microorganisms are directly destroyed by oxidation, without creating harmful chlorinated byproducts or significant residues. By decomposing to oxygen as it reacts, ozone provides a cost effective and environmentally-friendly alternative to oxidation with chlorine, absorption (activated carbon), or other separation processes (membrane technology).

Advantages of ozone

- Ozone eliminates bacteria, viruses, and most other organic and inorganic contaminants
- Ozone can replace and significantly reduce levels of dangerous chemicals such as chlorine
- Ozone acts as a flocculant aiding in the removal of minerals such as iron and manganese
- Ozone leaves neither chlorinated byproducts nor unpleasant chemical tastes or odors
- Ozone is generated safely on-site and controlled on demand from air/oxygen and power
- No storage and handling of oxidants and other chemicals

SMO evo Generator

Key features

- For small to medium ozone requirements, producing 20 to 1,300 lbs. of ozone per day or 400g to 25kg per hour
- Equipped with Effizon® evo 2G electrode technology
- Manufactured in two principle configurations: 1) the Greenline with maximum energy efficiency and low lifecycle costs, or 2) the budget-oriented Smartline
- Ozone generator, power supply unit, and control systems are installed on a compact, packaged skid
- All pipework, instrumentation, and cabling are fitted and tested prior to delivery

Applications

For small to medium drinking water, water reuse, wastewater, and industrial treatment processes.

- Disinfection
- Taste and Odor
- Pulp and paper
- Membrane pre-treatment
- Disinfection by-product removal

Maximize the ozone. Minimize the energy.

The Effizon evo 2G electrode, the core element of every SMO evo ozone system, enables achieving a level of reliability and energy efficiency that is unattainable with most other electrode technologies.

- The distinctive feature of this electrode is its unique double discharge gap. Ozone is formed on both sides of the dielectric, therefore lowering the applied specific energy and increasing ozone production.
- The electrodes are manufactured from inert materials making them highly resistant to corrosion. This means that Wedeco ozone generators are practically maintenance free, making any regular cleaning or replacement of the electrodes unnecessary.
- The overall optimized arrangement and vessel geometry further enhance the ozone production efficiency, while simultaneously achieving low specific energy consumption.



SMOevo. Engineered to deliver superior results to clients worldwide.

It is the sophisticated interplay between these components and processes that distinguishes the high efficiency, reliability, and flexibility of Wedeco ozone systems.

Lowest lifecycle costs

- Lowest aftermarket costs on the market due to virtually maintenance-free Effizon evo 2G electrode technology; electrodes do not require scheduled replacement or cleaning
- Nitrogen dosing up to 30 times lower than competitors
- Corrosion and performance issues mitigated by reducing the formation of nitrogen oxides (NOx) through ozone generators using less nitrogen
- Flexibility when selecting gas suppliers due to Ozone generator able to operate at elevated concentrations of hydrocarbons (THC) in the feedgas supply
- Low specific energy consumption saves on power costs
- Diverse ozone portfolio enables best design to meet site requirements

Maximum operating flexibility

- All ozone systems can be designed to operate with air, LOX, or PSA/VSA, on-site oxygen generation
- Efficient operation at elevated cooling water temperatures (up to 95°F/ 35°C)
- Startup to maximum capacity in only 30 seconds, thanks to reliable and thermal shock resistant electrodes
- Smooth ozone capacity control (from 1-100%) to suit process requirements
- Air conditioning system separates the ambient air and ensures protection class IP 54 allowing generator to be operated in high temperatures (up to 95°F/ 35°C), high humidity (up to 90%), and harsh or dusty surroundings.

Customer-specific solutions

- Generator vessel and power supply are separate units and can be arranged separately as an option
- Ozone generator can be arranged upright or horizontally to suite local requirements
- System customization available to meet specific requirements, or available in two principle configurations: 1) the Greenline with maximum energy efficiency and low lifecycle costs, or 2) the budget-oriented Smartline
- Ozone laboratory-scale and pilot-scale testing available
- Process expertise to optimize ozone system design offered through Xylem's R&D department
- Single source supplier for complete ozone system and process peripherals

Simple installation

- Experienced team of project engineers, application developers, and service personnel
- Completely preassembled and tested prior to delivery
- Fully containerized ozone system solutions can be built to fit local footprint and operating requirements
- Comprehensive connection options to superordinate controls (e.g. via SCADA, Profibus, etc.)

Simple operation

- Power supply unit is equipped with state-of-the-art semiconductors technology (IGBT) for improved system control
- PLC for internal control and monitoring
- Local control touch screen panel (HMI)
- Easy access to all systems and fittings relevant to service
- Operation and diagnosis via network control (remote diagnostics)

Options for Wedeco SMO evo ozone generators

A number of options and ancillary equipment are available for supply with the Wedeco SMO evo series ozone generators.

Options

Containerized systems	Insulated, lighted, and painted container Complete alarm and safety concept according to international standards Electric heating and ventilation fan
Instrumentation and control	Ozone concentration control Ozone residual in water Alarm monitoring and indication System control based on process signals monitoring
Feed gas supply	Liquid oxygen (normally supplied by the oxygen manufacturer) PSA - Oxygen (On-site generation, Pressure Swing Adsorption) Air preparation comprising air compressor, desiccant dryer, filtration
Ozone mixing and contacting	Side stream injection systems Fine bubble diffusers Closed reactors Degassing tanks Demisters
Electronic process control	Operation panel Overall process control
Ozone destruction in off gas	Catalytic Ozone Destructors Blowers
Cooling water supply	Air/water cooled chiller units Heat exchangers

Technical data

	OXYGEN FEED GAS	AIR FEED GAS
Ozone System	Ozone Output (kg/h / ppd)	Ozone Output (kg/h / ppd)
SMO evo 410	1.9 / 101	1.2 / 68
SMO evo 460	2.0 / 106	1.3 / 71
SMO evo 510	3.4 / 180	2.2 / 116
SMO evo 560	3.9 / 206	2.7 / 142
SMO evo 610	6.9 / 365	4.4 / 232
SMO evo 660	7.7 / 407	5.3 / 280
SMO evo 710	8.9 / 470	5.7 / 300
SMO evo 760	10.4 / 550	7.1 / 376
SMO evo 810	11.4 / 603	7.2 / 383
SMO evo 860	13.0 / 688	8.9 / 469
SMO evo 910	16.9 / 894	11 / 566

Cooling Water Temperature: 5°C - 35°C / 41°F - 95°F, Ozone concentrations: 2-6wt% (AIR); 6-15wt% (Oxygen)



Wedeco is a brand of Xylem, whose 12,000 employees are addressing the most complex issues in the global water market.

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