

# ozonia<sup>®</sup> range

ozone systems

**applications**

- disinfection
- oxidation
- advanced oxidation (AOP)

ready for the resource revolution



**SUEZ**

# ozone advantages

## strongest oxidizing agent on the market

- lower dose requirements
- very short contact time
- can be used at many points in the treatment line

## nonspecific oxidation removes a wide variety of molecules

- micropollutants
- microorganisms
- bacteria and viruses
- algae and cyanobacteria
- colour, taste and odour

## ozone is chemical free

- ozone technology does not add chemicals to water or air
- environmentally friendly green technology

## ozone dissolves naturally into oxygen

- inherently safe after natural decay
- no harmful residuals
- increased filter velocities
- control of THM

## ozone is generated on-site

- increased safety
- no transportation
- no storage

## ozone optimizes the entire treatment plant

- improvement of coagulation & flocculation
- savings of flocculent and polymer
- no need for quenching
- increases dissolved oxygen levels
- improvement of effluent degradation

# ozonia® ozone systems

The **Purification and Disinfection Systems** business group is the SUEZ global supplier of ozone, UV and membrane systems. From our company's roots in Switzerland, **ozonia®** products have been the **ozone industry pioneer for over 25 years**. SUEZ has thousands of **ozonia®** ozone installations, including **some of the world's largest oxidation systems**.

With three R&D centers and four manufacturing facilities in North America, Europe and China, SUEZ can deliver to any customer's specifications.

Trust SUEZ to deliver the highest quality **ozone, UV and membrane technology solutions** to meet even the most difficult treatment challenges.

## where can it be applied?

Ozone has many advantages over other oxidants. These advantages are the reason why ozone technology is the high-quality process standard for many applications.



### municipal

- drinking water
- wastewater
- micropollutants
- reuse



### industry

- industrial wastewater (COD removal...)
- process water
- food and beverage
- bottling
- ultrapure water
- ballast water treatment
- aquaculture



# ozonia<sup>®</sup> ozone technology

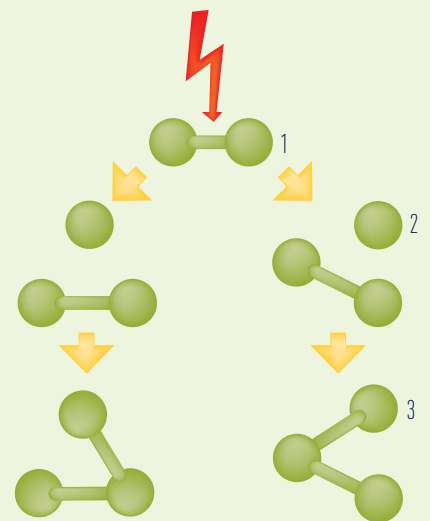
SUEZ designs and manufactures a complete range of **ozonia<sup>®</sup>** ozone generators from laboratory scale units to the largest ozone systems in the world. **ozonia<sup>®</sup>** products are consistently ranked among the best in the global ozone industry.

## commercial scale ozone generation

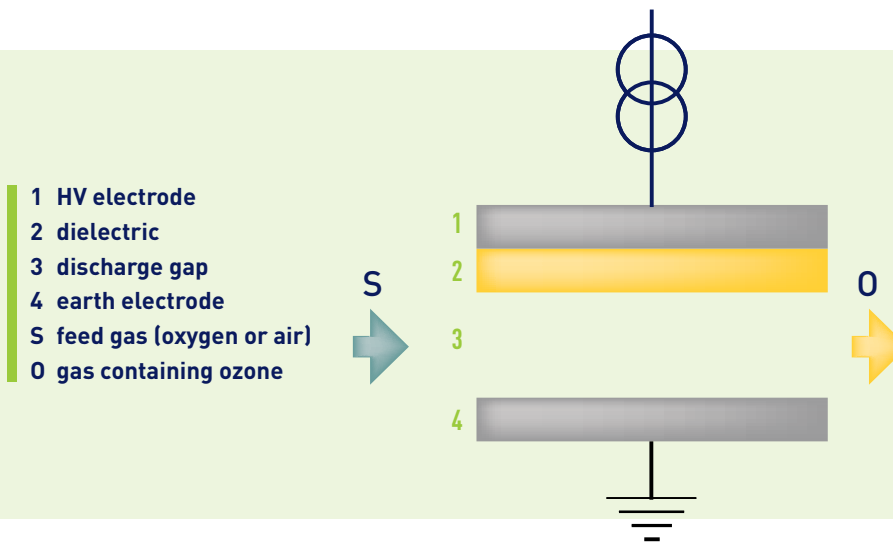
Ozone is produced when oxygen molecules (O<sub>2</sub>) are split into atomic oxygen (O) then recombined into ozone

(O<sub>3</sub>). In most commercial applications, ozone is produced when a gas containing oxygen is passed through an electrical field separated by two electrodes. When oxygen molecules in the gas interact with the electrical field, they split and recombine forming ozone. This process is the Corona Discharge ozone generation method.

The **ozonia<sup>®</sup> membrel** system uses the electrolytic process to produce ozone from water, making it the most effective method for ozone production in ultrapure water applications.



**ozone is formed by splitting oxygen molecules (O<sub>2</sub>) into atomic oxygen (O), which then recombine with other oxygen molecules to produce ozone molecules (O<sub>3</sub>).**



Ozone has an oxidation potential which is 50% stronger than gaseous chlorine, making it one of the most powerful oxidants available in today's municipal, industrial and commercial markets.

## ozonia<sup>®</sup> technology focus

- ▶ Intelligent Gap System (IGS) Technology
- ▶ the industry's most robust electrodes
- ▶ fused dielectrics allows the industry's highest availability
- ▶ long service life
- ▶ laboratory testing, piloting and applications expertise
- ▶ manufacturing facilities in Europe, China and North America
- ▶ globally adaptable standards
- ▶ industry-leading engineering capabilities

SUBSTANCE	OXIDATION POTENTIAL (V)
ozone molecule (O <sub>3</sub> )	2.07
hydrogen peroxide (H <sub>2</sub> O <sub>2</sub> )	1.78
chlorine (Cl)	1.36
chlorine dioxide (ClO <sub>2</sub> )	1.27
oxygen molecule (O <sub>2</sub> )	1.23

# ozonia® ozone product portfolio



FEATURES	ozonia® LAB 2B	ozonia® TOGC 2	ozonia® MEMBREL®	ozonia® TOGC	ozonia® CFS	ozonia® CFV	ozonia® XF™
description	ozone generator	ozone generator	ozone generator	ozone generator + oxygen concentrator	ozone generator	ozone generator	ozone generator
ozone production with air	4 g/h	4 g/h	3 – 9 g/h	–	37 – 470 g/h	0.75 – 9 kg/h	–
ozone production with O <sub>2</sub>	10 g/h	10 g/h	–	8 – 45 g/h	53 – 690 g/h	1.3 – 26 kg/h	24 – 250 kg/h
fully assembled	x	x	x	x	x	x	
fully tested	x	x	x	x	x	x	
completion on-site							x
containerized version					x	x	x
SS enclosure option				x			
remote control			x		x	x	x

## ozonia® IGS™

### Intelligent Gap System

- ▶ high ozone concentration up to 14 wt%
- ▶ ozone production capacities greater than 250 kgO<sub>3</sub>/h
- ▶ the industry's most robust ceramic dielectric
- ▶ higher efficiency

The **ozonia® XF** offers ozone production capacities over 250 kg/h.





FEATURES	ozonia® Smart Power Supply	ozonia® DK™	ozonia® ODT	ozonia® RB™	ozonia® dome diffusers	ozonia® radial diffusers
description	power supply unit	catalytic ozone destruction	thermal ozone destruction	thermal ozone destruction	ozone diffuser	ozone diffuser
ozone production with air	—	—		—	—	—
ozone production with O <sub>2</sub>	—	—		—	—	—
fully assembled		x	x	x		
fully tested		x	x	x		
completion on-site						
containerized version	x					
SS enclosure option						
remote control	x	x	x	x		

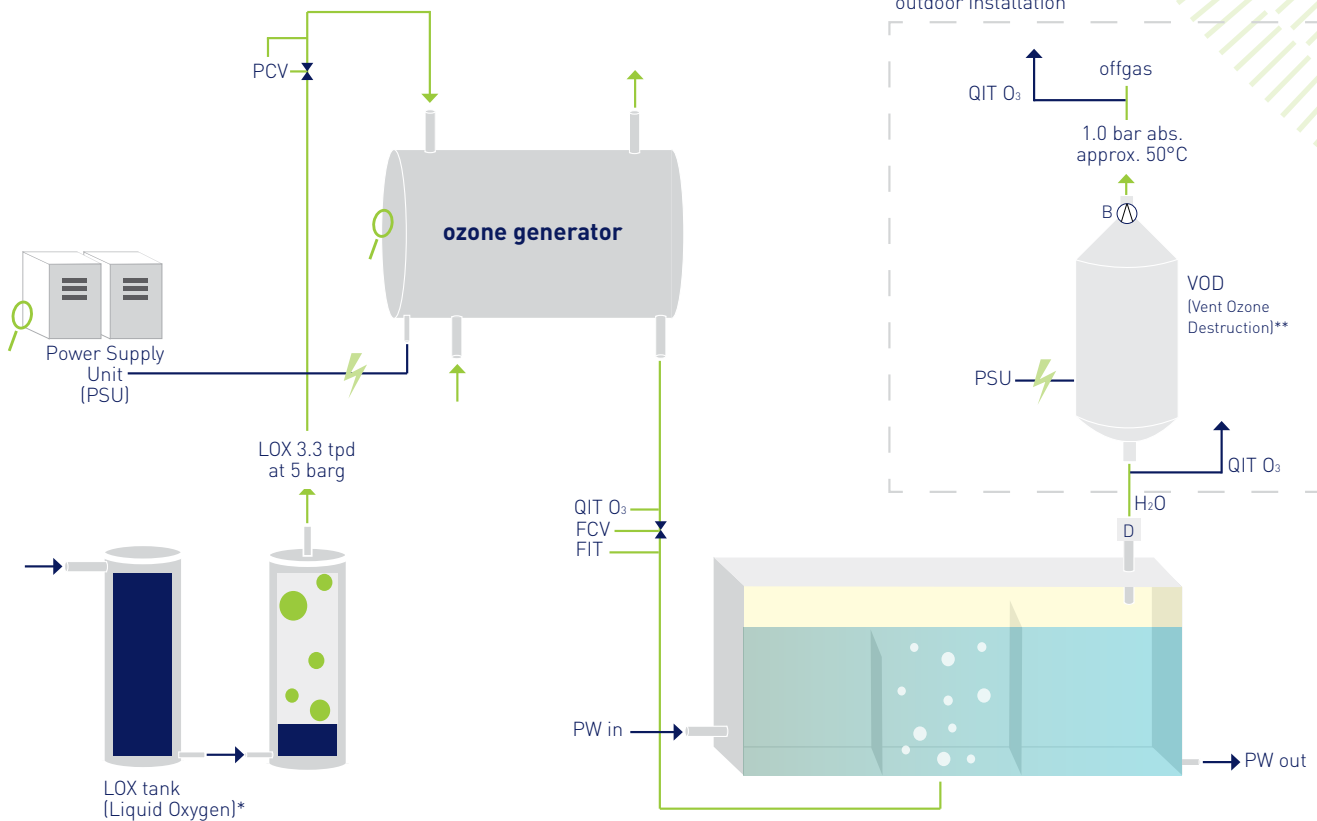


## ozonia® nomad

### containerized ozone plants

- ▶ fully assembled and tested
- ▶ industry leading quality & reliability
- ▶ minimize civil work
- ▶ eliminate building costs
- ▶ minimize installation time

# ozonia<sup>®</sup> ozone systems



\*ozone generator can also be fed with oxygen from PSA/vPSA systems or with air  
 \*\* several technologies existe (catalytic, thermal...)



25 years of experience

# skills and expertise

## engineering

SUEZ offers unique professional expertise with **over twenty five years of experience** in the ozone industry. As the original ozone industry pioneer, our proven IGBT based power supply systems, combined with revolutionary dielectric materials results in industry leading performance. In addition to ozone generation equipment, SUEZ offers clients unrivalled ozone application technology for **any industrial or municipal ozone application process.**

## quality management



SUEZ operates a **Quality Management System** covering all aspects of business activity. The system is supervised by a QA manager and is subject to regular internal audits and annual certification by the company SGS.

## installation, commissioning & training

Following purchase, clients have full access to SUEZ Customer Care services. These services cover: installation, supervision, inspection, commissioning and on-site training of the operator's personnel. Additionally, SUEZ can organise training workshops in a classroom environment for larger groups.

## plant service & maintenance

Having placed their trust in **ozonia®** ozone equipment, it is only logical that clients expect a professional and competent after-sales service as well as technical assistance in case of emergency. SUEZ can ensure that clients get optimal support. The services offered range from a hot-line breakdown service to regular plant service contracts – everything to ensure that our clients get the very best from our equipment.



SUEZ's **ozonia**® ozone technology portfolio includes products from the laboratory scale to the largest ozone systems ever built. Suez uses our extensive ozone technology experience to provide the industry's most reliable and robust products.

Our unique ability to deliver the most reliable and robust systems is why thousands of customers around the world have chosen **ozonia**® ozone systems.

We have been the ozone industry pioneer for over 25 years. Trust SUEZ to deliver the highest quality ozone solutions to meet your treatment challenges.

**7**  
product ranges  
certified to  
international  
standards

over  
**10,000**  
installations

over  
**25**  
years  
of experience



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