OXYGEN *ON-SITE* GENERATION SYSTEMS

For WATER TREATMENT/ EFFLUENTS/ H_2S REDUCTION

INDUSTRIAL

Oxygen is widely used in water treatment processes, mainly the following:

WASTE WATER TREATMENT

Using Oxygen achieves the highest level of dissolved Oxygen as compared to the traditional approach, strictly using air. The potential benefits of using pure Oxygen are:

- **Reduction in odours;**
- **Improved sludge settling;**
- **Increased loading (BOD/Oxygen demand);**
- **Reduced VOCs (volatile organic compounds);**
- **Potential to improve ammonia treatment;**
- **Ability to meet peak demands/high production;**
- **Maintain system health (sufficient dissolved Oxygen in pipelines, final dissolved Oxygen);**
- **Permit limits can be met without substantial upgrades to the entire plant.**

OZONE WATER PURIFICATION
(Drinking Water Purification)

Ozone is the most effective water purification method for eradicating toxins found in water. Ozone is a highly powerful oxidant that inactivates pesticides, fungi, organic material, contaminants and viruses. Ozone water purification accounts for the majority of purified water in the world; it's currently the most used water purification method. To produce the necessary O_3, the most effective method is to start from concentrated O_2 and then using technologies such as dielectric barrier discharge method or glass tube technology reactors.

OXYGEN GENERATORS

A line of robust, reliable and modular Oxygen generators based on *Pressure Swing Adsorption* (PSA) and *Vacuum Swing Adsorption* (VSA) technologies using state of the art Zeolite molecular sieve adsorbents.

SYSADVANCE generators produce high purity Oxygen from compressed air, allowing continuous availability at a very competitive costs, compared to alternative supply with cylinders or cryogenic tanks.



HYDROGEN SULPHIDE (H_2S) CONTROL IN WASTEWATER COLLECTION SYSTEMS

When most environmental professionals think about Hydrogen sulphide control in their wastewater collection systems, they are concerned with odour and corrosion. Hydrogen sulphide (H_2S) gas typically is formed in wastewater collection systems that are conducive to creating septic conditions. In general, septic conditions occur when bacteria use all of the available Oxygen while decomposing organic matter in wastewater for energy. These bacteria reduce sulphur compounds such as sulphate (SO_4), thereby producing sulphides (SO_2).

Under anaerobic (septic) wastewater conditions, sulphides cannot be oxidized. Therefore, they combine with Hydrogen to produce Hydrogen sulphide gas (H_2S), creating the "*rotten egg*" odour associated with septic wastewater.

H_2S reduction by O_2 injection also reduces or eliminates odor problems.

For existing systems, environmental professionals can resolve corrosion problems with the injection of Oxygen in key points of the piping system. This will represent huge savings in piping replacement and downtimes.

PSA OXYGEN *ON-SITE* GENERATION

PSA MODEL	90% Flow O_2 (Sm^3/h)	93% Flow O_2 (Sm^3/h)	95% Flow O_2 (Sm^3/h)
OXYGEN **10C**	1,16	1,07	0,94
OXYGEN **25**	2,67	2,07	1,67
OXYGEN **35**	4,0	3,1	2,5
OXYGEN **50**	6,0	4,6	3,8
OXYGEN **70**	8,5	6,5	5,3
OXYGEN **80**	10,4	8,0	6,5
OXYGEN **90**	12,4	9,5	7,8
OXYGEN **110**	16,2	12,4	10,1
OXYGEN **150**	23,7	18,2	14,8
OXYGEN **200**	34,1	26,2	21,3
OXYGEN **300**	47,6	36,5	29,7
OXYGEN **400**	56,7	43,5	35,3
OXYGEN **500**	72,6	55,7	45,2
OXYGEN **800**	101,6	82,7	67,2

Other capacities available upon request.
Conversion factor: $1m^3$ of $O_2 \approx 1,4$ kg of O_2.

VSA OXYGEN *ON-SITE* GENERATION

VSA MODEL	Flow @ 90% (Sm^3/h)	Flow @ 93% (Sm^3/h)	Power Consumption @ 90% @ 500 mbarg[1] (kWh/m^3)	Power Consumption @ 90% @ 8 barg[2] (kWh/m^3)
OXYGEN **VSA 20**	22	18	0,40	0,53
OXYGEN **VSA 30**	36	30	0,40	0,53
OXYGEN **VSA 60**	72	60	0,40	0,53
OXYGEN **VSA 90**	108	90	0,40	0,53
OXYGEN **VSA 120**	144	120	0,40	0,53

Performance stated at standard conditions: 15°C /1013,25mbar /40% RH;
Operation at different conditions can affect performance;
Power Requirements: 400VAC +/- 5%, 50Hz +/- 3%, 3-Phase;
[1] Power Consumption includes: Blower, Vacuum Pump and Control;
[2] All items on [1] + Oxygen Compression;
Purity may vary within +/- 2%;
Power Consumption and O2 Flow may vary within +/- 5%;
Other capacities available upon request;
Different outlet pressures available on request: 8 to 300barg;
Models and specifications are subject to change without notice.



© 2026 - SYSADVANCE S.A. All rights reserved.
The names, product names, business names and service marks are the property of SYSADVANCE.
We reserve the right to change the product specification without prior notice.
Images are illustrative.

COMPETE 2030 · PORTUGAL 2030 · Cofinanciado pela União Europeia
SGS ISO 9001 · IMQ CERTIFIED

MF_TRATAMENTO ÁGUAS_V04_OUT2026_EN