

## Pressure Swing Adsorption Nitrogen Generator Removal Psa Oxygen Generation Plant

Our Product Introduction

### Basic Information

- Place of Origin: SUZHOU, CHINA
- Brand Name: SUMAIRUI GAS
- Certification: ISO9001, CE, BV, SGS, TUV, ASME, GOST,NB,NR ETC
- Model Number: OSP
- Minimum Order Quantity: 1 set
- Price: Negotiable
- Packaging Details: Exporting wooden case /Film packing
- Delivery Time: 30-45 days
- Payment Terms: L/C, T/T, Western Union, MoneyGram
- Supply Ability: 100 sets/months



### Product Specification

- Flow: 100-5000Nm3/hr
- Purity: 99.999%
- Dew Point: -80°C
- Pressure: 5-300 Bar
- Control Type: PLC Control
- Instrument: Included
- Mannometer: Included
- Oxygen Analyzer: Included
- Material: Mild Steel /stainless Steel
- Certificates: CE, ISO, ASME, GOST, KGS, NB Etc
- Medium: Clean N2
- Display: HMI
- Alarming System: Included
- Flow Meter: Included
- Customized: Yes

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## Product Description

### ASME/CE/ISO9001 with OSP plug and play models integrated for laser cutting field, Chemical , Heat treatment field

Nitrogen generators that are based on membrane and pressure swing adsorption (PSA) technologies are both capable of generating nitrogen gas and use compressed air as a means to feed their systems and produce nitrogen. But when deciding which technology will best serve your business, several issues need to be considered.

#### Pressure Swing Adsorption Generators

A PSA nitrogen generator uses a Carbon Molecular Sieve (CMS) to adsorb oxygen under high pressure while allowing the nitrogen to pass through for collection in a storage unit.

#### PSA Nitrogen Generator – The Process

With the majority of pressure swing adsorption nitrogen generators, two vessels are packed with carbon molecular sieves (CMS) to adsorb oxygen as compressed air moves through the vessel. As one vessel is adsorbing the second vessel is depressurized, and a small amount of nitrogen flows downward to release the oxygen collected during the adsorption process. The two vessels alternate between the adsorption and desorption processes. The entire process for a PSA generator takes approximately 60 seconds.

#### PSA Nitrogen Generator Systems

##### Purity Levels

PSA nitrogen generators can provide higher gas purities than can be accomplished with a membrane nitrogen generator. PSA generators manufactured by On Site Gas Systems offer the ability to achieve a set purity level between 95% and 99.9995%.

##### Reliability

On Site Gas Systems PSA nitrogen generators have only a few moving parts and if properly maintained can last for many years. It is not uncommon for an On Site Gas Systems PSA nitrogen generators to maintain its performance for over twenty years.

##### Very Little Maintenance

An On Site Gas Systems PSA nitrogen generator requires very little maintenance. With clean, dry feed air most of the annual maintenance is simply changes filter cartridge. Pellets that form the hub of the pressure swing adsorption gas filtering process (Zeolite or CMS) have an extensive lifespan and can last for at least for decades.

##### Consistency

Pressure swing adsorption generators can provide the same high volume of nitrogen for the life of the generator

## The Benefits of an Onsite Nitrogen Generating System

#### Benefits compared to previous models

- Higher quality materials
- Lower energy consumption
- Shorter lead time
- Longer N2 generator lifetime

#### How did we do it

- Simplification – 80% less parts used in our production process
- Automation – state-of-the-art welding and bending robots
- Modular isolation – two standard size PSA pressure vessels for all capacities

#### Service and maintenance

A smaller power consumption requires a smaller compressor. As a result, you will not only save on energy but also on running/service costs of the compressor. Furthermore, the stainless-steel valves have a longer lifetime than brass.

### Model of OSP High purity PSA nitrogen generator

Item	Nitrogen purity (Nm <sup>3</sup> /hr)							Dimensions	Weight
	95%	99%	99.5%	99.9%	99.99%	99.995%	99.999%	(L*W*H) mm	
OSP5	21	13	11	8	5	4.2	3	1100*600*1700	300
OSP10	38	29	25	15	10	7.5	6.1	1200*650*1800	350
OSP20	80	56	52	32	20	16	14	1600*1000*2200	450
OSP40	160	116	105.2	67.2	40	34	28	1800*1000*2200	600
OSP60	252	174	157.8	100.8	60	51	45	1900*1200*2200	750
OSP80	339.2	232	211	132	80	70	62	2000*1200*2400	980

OSP100	420	290	263	168	100	90	78	2100*1600*2500	1300
OSP150	630	435	394.5	252	150	135	120	2500*1800*2600	1600
OSP200	848	580	526	336	200	180	160	2800*1900*2850	2200
OSP250	1060	725	657.5	420	250	225	200	3100*2000*3200	2600
OSP300	1270	870	780	500	300	260	240	3900*2600*3400	3850
OSP400	1696	1160	1052	672	400	360	320	4500*3250*3600	5000
OSP500	2120	1450	1300	840	500	450	400	4900*3600*3800	6500
OSP600	2540	1740	1578	1000	600	540	480	5300*3600*3900	7800
OSP800	3390	2320	2100	1340	800	720	640	5600*3900*4100	10200
OSP1000	4240	2900	2630	1680	1000	900	800	5800*4000*4500	11800

#### Design reference :

Compressed air inlet pressure 7.5 bar(g)/108 psi(g)  
Air quality 1.4.1 according to ISO 8573-1:2010  
Nitrogen outlet pressure 6 bar(g)/87psi(g)  
Nitrogen quality 1.2.1 according to ISO 8573-1:2010.  
Designed working temperature max 50 °C  
Dew point at Nitrogen outlet - 40 °C

#### Notes:

OSP nitrogen generator max working pressure 10 bar(g)/145psi(g)  
Following request of PSA on-site nitrogen generator will be customized :  
Working pressure >10 bar(g)/145 psi(g)  
Dew point < - 50 °C  
Plug and play  
Movable/containerized  
Other special requirements as per site conditions

## Nitrogen Generator Applications

Here are the five most popular nitrogen generator applications in the industrial industry.

#### Food Packaging

Modified Atmosphere Packaging (MAP) with nitrogen and nitrogen-CO2 gas mixes are often used in the food packaging industry to preserve perishable items by preventing spoilage, ensuring freshness, maintaining flavour, and extending the product shelf life. Onsite nitrogen generation is highly beneficial in the food packaging industry to maintain a quality product. Food packaging can save hundreds of thousands of dollars by having an onsite system installed.

#### Beverage Storage, Transport, and Dispensing

Like the food industry, the beverage industry can also improve from having onsite nitrogen generating systems. These systems make it more efficient to transport beverages to end users such as juice packagers, vintners, breweries, and other manufacturers of beverage dispensing systems.

#### Laser Cutting

The success of a laser cutter depends on a lean and efficient shop, which is why it is highly beneficial to generate your own nitrogen onsite. If you are currently purchasing high-pressure cylinder gas, you can achieve incredible cost savings by switching to a local system. Bulk liquid nitrogen systems for laser cutting typically have purge losses of up to 20% of the gas you are purchasing. An onsite nitrogen generator will eliminate these costly purge losses.

#### Electronics Manufacturing and Soldering

Many solder applications require high-purity nitrogen to reduce dross on solder spots and reduce surface tension. High-purity nitrogen allows solder to cleanly breakaway from the solder site. Having an onsite nitrogen generating system is the most cost-effective way to meet your nitrogen requirements.

#### Fuel and Chemical Tank Inerting

The ideal inert gas for blanketing or purging fuel and chemical tanks is nitrogen. Having an onsite nitrogen system will reduce your costs and allow you to have a 24/7 nitrogen supply to meet your requirements.

## Nitrogen Generator Services from SUMAIRUI GAS

Onsite nitrogen generators are extremely efficient and cost-effective for various industrial applications. By installing an onsite system, all you need to focus on is maintenance, while your investment pays for itself over time. We offer the following nitrogen generator services:

#### Maintenance Services

For help with installation, our team offers around-the-clock service support. If you require maintenance for your existing system, we will ensure that your nitrogen generator is running in great condition, so you can get back to your operations. For nearly three decades we have been helping our clients significantly reduce their industrial nitrogen and oxygen costs by utilizing leading-edge technologies such as onsite nitrogen and oxygen generating systems. We displace the requirement of having to purchase the gas. Instead, we sell our business clients the technology and equipment they need to make their own gas on site.



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