

## Food Grade PSA Based Nitrogen Plant 350Nm<sup>3</sup>/H, 99.99% Purity

Our Product Introduction

### Basic Information

- Place of Origin: China
- Brand Name: Eco-Tech
- Certification: CE ISO13485 ISO9001
- Model Number: EN4350
- Minimum Order Quantity: 1
- Price: USD 12000-25000 pieces
- Packaging Details: Wooden Case
- Delivery Time: 20 days
- Payment Terms: L/C, D/A, D/P, T/T, Western Union, MoneyGram
- Supply Ability: 1000 pieces per year



### Product Specification

- Capacity: 350Nm/h
- Inlet Diameter: DN80
- Outlet Diameter: DN50
- Size: 2500\*1600\*2900mm 5500 Kg
- Demand For Clean Compressed Air: 29.16
- Recommend Air Compressor: 200Kw 31.3m<sup>3</sup>/min 10Bar ) Or 185Kw (32.3m<sup>3</sup>/min 8Bar)
- Control System: PLC
- Type: Nitrogen Generator
- Warranty: 1 Year
- Highlight: **good grade psa n2 generator, 99.99% psa based nitrogen plant, 350Nm<sup>3</sup>/H psa based nitrogen plant**

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## Product Description

### Description of 99.99% Purity 350Nm<sup>3</sup>/H PSA Nitrogen Generator Food, metallurgy, chemical industry applicable

For the past 15 years, we have specialized in the assembly of PSA nitrogen generators and oxygen generators at our factory. Each year, we deliver approximately 400 sets of PSA nitrogen generators and oxygen generators to customers both domestically and internationally. Our services encompass the entire production process, including manufacturing and debugging.

In collaboration with Burkert Valves, we have developed a unique double-acting pneumatic valve that we have customized to meet our specific requirements. With innovative design features such as top and middle pressure equalization and airflow orifice plates, we have achieved continuous optimization and reduction in the air consumption ratio of our equipment. As a result, we have achieved remarkable energy savings. In fact, our equipment's energy consumption ratio is considered among the highest in China. Furthermore, we have implemented our patented silencer technology, effectively controlling the noise level of our devices to below 55 dB.

We have established a comprehensive process flow that encompasses cutting, welding, assembly, molecular sieve filling, automatic rust removal, spraying, and thorough equipment testing and commissioning. This ensures that our products meet the highest quality standards. In terms of our supply chain, we collaborate with renowned brands like Atlas Copco, Ingersoll Rand, GDK, Liutech, Bolaite, Hanbell, and BK to source top-quality air compressors. Additionally, we provide refrigerated dryers from Boly, Atlas Copco, and Liutech, as well as boosters from Anshan Jiapeng and Anqing Bailian. We also offer a wide range of supporting equipment and accessories to meet the diverse needs of our customers.

Our company caters to both end-users and distributors worldwide. We offer customized remote systems, color customization options, and tailored display interfaces, among other OEM services. Furthermore, we provide ASME standard equipment and pressure tanks specifically designed to meet the requirements of the USA and Australian markets.

For personalized selection and inquiries, our dedicated customer managers are available to assist you. We look forward to establishing a long-term partnership based on trust and reliability.

PN4350 PSA Nitrogen Plant Technical Specification			
lot	Item		Description /Specification
1	Model/Place of Manufacture		PN4350
2	Nitrogen making principle		PSA Pressure swing adsorption PSA 吸附( 放式 )
3	Application	Operation place	Indoor
	Environment	Ambient temperature	Min -5 /Max 50 / design temperature37
		Ambient humidity	Min 40%RH Max90%RH
4	Capacity	350	Nm <sup>3</sup> /hr
5	Nitrogen Gas Purity		≥99.99 % Test at outlet of psa Nitrogen
6	Nitrogen Purity Sensor		HT-TA261 1set
7	Nitrogen Flowmeter		Japan SMC flowmeter 1 sets
8	Inlet compress air pressure		0.75 -0.99Mpa
9	Inlet Oil Content		≤0.001mg/m <sup>3</sup>
10	Residual dust		≤0.01um
11	Residual water		≤0.069mg/m <sup>3</sup>
12	Air inlet atmospheric dew point		-15
13	Demand for clean compressed air	29.17 Nm <sup>3</sup> /min	Recommend Air compressor 200Kw (31.3m <sup>3</sup> /min 10Bar ) or 185Kw (32.3m <sup>3</sup> /min 8Bar)
14	Inlet Diameter		DN80
15	Outlet Diameter		DN50
16	Maximum inlet temperature		MAX 30
17	Allowable working pressure range		Min7.5Kgf / cm <sup>2</sup> Max9.9Kgf / cm <sup>2</sup>
18	Carbon molecular sieve model/origin		CMS-240
19	The tower body pipe		2 sets
20	Air and nitrogen buffer tank		Piped storage tank

21	Instrument Tank, silencer		PB Silencer ≤55dB(A) patent number:ZL 2015 2 0545860.3	
22	Solenoid valve brand/origin		AirTAC	7 sets
23	Pneumatic valve brand/origin		PB-Customized	11 Sets (two for auto drain unqualified Gas)
24	Control System	Control Power Supply	0.2kw/set 220V 50 HZ	
		PLC	Mitsubishi core integrated screen /or Siemens S7-200 Smart	
		electrical box	built-in	1 set
		touch screen	Mitsubishi core integrated screen/ MCGS	
25	size LxWxH (mm) / Weight:(Kg)		About: 2500*1600*2900mm 5500 kg	
26	Price		含税含 交期20天	

## 2. Working Principles for PSA Nitrogen Generator

Pressure swing adsorption(PSA)nitrogen generator is an automatic equipment that uses air as material,use carbon molecular sieve as adsorbent, pressure reduction desorption principle to adsorb oxygen from the air, thereby separating nitrogen.

## 3. Main Features for PSA Nitrogen Generator

- Air, as a raw material, is sourced from the environment. By supplying compressed air and power, nitrogen can be produced. The purity of nitrogen can be conveniently adjusted by regulating the supply of compressed air.
- Our equipment is highly automated, ensuring fast gas production and the ability to operate without constant supervision. Nitrogen production can commence within just 10-15 minutes of startup.
- The equipment is designed with simplicity in mind, occupying minimal space while consuming minimal energy and incurring low costs.
- To preserve the integrity and longevity of the molecular sieves, we employ the snowstorm method for filling. This technique prevents the pulverization of molecular sieves that may occur due to the high-pressure impact of airflow. Consequently, the molecular sieves can be used continuously for an extended period.
- For ease of operation, we have incorporated an imported analyzer that allows for on-line inspection. This analyzer is user-friendly, requires minimal space, consumes low energy, and incurs minimal costs.

## 4. Technical indicators

- Capacity Range : 2~2000Nm<sup>3</sup>/H
- Purity Range : 95%~99.9999%
- Outlet Pressure :0~6Bar or 0~ 8Bar
- Booster outlet pressure range : 10 to 200Bar
- Service Life 8-10 years as long as regular maintenance

## Carbon Molecular Sieve

High quality,high density, compact spring loaded, top/bottom balance, protected by a dedicated pressure sensor.  
We usually use CMS-240 for purity below 99.99%  
And use CMS-260 for purity of 99.999% in one step .

## 5. Standard Features

- Siemens PLC
- Customized and improved domestic valves
- 7-inch LCD display
- Taiwan AirTAC solenoid valve
- Chengdu Jiuyin Nitrogen analyzer
- SMC flowmeter
- Professional brand molecular sieve

## 6. Optional Features

- Remote control system
  - Better valve of brand Gemu, Burkert
  - Dew point analyzer
  - Import Molecular Sieve
  - Italian ODE solenoid valve

Item No.	Capacity	Purity	Size mm	Inlet Diameter	Outlet Diameter	Weight Kg	Power
PN4005	5Nm <sup>3</sup> /H	≥99.99%	1200*850*1500	DN15	DN15	300	AC220V/0.2 KW
PN4010	10Nm <sup>3</sup> /H	≥99.99%	1200*900*1900	DN15	DN15	500	AC220V/0.2 Kw
PN4020	20Nm <sup>3</sup> /H	≥99.99%	1450*900*1900	DN25	DN15	600	AC220V/0.2 Kw

PN4030	30Nm3/H	≥99.99%	1450*900*2250	DN32	DN15	700	AC220V/0.2 Kw
PN4040	40Nm3/H	≥99.99%	1600*1100*1950	DN32	DN15	800	AC220V/0.2 Kw
PN4050	50Nm3/H	≥99.99%	1700*1100*2200	DN40	DN15	1000	AC220V/0.2 Kw
PN4060	60Nm3/H	≥99.99%	1800*1000*2300	DN40	DN25	1200	AC220V/0.2 Kw
PN4070	70Nm3/H	≥99.99%	1800*1000*2300	DN40	DN25	1800	AC220V/0.2 Kw
PN4080	80Nm3/H	≥99.99%	1800*1000*2300	DN40	DN25	1900	AC220V/0.2 Kw
PN4100	100Nm3/H	≥99.99%	1800*1300*2450	DN40	DN25	2500	AC220V/0.2 Kw
PN4120	120Nm3/H	≥99.99%	1800*1300*2450	DN40	DN25	2600	AC220V/0.2 Kw
PN4150	150Nm3/H	≥99.99%	2000*1300*2450	DN40	DN25	2900	AC220V/0.2 Kw
PN4200	200Nm3/H	≥99.99%	2200*1500*2650	DN50	DN40	3400	AC220V/0.2 Kw
PN4250	250Nm3/H	≥99.99%	2500*1600*2680	DN50	DN40	3800	AC220V/0.2 Kw
PN4300	300Nm3/H	≥99.99%	2500*1600*2900	DN50	DN40	5000	AC220V/0.2 Kw
PN4350	350Nm3/H	≥99.99%	2500*1600*2900	DN80	DN50	5500	AC220V/0.2 KW
PN4400	400Nm3/H	≥99.99%	3000*2000*3750	DN80	DN50	7500	AC220V/0.2 Kw

#### -Applications-

- **Application of SMT industry**

- **Semiconductor silicon industry application**

Semiconductor and integrated circuit manufacturing process atmosphere protection, cleaning, chemical recovery, etc.

- **Electronic components industry application**

Selective welding, purging and encapsulation with nitrogen. Scientific nitrogen inert protection has proven to be an essential step in the successful production of high quality electronic components.

- **Semiconductor packing industry application**

Packaging, reduction, storage with nitrogen.

- **Powder metallurgy, metal processing industry**

Heat treatment industry application, Steel, iron, copper, aluminum products annealing, carbonization, high temperature furnace protection, Low temperature assembly and plasma cutting of metal parts.

- **Chemical industry, advanced material industry application**

Nitrogen is used to create oxygen - free atmosphere in chemical process, improve the safety of production process, fluid transmission power source, etc: It can be used for nitrogen purging of pipes and vessels in the system, filling nitrogen Storage tank, gas displacement, leak detection, combustible gas protection, chemical reaction agitation, chemical fiber production protection, also used in diesel hydrogenation and catalytic reforming.

- **Oil and gas industry**

- Oil refining, container machine pipeline nitrogen-filled purge box leak detection, nitrogen injection oil recovery.

- **Food and medicine industry Application**

Mainly used in food packaging, food preservation, food storage, (Configurable sterilization filter), food drying and sterilization, medicine packing, medical replacement gas, medicine delivery atmosphere, etc.

#### Ten common questions about nitrogen generators

##### 1. What purity of nitrogen gas can a nitrogen generator produce?

A nitrogen generator can produce nitrogen gas of various purities, ranging from standard industrial-grade nitrogen (typically 95% to 99% purity) to high-purity nitrogen (usually exceeding 99.9%), and even ultra-high purity nitrogen (typically exceeding 99.999%). The choice of purity depends on specific application requirements.

##### 2. What is the working principle of a nitrogen generator?

The working principle of a nitrogen generator is primarily based on either the adsorption technology using molecular sieves or membrane separation technology. Adsorption technology selectively adsorbs oxygen and moisture using a specific adsorbent material, such as molecular sieves, while allowing nitrogen to pass through. Membrane separation technology, on the other hand, utilizes the size and permeability of gas molecules to achieve the separation of nitrogen from other gas components on a membrane.

##### 3. What inputs does a nitrogen generator require, and how does it operate?

A nitrogen generator typically relies on ambient air as its input source. The process begins by compressing the air using an air compressor, which increases its pressure and prepares it for further treatment. The compressed air is then directed into the nitrogen generator, where it undergoes purification through either adsorption or membrane separation.

In an adsorption-based nitrogen generator, the compressed air passes through an adsorber filled with a specialized adsorbent material, such as molecular sieves. This material selectively adsorbs oxygen, moisture, and other impurities, allowing nitrogen to pass through and emerge as the purified output gas.

In a membrane-based nitrogen generator, the compressed air is guided through a membrane separator that contains membranes with specific pore sizes. These membranes enable the separation of nitrogen from oxygen and moisture based on molecular size and permeability. As a result, purified nitrogen is obtained as the final product.

It's worth noting that some nitrogen generators may require an electrical power supply to operate the air compressor and support the purification process. This electrical power is typically sourced from a standard power outlet or integrated power system within the nitrogen generator.

By utilizing ambient air, compressing it, and employing either adsorption or membrane separation technology, nitrogen generators offer a reliable and efficient solution for producing high-purity nitrogen gas in various industrial applications.

#### 4. How is a nitrogen generator different from nitrogen supply in gas cylinders?

The main difference between a nitrogen generator and nitrogen supply in gas cylinders lies in the mode of nitrogen supply. A nitrogen generator continuously extracts nitrogen from the air, providing a continuous nitrogen supply without the need for cylinder replacements. In contrast, nitrogen supply in gas cylinders requires periodic cylinder replacements, and the supply quantity is limited by the cylinder capacity.

#### 5. What should be considered for the maintenance of a nitrogen generator?

The maintenance of a nitrogen generator typically involves regular cleaning and replacement of the adsorber with molecular sieves or membrane separator, inspection and maintenance of the compressed air system, monitoring nitrogen generation performance, etc. Specific maintenance requirements should be referred to the user manual or guidance provided by the manufacturer of the nitrogen generator.

#### 6. Which industries are nitrogen generators suitable for?

Nitrogen generators are widely used in various industries, including industrial, medical, food and beverage, and laboratory applications. They are commonly used in industries such as chemicals, electronics, and metal processing. In the medical field, they are used for anesthesia and gas delivery. In the food and beverage industry, they are used for packaging and preservation. In laboratories, they are used for atmospheric control and protection of equipment.

#### 7. What is the noise level of a nitrogen generator during operation?

The noise level of a nitrogen generator varies depending on the model and design. Generally, nitrogen generators have low noise levels, especially when compared to traditional compressed air systems. Specific noise levels can be referred to the technical specifications or noise test reports of the nitrogen generator.

#### 8. How long does it take for a nitrogen generator to start producing nitrogen gas?

The startup time of a nitrogen generator depends on the model and specifications. In general, nitrogen generators have short startup times, typically ranging from a few minutes to several tens of minutes. Larger capacity or higher purity requirement nitrogen generators may require longer startup times.

#### 9. Can a nitrogen generator simultaneously produce nitrogen gas and oxygen gas?

The design purpose of a nitrogen generator is to separate oxygen and nitrogen to produce high-purity nitrogen gas. Therefore, in most cases, a nitrogen generator does not simultaneously produce nitrogen gas and oxygen gas. If simultaneous production of nitrogen and oxygen is required, additional equipment or techniques need to be used for further processing.

#### 10. What is the energy consumption of a nitrogen generator?

The energy consumption of a nitrogen generator varies depending on the model, specifications, and operating conditions. Generally, nitrogen generators have relatively low energy consumption, especially when compared to traditional nitrogen supply in gas cylinders. Nitrogen generators are typically adjusted based on the actual nitrogen demand to improve energy efficiency and minimize energy consumption.



## OUR SERVICE

1. Setting trace file for every sold product, quarterly survey for every sold product.
2. Providing remote instruction and training for free.
3. Providing on-site services and repairs for free during warranty period
4. Spare parts and on-site service would be charged with best price after warranty period.
5. 7\*24 hours online service for free, solution within 48 hours.
6. If customer required, assigning experienced after-sales engineer for on-site service with 7 days. (Visa apply should be considered)

## Our Certifications



## COMPANY INTRODUCTION—BUSINESS LINE

- 1) Fabrication line and Automation system
- 2) Calibration/Testing system, ICT/FCT
- 3) PSA Oxygen and Nitrogen Generator
- 4) ABB Instrumentation Agent(Pressure, flow, Level, Temp, Drive, Motor)
- 5) ODM include Software & Hardware development and structure/fluid simulation
- 6) Onsite engineering Services / Technology Services: Installation, Commissioning and Maintenance

### OUR CLIENTS:



### OUR PARTNERS:



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## Warranty

The Guarantee/Warranty Period shall be a period of twelve months after on-site startup & commissioning or eighteen months after shipment, whichever occurs first. If any trouble or defect, originating with the design, material, and workmanship or operating characteristics of any Goods, arises at any time during GUARANTEE/WARRANTY period, PB shall, at his own expense and as promptly as possible, make such alterations, repairs and replacements.

## On-Site Support

PB can do paid services of on-site startup, commissioning, installation supervision, training, by providing purchaser with the services of qualified English-speaking engineer at step shall obtain all permits and licenses required to perform the services under this Agreement.

## After Sales Support

**Eco-Tech**  **Eco-Tech Suzhou Limited**

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