



# Nitrogen & Oxygen PSA Generators for the food industry

In the packaging and processing food industry, nitrogen and oxygen are widely used to preserve products quality, color and texture, and extend their shelf life.

**N**ITROPLUS & OXYPURE generators from NOVAIR combine cutting edge PSA technology and proven efficiency to deliver nitrogen & oxygen manufactured on-site, on-demand, from ambient air. A solution for industrials that need high purity oxygen or nitrogen and want to gain autonomy, while reducing their operating costs.

## Novair Solutions

- Nitrogen Generators Nitroplus up to 99,999% & up to 484 Nm<sup>3</sup>/h (at 99,5%)
- Oxygen Generators Oxypure : up to 43.2 Nm<sup>3</sup>/h of 99,5% Oxygen

## Designed for

- Modified atmosphere packaging
- Controlled atmosphere storage
- Grain fumigation
- Blanketing
- Sparging
- Aerosol propellant



# SOLUTIONS FOR THE FOOD INDUSTRY

## NITROPLUS

Nitrogen generator up to 99.999%

NITROPLUS nitrogen generators are based on the **Pressure Swing Adsorption (PSA) process**. This technology is a static separation of air gases through a specific molecular sieve capable to adsorb oxygen, carbon dioxide and water vapor under pressure.

**NOVAIR R&D has optimized the process to obtain a high and stable nitrogen purity – up to 99,999 %, at a very competitive cost.**

Designed for a simple and quick installation, they include :

- 2 PSA sieve beds
- 1 monitoring system CPU Controller with digital screen
- 1 separate nitrogen receiver equipped for nitrogen service
- 2 air inlet filter (25 µm and 0.1 µm)
- 1 submicronic nitrogen outlet filter

## Automatic monitoring

NITROPLUS nitrogen generators are automatically managed by the CPU controller, a device based on a PLC system comprising a logic controller, a digital screen and an ergonomic control panel. Key informations such as nitrogen concentration, hour meter or alarm reports are displayed on the CPU screen. This user-friendly monitoring system is available in several languages.



CPU automatic control panel

Secured ergonomic cabinet

Stainless steel valves and manifolds

## OXYPURE

Oxygen generator up to 99,5%

In the packaged meat industry, it is essential to maintain a high concentration of oxygen in the atmosphere surrounding the meat : oxygen helps to preserve the oxygenated form of myoglobin which gives meat its red color.

Based on an improved PSA technology, Oxypure oxygen generators by NOVAIR produce and deliver on-site the source of oxygen necessary to optimal meat preservation.



Nitroplus 5 / 10 Nitrogen generator

# SOLUTIONS FOR THE FOOD INDUSTRY

## On-site at its best

To guarantee exceptional performances at the lowest possible cost, we put together :

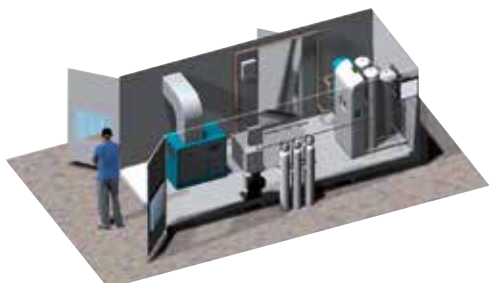
- Open ended concept with one several inter connected lines
- PLC based control and monitoring with high definition color touch screen panel
- Highly competitive production cost
- Stable outlet gas purity
- Fully automatic process
- Ergonomic design for an easy and limited maintenance
- Reliable, tested and controlled components for a long lasting performance
- Low energy consumption thanks to a high efficiency molecular sieve

Use our experience to your advantage, let NOVAIR design your nitrogen or oxygen plant.

## Plug and play solutions

Supplied on a turnkey basis, Novair PSA generators are mounted on a compact skid to allow an easy installation on site. All components (main cabinet, valves, manifolds and vessels) are preassembled on the skid in our factory, so that installation, start up and commissioning are generally completed within a few days.

For those who do not have any technical room available for the plant, Novair can manufacture and deliver turn key oxygen or nitrogen plants mounted in a cabin or container specifically designed for outdoor use. Cabins and containers do not require any construction aside from a paving stone. Besides, the system is totally mobile for greater flexibility.



## On-site production: increase your safety & autonomy, decrease your expenses

Forget high pressure cylinders deliveries or liquefied gas supply: Novair offers you solutions to become your own supplier of nitrogen and oxygen, from an unlimited, universal and free raw material: air. This means:

- **Reduced operating costs:** you produce the nitrogen / oxygen you need and get rid of any external supply contract with all the transportation or rental costs involved. Most of our clients recover their investment within 2 years.
- **Increased safety:** no more heavy cylinders to handle, no high pressure or cryogenic storage of combusive gas.
- **No more supply chain failure:** your generator provides an unlimited supply of nitrogen or oxygen on site.
- **No more logistic constraints:** save time avoiding recurrent logistic procedures – orders, delivery bills, invoices, inventory management.
- **Reduced environmental impact:** no more comings and goings of polluting trucks



## Professional engineering and services

Each project is unique and Novair teams are capable to design custom engineered solutions for each client. Our engineering and after sales services can operate worldwide to ensure :

- Start up
- Commissioning
- Inspection or maintenance

Our high profile engineers can provide PID layouts, technical recommendations and ongoing support.

We provide training sessions free of charge to our clients in our facility near Paris.



INDUSTRIES

**Nitroplus range - flow Nm<sup>3</sup>/H**

Nitrogen Purity	99,5%	99,9%	99,95%	99,99%	99,995%	99,999%
Residual O2	0,5%	0,1%	500 ppm	100 ppm	50 ppm	10 ppm
Nitroplus 5	12	8	7	4	3	2
Nitroplus 10	24	16	13	8	6	5
Nitroplus 15	36	24	20	12	9	7
Nitroplus 20	48	32	27	16	12	10
Nitroplus 27	65	44	36	22	16	13
Nitroplus 30	73	49	40	24	18	15
Nitroplus 40	97	65	53	32	24	19
Nitroplus 50	121	81	67	40	30	24
Nitroplus 60	145	97	80	48	36	29
Nitroplus 72	174	117	96	57	44	35
Nitroplus 90	218	146	120	72	54	44
Nitroplus 120	290	194	160	96	73	58
Nitroplus 150	363	243	200	120	91	73
Nitroplus 200	484	324	266	160	121	97

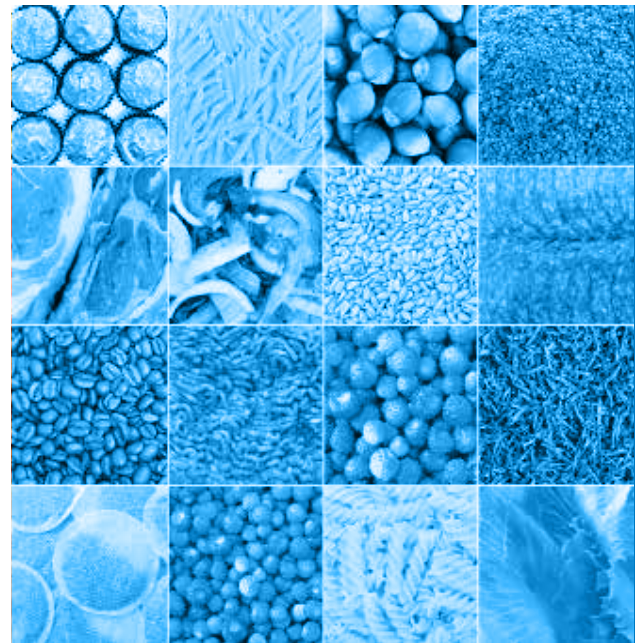
**Oxypure range**

Oxygen purity	O2 Flow Nm3 / h*		
	93%	95%	99% Min
OxyPure 5	N/A	N/A	N/A
OxyPure 10	4.9	4.2	2.3
OxyPure 15	8.3	7.2	3.9
OxyPure 20	9.9	8.4	4.5
OxyPure 27	11.7	10.0	5.4
OxyPure 30	13.6	12.5	6.8
OxyPure 40	19.8	18.0	9.7
OxyPure 50	22.9	20.0	10.8
OxyPure 60	26.3	24.0	13.0
OxyPure 72	34.5	29.0	15.7
OxyPure 90	37.0	34.5	18.6
OxyPure 100	42.0	39.0	21.1
OxyPure 120	48.5	46.5	25.1
OxyPure 150	73.0	63.0	34.0
OxyPure 200	90.0	80.0	43.2

**Ancillary equipment & options**

- Air compressor / air dryer
- Air tank
- Containerized or skid mounted plant
- Cylinder filling system
- Gas booster
- Gas analysers
- Flowmeter
- Remote monitoring

\*Flow +/- 5%



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