APPLICATIONS

A nitrogen or oxygen generator for all needs

With decades of experience with nitrogen and oxygen supply for food and beverage applications, NOVAIR can assist you with a detailed review of the specific gas consumption needed for your packaging machines, including:

- HFFS (horizontal form-fill-seal)
- Semi-rigid packaging
- VFFS (vertical form-fill-seal)
- Pillow pouch packages, and more

NOVAIR has extensive experience assisting customers with their particular conditions when supplying nitrogen to thermo-forming packaging machines and vacuum chamber machines. This is in addition to decades supplying oxygen for a range of uses in the packaging and food industries. For nitrogen consumption, we are able to calculate reliable rates with limited information, such as bag volume, package size, product volume and packing speed. For beverage applications we can provide an adapted on-site nitrogen supply for both standard and isobaric bottling machines. In beer production, in-house oxygen generation can save when fostering yeast growth.

Modified Atmosphere Packaging (MAP)

Modified Atmosphere Packaging (MAP), the packaging of foodstuffs under a protective atmosphere using nitrogen or a gas mixture of nitrogen, carbon dioxide and/or oxygen, is widely used in the food packaging industry. This type of packaging:

- Prevents spoilage
- Greatly extends product shelf-life
- Preserves freshness
- Maintains flavor

Nitrogen is also used in soft packages that must retain their shape to preserve fragile products such as potato chips. Using a nitrogen / carbon dioxide mixture as filler gas for MAP neutralizes the effects of carbon dioxide absorption and also reduces the impact of the packaging vacuum.

Beverage storage, mixing, transportation and dispensing

In-house nitrogen and oxygen can be used for beverage applications such as:

- Maintaining freshness in transport
- Significant savings as an alternate to CO2
- Storage and blanketing
- Dispensing to end users

To avoid discoloration and reduced flavor in non-carbonated beverages like wine, iced tea, fruit juice, and dairy drinks, nitrogen may be used for sparging, (the introduction of very fine bubbles), or for inerting purposes. Nitrogen is also used during wine bottling to purge the bottles before and after filling. Oxygen is used in the aeration of wort process for aerobic respiration of yeast.

Controlled atmosphere fruit storage

Blanketing of silos and bulk storage tanks

Inerting of dairy products

Vinification

Pressure transfer

Coffee packaging

PSA Nitrogen and Oyxgen Generators

Feed Air Units

Medium & High Pressure Gas Boosters

Engineered Packages

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NITROGEN & OXYGEN IN-HOUSE PRODUCTION

Solutions for the Food and Beverage Industries

- Food grade nitrogen
- Economical oxygen solutions
- Production on-demand
- Constant quality control

ECO-FRIENDLY SOLUTION

NOVAIR USA

NOVAIR USA, a member of NOVAIR Groupe, is headquartered in North Tonawanda, New York, USA, in between Niagara Falls and Buffalo. NOVAIR USA is a leading global manufacturer of quality oxygen generators, nitrogen generators, gas separation systems, as well as medical gas air and vacuum equipment. Our generators produce 93% +/-3% oxygen concentration, as well as 97% to 99.999% nitrogen concentration, to help fill cylinders for first responders and others that save lives, to help package the food we eat daily, and to provide economical in-house gas solutions for those companies seeking to boost industrial output with eco-friendly solutions. At NOVAIR we are redefining the gases industry.

BECOME YOUR OWN GAS SUPPLIER: WHAT ARE THE ADVANTAGES?

Nitrogen and oxygen are traditionally supplied to industrial sites by trucks, and stored in high pressure cylinders or cryogenic tanks. This method of supply is costly, polluting and generates risky constraints for users.

Nitrogen and oxygen production on site by generator is a safe, efficient alternative, a source of autonomy and significant savings.

SAVINGS AUTONOMY RELIABILITY SAFETY ECO-FRIENDLY

NITROGEN AND OXYGEN GENERATORS FOR FOOD AND BEVERAGE INDUSTRIES

A wide choice of solutions

MODULN$_2$®

ModulN2® is a compact nitrogen generator ensuring in-house production of up to 2.24 SCFM (63.33 LPM) nitrogen, with a purity ranging from 0.35% to 1% residual oxygen content. Based on membrane technology, this generator is a perfect solution for those seeking convenient, reliable, and economical nitrogen supply.

- **Nitrogen Output:** From 0.29 SCFM to 2.24 SCFM (8.33 to 63.33 LPM)(0.5 to 3.8 m³/h)
- **Gas Concentration:** 99.65% to 99% Nitrogen 0.35% to 1% Residual Oxygen
- **Nitrogen Outlet Pressure:** Up to 125 PSI (8.6 bar)

- Plug-and-Play generator
- Mobile & compact
- Fully automatic

NITROSWING®

NITROSWING® is a modular PSA generator designed from years of research and development within NOVAIR group. The full range offers the highest standards of efficiency, flexibility and reliability. The modular technology allows for an easy upgrade of nitrogen production capacity through the simple addition of PSA sieve bed modules, or the addition of a secondary generator (Dual Bank), which is controlled by the main one.

- **Nitrogen Output:** From 0.59 SCFM to 155.97 SCFM (16.67 to 4416.67 LPM)(1 to 265 m³/h)
- **Gas Concentration:** From 97% to 99.999% Nitrogen 3% to 10ppm Residual Oxygen
- **Nitrogen Outlet Pressure:** 101 PSI to 159 PSI (7 bar to 11 bar)

- Patented PSA process
- High efficiency
- Expandable capacity

NITROSWING® FOODPACK

Newly designed by NOVAIR in collaboration with end-users, NITROSWING® FOODPACK is an integrated solution combining a nitrogen PSA generator and a specific gas mixer for Modified Atmosphere Packaging (MAP) applications. This generator offers continuous nitrogen concentration control, while the gas mixing system easily provides the mixtures and settings required to constantly monitor the quality as demanded by flow packing machines and other continuous packaging processes within the food industry.

- **Nitrogen Output:** From 2.94 SCFM to 88.29 SCFM (83.33 to 2500 LPM)(5 to 150 m³/h)
- **Gas Concentration:** From 97% to 99.999% Nitrogen 3% to 10ppm Residual Oxygen Gases Allowed in Mixer: N2, O2, CO2
- **Nitrogen Outlet Pressure:** 101 PSI to 159 PSI (7 bar to 11 bar)

- Autonomous supply of mixed gas for MAP
- Constant purity control
- High process reliability

COMPACT AND OG PRODUCTS

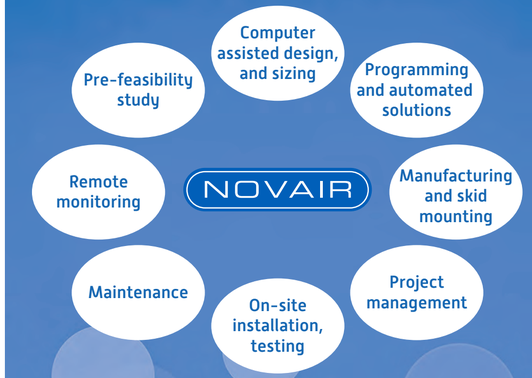
For industries looking for a flexible and autonomous supply of in house oxygen, NOVAIR introduces its COMPACT and OG lines of continual flow generators that can generate all the way up to 5,500 SCFH (2,596 LPM) of 93% +/-3% concentration oxygen.

- **Oxygen Output:** Up to 5,500 SCFH (2,596 LPM)
- **Gas Concentration:** 93%+/-3% Oxygen
- **Oxygen Outlet Pressure:** Up to 55 PSI (3.8 bar)

- Oxygen up to 96% purity
- Industry standard PSA generators
- Tons of installation options

EXPERT SUPPORT AT EACH STEP OF YOUR PROJECT

NOVAIR offers comprehensive solutions and service, from initial review of your needs, to installation and maintenance. NOVAIR nitrogen and oxygen solutions are always customized to fit your needs while ensuring you don't pay for what you don't need.



FOOD GRADE NITROGEN AND OXYGEN

The nitrogen and oxygen systems designed by NOVAIR generators were created in consideration of all US standards regarding food additives. Additionally, nitrogen and oxygen produced by NOVAIR generators can be continuously analyzed for concentration amounts and purity.

Gases	NITROSWING® PSA Nitrogen Generators Used in Food Packaging - Standards
Water (H_2O)	< 0.015%
Carbon Monoxide (CO)	Ambient air concentration 0.1 PPM or µl/l normally, < 10 PPM or µl/l in urban areas
Methane & Other hydrocarbons ($C_m H_n$)	Ambient air concentration 1.8 PPM or µl/l normally, 10 - 60 PPM or µl/l in urban areas
Nitrogen Oxide (NO) & Nitrogen Dioxide (NO_2)	Ambient air concentration 0.01 - 0.05 PPM or µl/l normally, 0.6 - 0.6 PPM or µl/l in urban areas
Oxygen (O_2)	< 1% in Nitrogen production (up to 96% in Oxygen production with O2 generators)