



COMPRESSED GAS TECHNOLOGIES INC.
The Gas Generation Specialists



APPLICATIONS



Food Packaging & Processing:

Modified Atmospheric Packaging is a proven method for extending shelf life without using chemical food preservatives. Almost every type of snack food can be packaged with nitrogen. These include potato chips, dried meat snacks, pre-cut fruits and vegetables, nuts, crackers, and cookies. The use of extremely dry nitrogen inside food packages eliminated moisture problems. Reduced oxygen content also diminishes the oxidation and discoloration of food.



Food Preservation (Controlled Atmospheric Storage):

When fruits and vegetables are stored at their optimum temperature, their respiration rate is reduced. A nitrogen purge lowers the oxygen levels inside the storage facilities down to 2-5%, further reducing the fruit's respiration rate. When apples are stored at their optimal temperature, they can last for 2-3 months. But, by reducing the oxygen level inside the storage warehouses with nitrogen, these same apples can be stored for over a year. For many perishable fruits, particularly apples, bananas, pears, berries, and kiwis, the quality of freshness can be significantly prolonged by storage in refrigerated warehouses filled with a balanced atmosphere of nitrogen, oxygen, and carbon dioxide.



Chemical Processing & Blanketing:

Production, storage, handling, and blanketing of chemicals will sometimes require the use of chemically inert nitrogen. Nitrogen is used by the chemical industry to protect against the danger of fire, moisture contamination, and discoloration or product degradation that result from atmospheric moisture and oxygen.



Laboratory Nitrogen:

Nitrogen is used within the laboratory in a wide range of applications because of its relative inertness, chemical inactivity and non-combustibility. Nitrogen is used as a carrier or make-up gas for gas chromatographs; as an inert atmosphere within glove boxes and fume cupboards and for instrument purging of mass spectrometers and inductively coupled plasma applications.



Tire Filling:

The aircraft industry, racing teams, and US Military have been using nitrogen to inflate their tires for years now. Nitrogen has been proven as the best choice for maintaining proper pressure in tires, therefore adding to the life of the tires, improving gas mileage, and ensuring the rims are not damaged due to corrosion. Nitrogen, being a significantly larger molecule than oxygen, will not permeate through the tire wall, thus nitrogen does not have the tendency to leak out of the tire, causing low tire pressure. Nitrogen filled tires will increase safety, improve gas mileage, and reduce operating costs, while improving the performance of the vehicle.

HPN PSA SERIES NITROGEN GENERATOR

HPN PSA nitrogen generators use patented technology to produce an uninterrupted supply of gaseous nitrogen, on site. This compact system is ideally suited for high flow applications that presently employ liquid nitrogen bulk delivery systems. With the HPN, the inconvenience of daily, weekly or monthly deliveries is eliminated. Nitrogen is generated at your location, continuously and reliably, requiring only a supply of compressed air.

HOW IT WORKS

The HPN operates on the Pressure Swing Adsorption (PSA) principle to produce a continuous stream of nitrogen gas from compressed air. Two towers are filled with carbon molecular sieve (CMS). Pretreated compressed air enters the bottom of the 'on-line' tower and follows up through the CMS. Oxygen and other trace gasses are preferentially adsorbed by the CMS, allowing nitrogen to pass through. After a pre-set time, the on-line tower automatically switches to regenerative mode, venting contaminants from the CMS. Carbon molecular sieve differs from ordinary activated carbons in that it has a much narrower range of pore openings. This allows small molecules such as oxygen to penetrate the pores and be separated from nitrogen molecules which are too large to enter the CMS. The larger molecules of nitrogen by-pass the CMS and emerge as the product gas.



Features:

- Nitrogen flows from 300 scfh to 30,000 scfh
- Nitrogen purity adjustable from 95% to 99.999%
- High flow design
- Oxygen analyzer with alarm capabilities
- Energy saving mode - Auto-shutdown during periods of low demand
- High efficiency CMS
- High efficiency compressed air and extractment
- Custom designed systems to meet your exact requirements

Technical Specifications

Delivery Types	<ul style="list-style-type: none">• Skid mounted PSA nitrogen generator.• Skid mounted PSA nitrogen generator plant - complete with feed air compressor; air dryer; nitrogen buffer tank.
Purity	<ul style="list-style-type: none">• Matching your specific requirements from 95% - 99.999%
Capacity	<ul style="list-style-type: none">• Flow capacities to meet any requirement
Pressure	<ul style="list-style-type: none">• Low pressure: 0-100 psig.
Electrical	<ul style="list-style-type: none">• 115/1/60 - nitrogen generator only.
Temperature	<ul style="list-style-type: none">• Working environment: From 32°F to 95°F
Separation Technology	<ul style="list-style-type: none">• Pressure Swing Adsorption (PSA) using Carbon Molecular Sieves (CMS)
Codes	<ul style="list-style-type: none">• ASME• CRN• UL & CUL
Options	<ul style="list-style-type: none">• Containerized units.• High pressure option.• Cylinder filling stations.• Low and high ambient conditions.



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