



**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.

# MAXIGAS PSA SERIES NITROGEN GENERATOR

MAXIGAS PSA nitrogen generators use patented technology to produce an uninterrupted supply of gaseous nitrogen, on site. This compact system is ideally suited for low-flow applications that presently employ high-pressure gas cylinders or dewars of nitrogen. With the MAXIGAS, the inconvenience of gas cylinders and liquid dewars is eliminated. Nitrogen is generated at your location, continuously and reliably, requiring only a supply of compressed air.

## HOW IT WORKS

MAXIGAS operates on the Pressure Swing Adsorption (PSA) principle to produce a continuous stream of nitrogen gas from compressed air. Pairs of extruded aluminum columns are filled with carbon molecular sieve (CMS). Pretreated compressed air enters the bottom of the 'on-line' column 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 column 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 70 scfh to 5225 scfh
- Nitrogen purity adjustable from 95% to 99.999%
- High efficiency compressed air pre-treatment package
- Oxygen analyzer with alarm capabilities
- Flow meter
- High pressure capabilities - up to 232 psig outlet
- Compact space saving design
- Flexible modular design
- High efficiency CMS
- Service due indicators
- ECO Mode - energy savings during low demand

# Technical Data

Nitrogen outlet flowrate - scfh v Oxygen Concentration

MODEL	10 ppm	100ppm	500ppm	0.1%	0.5%	1.0%	2.0%	3.0%	4.0%	5.0%
MAXIGAS 104	71	109	284	311	496	627	769	911	1025	1135
MAXIGAS 106	104	169	425	469	747	938	1156	1364	1538	1702
MAXIGAS 108	136	224	567	633	998	1255	1544	1822	2045	2269
MAXIGAS 110	169	278	715	791	1244	1565	1931	2275	2558	2836
MAXIGAS 112	207	333	851	944	1495	1882	2318	2727	3071	3404
MAXIGAS 116	278	447	1085	1200	1893	2384	2935	3464	3895	4315
MAXIGAS 120	344	562	1315	1456	2291	2885	3556	4189	4713	5225

Performance is based on 102 psi g (7 bar g) air inlet pressure, 68°F-77°F (20°C-25°) ambient temperature.

## Weights and Dimensions

MODEL	Height ins (mm)	Width ins (mm)	Depth ins (mm)	Height lbs (kg)
MAXIGAS 104	75 (1895)	22 (550)	28 (692)	737 (334)
MAXIGAS 106	75 (1895)	22 (550)	34 (861)	975 (442)
MAXIGAS 108	75 (1895)	22 (550)	41 (1029)	1213 (550)
MAXIGAS 110	75 (1895)	22 (550)	48 (1198)	1451 (658)
MAXIGAS 112	75 (1895)	22 (550)	54 (1368)	1689 (766)
MAXIGAS 116	75 (1895)	22 (550)	70 (1765)	2165 (982)
MAXIGAS 120	75 (1895)	22 (550)	81 (2043)	2628 (1192)

## Technical Specifications

<b>Ambient temperature range:</b>	41-122°F (5 - 50°C)
<b>Nitrogen outlet pressure:</b>	up to 232 psi g (16 bar g)
<b>Max air inlet pressure:</b>	261 psi g (18 bar g)
<b>Inlet air quality:</b>	<b>Dewpoint:</b> -41°F (-40°C)
	<b>Particulate:</b> <0.1 micron
	<b>Oil:</b> <0.01 mg/m <sup>3</sup>
<b>Electric supply:</b>	110V/1 ph/60Hz Or 220V/1 ph/50 Hz
<b>Inlet/outlet connections:</b>	Air G1/ Nitrogen G½

### Standard Accessories

- Oxygen analyzer for continuous monitoring of nitrogen purity
- Flow verification kit
- Analog outputs for remote monitoring
- Alarm connections
- Noise reduction



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