

PSA Nitrogen Gas Generators

An ISO 9001:2008 certified company, **SAM Gas Projects Pvt. Ltd.** is a leading manufacturer, supplier, and exporter dealing in premium quality Nitrogen Generators. Our world class **Nitrogen Gas Generator** works on PSA technology. PSA stands for Pressure Swing Adsorption. This is the separation technology which separates nitrogen and oxygen molecules from rich compressed air. Commercial nitrogen production process usually employ carbon molecular sieves as adsorbents. In PSA, the oxygen is adsorbed to its equilibrium value much faster than nitrogen because oxygen which is smaller in size (kinetic diameter 3.46 Å) diffuses much faster in carbon molecular sieves than nitrogen (kinetic diameter 3.64 Å).

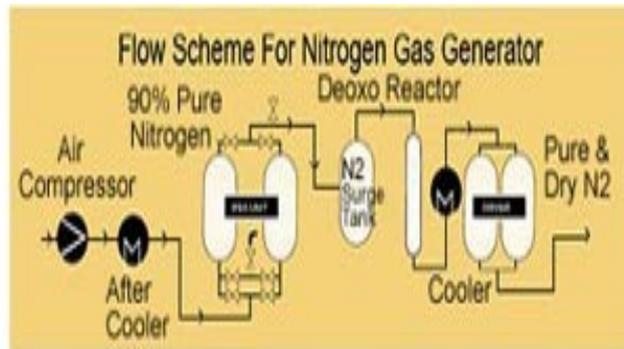


Our **Nitrogen Plant/Generator** operating on PSA technology, consists of twin tower system filled with special grade of carbon molecular sieves (C.M.S). At a time, one tower keeps in production cycle and other in regeneration cycle. When compressed air passed through C.M.S. bed, the molecules of oxygen, moisture & other unwanted gases are adsorbed on surface of C.M.S. And the nitrogen which is not adsorbed by C.M.S comes out of adsorption tower and is collected in a surge vessel. For continuous generation of nitrogen, two adsorption towers are provided which are interconnected with auto change over valves controlled by a sequence programmer. When one tower saturates with oxygen the process automatically changes over to another tower and thus the nitrogen production is continuous



Flow Scheme for PSA Nitrogen Gas Generator.

Our gas generators are of optimum quality, durable and easy to handle. Our on site PSA nitrogen generators are custom made and can be adjusted to give the desired nitrogen quality for your process and Application.



Purity of Nitrogen:

If you want pure Nitrogen, what you need is to select our PSA nitrogen gas generator. Nitrogen purity in the range of 99% to 99.9999% can be achieved through our nitrogen gas generators. Our PSA nitrogen gas generator produces raw nitrogen of 99% to 99.99% purity. By adding purification modules to this unit, nitrogen of 99.9999% purity can be achieved. Following are the generator models to produce different nitrogen purities.

MS Model:

This model is the simplest to produce nitrogen of a purity in range from 95% to 99% purity. However, if carbon molecular sieves quantity is increased, even 99.999% purity nitrogen can be produced from this model. But running cost would be higher in case of higher purity. Thus, this model is recommended for purity up to 99.9% only. This model is generally used to purging or Inertizing Application.

DS Model:

This model is commonly used in metallurgical industries for providing oxygen free nitrogen for heat treatment furnaces. Here, the oxygen is less than 1-ppm and but hydrogen is around 0.5 to 1% which is desirable as reducing constituent in most of heat treatment applications. "MS" models can also be converted into "DX" model by adding palladium deoxo reactor and Gas Drying Unit.

"DX" Model is also Applicable in Chemical as well electronic Industries.

CU – DX Model:

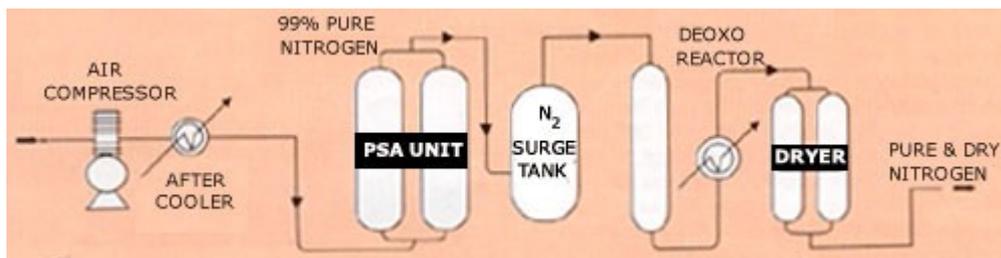
"Copper" DX model contains an extra nitrogen purification module based on copper deoxo catalyst. This model finds application in synthetic fiber, optical cables & electronic industries. Running cost of this unit is slightly higher because it produces very pure nitrogen gas i.e free from oxygen and hydrogen as well. It is applicable where hydrogen contents are detrimental to the process.

Models

	MS-L	MS-H	DX	COPPER-DX
GAS COMPOSITION				
Oxygen	0.1 to 2 %	10-ppm to 500ppm	1 to 3ppm(max)	1-ppm (max)
Hydrogen	Nil	Nil	0.5% or more	Nil
Nitrogen	98-99.9%	99.5 to 99.999%	Balance 99.9999%	Nil
Dew Point	(-)40°C to (-)80°C	(-)60°C to (-)80°C	(-)40°C to (-)80°C	(-)40°C to (-)80°C
APPLICATIONS:				
	As Inert gas In Chemical Industries, Food & Pharmaceutical Industries, for fire control in Coal mines etc	As Inert gas in Chemical, Food Pharmaceutical Industries, Heat Treatment Furnaces, Electronic, Synthetic Fiber, Industries.	As Inert gas in Chemical & Pharmaceutical Industries. In applications where oxygen impurity is not acceptable.	As Inert gas in Electronic, Synthetic Fiber, Hitech Industries where one needs Ultra High Purity.

Flow Scheme:

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Advantages

- Automatic Start-up time is only 5-Minutes.
- Nitrogen gas supply always under your control.
- Self-contained Skid mounted units for easy site installation.
- Very low maintenance costs.
- Very high reliability to run un-attended for months & months.
- Carbon Molecular Sieves life is minimum 15-years and in most cases it lasts the whole life time of Gas Generator, never requiring replacement.