



PSA NITROGEN GENERATION PLANT

Nitrogen Applications

Food Industries

Pharmaceutical

Petrochemical, Oil & Gas

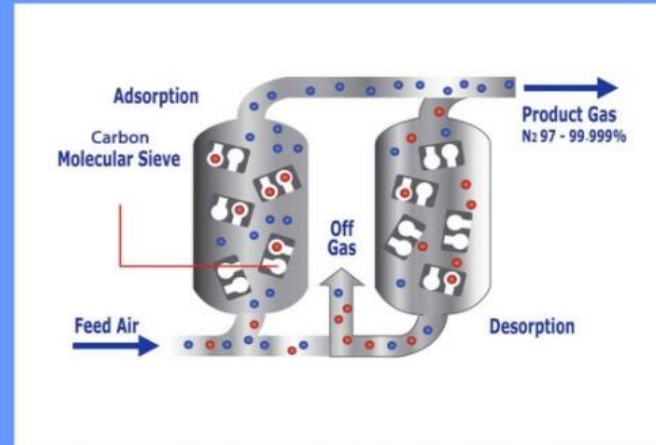
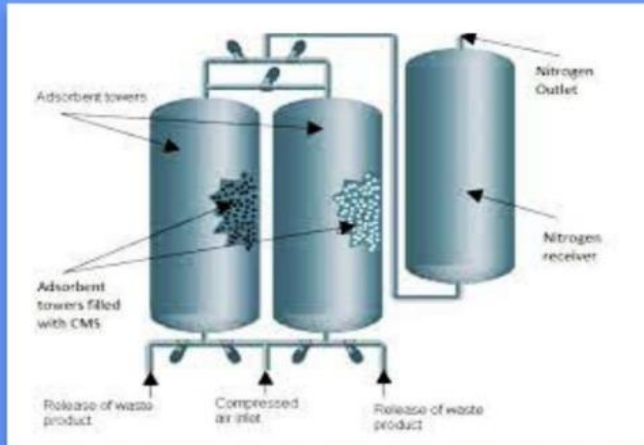
Heat Treatment Plant



PROCESS

Basic Principle:

Atmospheric Air contains 78% of Nitrogen and 21% of Oxygen. Nitrogen in PSA method is generated by physical separation of Oxygen from Atmospheric air and let the Nitrogen be collected for use. This is done by using a special Molecular sieve which has selective adsorption affinity for adsorption of Oxygen Molecule and let the Nitrogen go out. This phenomenon of adsorption of Oxygen gas molecules on the adsorbent is under pressure and is known as Pressure Swing Adsorption i.e.P.S.A.



PARTS

PSA Nitrogen Plant comprising of :

- ▶ Screw Air Compressor with Accessories.
- ▶ Four layer Filtration Systems for Air Cleaning.
- ▶ Drying Arrangements as per requirement.
- ▶ Air Receivers with accessories.
- ▶ PSA Towers (1+1) with Carbon Molecular Sieve (1 Adsorption + 1 Desorption mode).
- ▶ Oxygen Analyser & Purity Indicator Surge Vessel. Nitrogen Storage Tank & Piping.
- ▶ Skid HMI based control system (IW+IS) with Auto Drain Valves.
- ▶ Flow meters, Dew Point Meters, Safety Valves, Pressure Gauges and Temperature Detector, Flow Controllers, Pressure Switches, Change Over Valves, Solenoid Valves etc.

PSA PLANT VS CYLINDERS

- Avoid Cylinder Availability issues 365 days operation.
- Avoid Logistic and Management Problem.
- Faster Payback period within 1 year and lesser.
- Cylinder cost Rs 20 to Rs 30 / m³ of N₂ generation while PSA cost Rs 3 to 4 / m³ of N₂ generation.
- Eliminate safety risk associated with handling high pressure cylinders.
- Gas sensors and PLC based warning systems.

PSA PLANT VS LIQUID NITROGEN

- With liquid nitrogen systems, some gas is always evaporating, which means you pay for nitrogen even when you are not using it. When producing your own nitrogen, your system is designed to produce at the rate of consumption, and you pay only for the gas you need.
- When you generate your own nitrogen you can control the purity level produced with a great potential for savings.
- Avoid Tanks availability issues 365 Days operation.
- Avoid logistics and Management Problem.
- Faster Payback period within 2 year and lesser.

Product Overview

- PSA Technology - Pressure Swing Adsorption.
- Economical, Efficient, Hassle Free.
- Fully automatic requires no special attention, plug it, switch on & forget.
- Stand by progammer.
- Easy to install and maintenance free.
- Small footprints, low noise level.
- Nitrogen safe for industrial use as per requirements.
- Using special make and grade of chemical generate high quality nitrogen gas.
- Digital display - nitrogen purity, moisture, temperature, pressure.
- Factory tested, a range of applications.
- Booster Refiling facility/ Industrial use nitrogen.
- Upto (minus) - 40 Deg C dew point.



Benefits

- 01 Purity up to 99.995
- 02 24 x 365 Days continous operation
- 03 Safe and no Heat & Pressure safety criteria
- 04 Produce as per Demand inhouse Facility
- 05 Steady & Reliable
- 06 Dew Points upto - 40 Deg C
- 07 Factory tested

Nitrogen Applications

Nitrogen is used for a wide range of industrial applications including atmosphere packaging for perishable food products and prevebting fire and explosions in chemical plants.

- Food Industries
- Pharmaceutical
- Food and Beverages
- Power Generation
- Chemical Processing

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