

GAS GENERATION · PSA NITROGEN

Nitrogen Generation Plant

Compact, fully automatic PSA systems using Carbon Molecular Sieves to deliver on-site nitrogen at up to 99.999% purity.

99.999%

PURITY — UP TO 5N

CMS

CARBON MOLECULAR SIEVE
BEDS

Auto

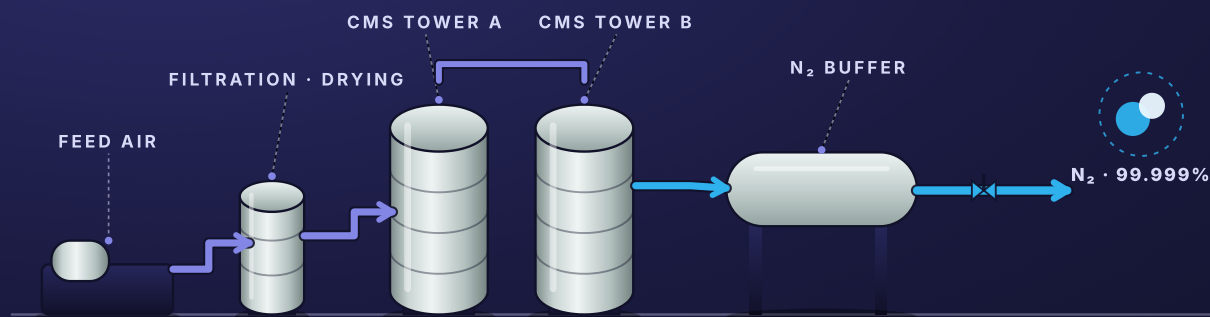
FULLY AUTOMATIC PSA
CYCLE

Compact

SKID-MOUNTED FOOTPRINT

PROCESS OVERVIEW

NITROGEN GENERATION PLANT



01 Overview

Brise Nitrogen Generation Plants put a captive nitrogen source inside your facility. Compact, fully automatic PSA systems separate nitrogen from compressed air using Carbon Molecular Sieves (CMS), delivering on-site nitrogen at up to 99.999% purity — on demand, at a fraction of the cost of cylinders or liquid deliveries.

Because oxygen molecules diffuse into CMS micropores faster than nitrogen, each pressurisation cycle strips oxygen from the airstream and lets nitrogen flow through as product. Twin beds alternate seamlessly between production and regeneration, so purity and flow stay constant while the plant runs unattended around the clock.

02 At a Glance



Up to 5N purity

Purity classes from 99% to 99.999% to match the application



Kinetic separation

CMS captures O₂ faster than N₂ — clean, chemical-free separation



Plug-and-produce

Compact skids commission quickly on a compressed-air supply

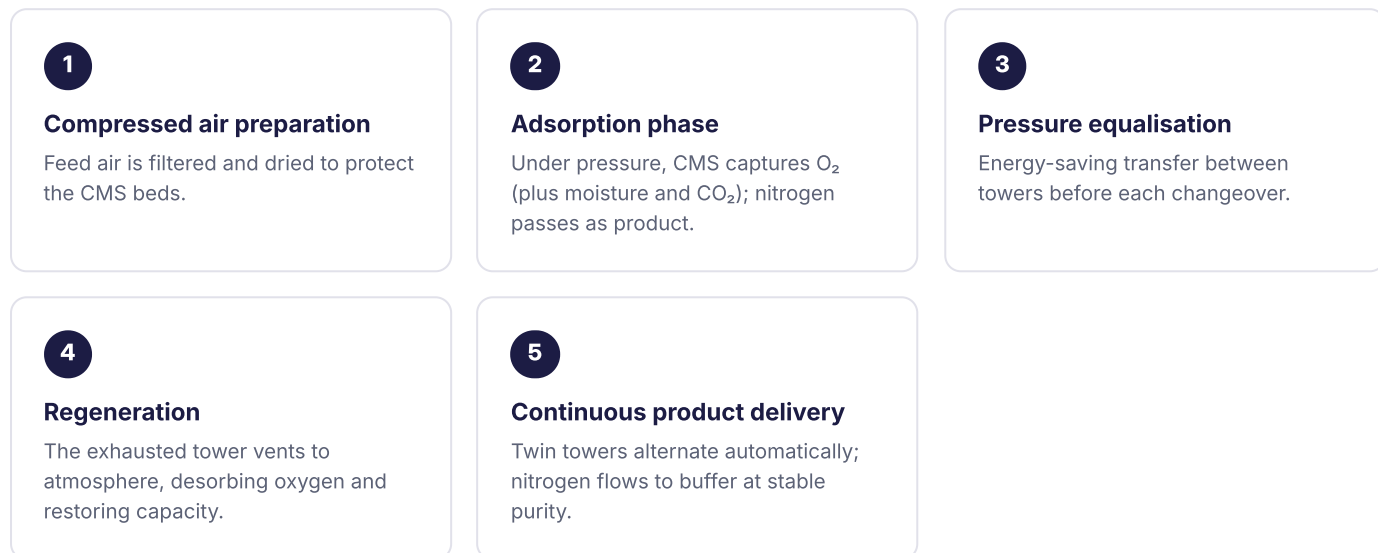


Set-and-forget

Fully automatic cycling with remote supervision

03 Technology & Process

PSA nitrogen generation is a kinetic separation: at elevated pressure, Carbon Molecular Sieves adsorb oxygen, moisture and CO₂ much faster than nitrogen. Swinging the bed to atmospheric pressure releases the captured gases — no consumable chemicals, no regeneration heat.



Three ways to buy nitrogen — compared

How captive PSA generation stacks up against purchased supply:

Cylinder banks	Recurring cost, handling effort, changeover interruptions and stock-out risk
Bulk liquid N₂	Evaporation losses, tank rentals and delivery dependence
On-site PSA (Brise)	Lowest cost per Nm ³ , purity on demand, complete supply control



End-to-end EPC delivery

Concept, FEED and engineering through construction, commissioning and PG testing.



Certified quality

ISO 9001 / 14001 / 45001 systems; designs per PESO, IEC, ATEX & IS standards.



Lifecycle partnership

Operator training plus AMC/CMC programmes for maximum plant uptime.

04 Technical Specifications

PARAMETER	SPECIFICATION
Technology	Pressure Swing Adsorption (PSA)
Adsorbent	Carbon Molecular Sieve (CMS)
Nitrogen purity	Up to 99.999% (selectable by application)
Feed	Clean, dry compressed air
Operation	Fully automatic PLC-controlled cycling
Configuration	Compact skid — twin adsorber towers + buffer
Monitoring	Online purity analysis; remote supervision
Capacity	Sized to demand — modular, expandable
Purity polishing	Optional DeOxo + dryer stage for ppm-level O ₂ duty

- ✓ Flow, purity class and delivery pressure are configured per application during basic engineering. Figures shown are design values from Brise Chemicals product documentation; final specifications are confirmed during detailed engineering.

05 Key Features

 Compact skid design Small footprint units that integrate into existing utility rooms.	 Fully automatic PLC-sequenced cycles hold purity and flow without operator input.	 Purity to 99.999% Selectable purity classes up to 5N for demanding processes.
 Lowest cost per Nm³ Generating on-site undercuts cylinder and liquid nitrogen supply.	 Minimal maintenance No moving beds, no chemicals — just filters and valves on schedule.	 Uninterrupted supply Twin-tower swing keeps product flowing during regeneration.

06 Applications & Industries



Pharmaceuticals

Inert blanketing, purging and API packaging



Food packaging (MAP)

Modified-atmosphere packaging and shelf-life extension



Electronics & semiconductor

Soldering, reflow and inert process atmospheres



Chemicals & petrochemicals

Tank blanketing, purging and pigging



Metals & fabrication

Bright annealing, laser cutting assist gas



Oil & gas

Pipeline purging, well services and inerting

07 Scope of Supply



Feed-air filtration & drying package



Twin-tower PSA generator skid with CMS charge



Product buffer vessel & purity analyser



PLC control with remote supervision



Optional DeOxo polishing & high-pressure boosting



Installation, commissioning, training & AMC/CMC

**CERTIFIED &
COMPLIANT**

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

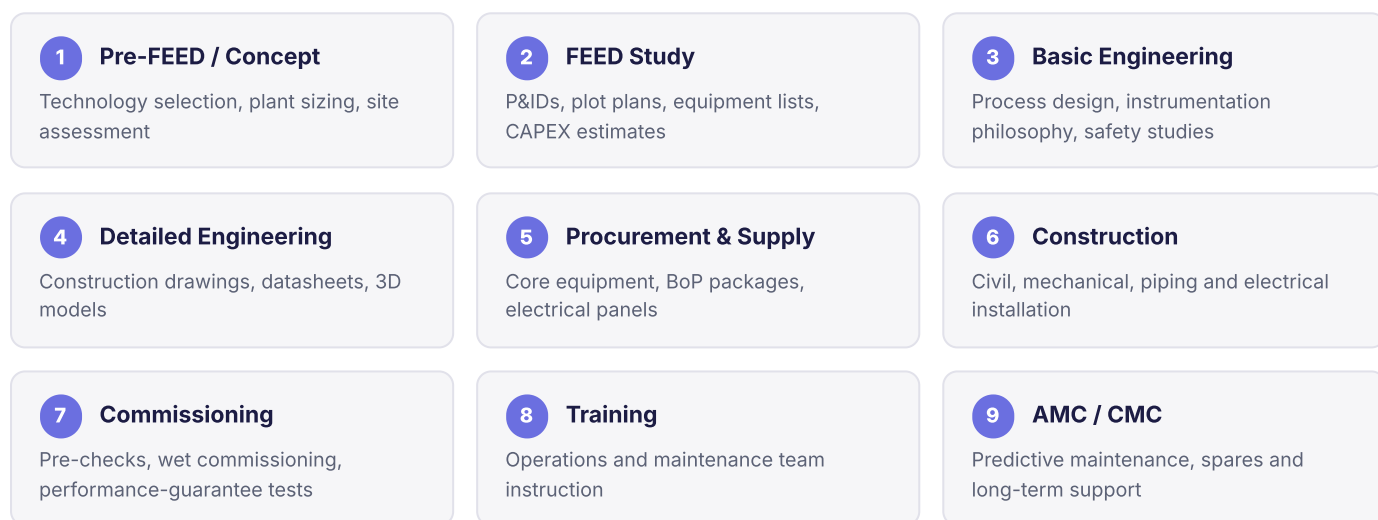
Designs compliant with PESO, IEC, ATEX & IS safety standards

08 About Brise Chemicals

Brise Chemicals Pvt. Ltd. is a technology-driven OEM and industrial gas plant technology owner, founded by professionals with deep experience across turbo-machinery, oil & gas, refineries and the industrial gas sector. From our engineering and fabrication base in Pune, India, we design, engineer, manufacture, install and commission cryogenic and non-cryogenic gas plants — spanning alkaline electrolysis, gas generation, gas purification, ammonia and methanol synthesis, air separation and hydrogen liquefaction.

Our name derives from the ballet step “Brisé” — a reminder that precision, integrity and discipline underpin everything we build. With in-house fabrication, certified welding, an HVOF catalyst-coating facility and rigorous QA/QC, we deliver complete EPC projects and stand behind them through long-term AMC/CMC support.

09 The Brise EPC Lifecycle



10 Industries We Serve



Let's engineer your plant.

Request a detailed proposal, FEED study or site consultation for the Nitrogen Generation Plant.


WORKS & REGISTERED OFFICE

Gat No. 53, Chikhali Dehugaon Road,
 Talawade, Tal Haveli, Pune, Maharashtra
 411062


PHONE

+91 89567 27434 · +91 91182 19118


UNIT II — CHAKAN

G No-686, Kuruli Phata, Chakan, Pune,
 Maharashtra 410501


EMAIL & WEB

sales@brisechemicals.com ·
 brisechemicals.com
 Mon–Sat 10:00–18:30 IST (Sunday closed)

