

GAS GENERATION · PSA / VSA OXYGEN

Oxygen Generation Plant

Continuous, on-demand oxygen at 93–96% purity, generated on your premises — cutting oxygen costs by up to 80%.

93–96%

OXYGEN PURITY

–80%

OXYGEN COST VS CYLINDERS

PSA / VSA

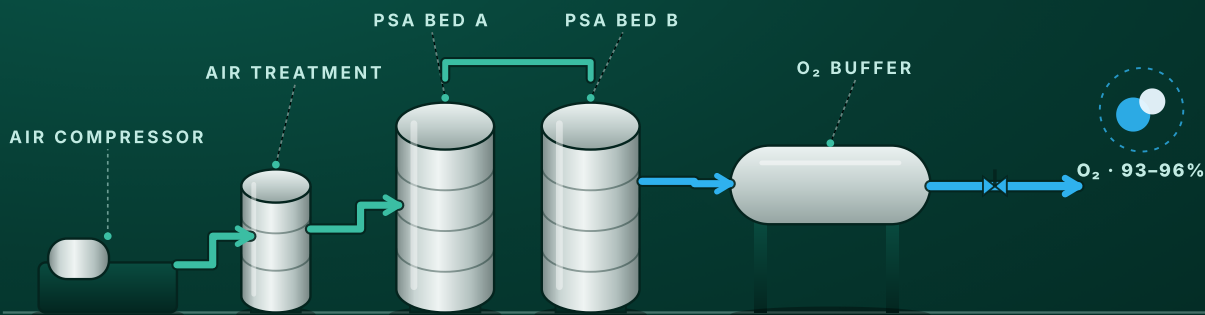
PROVEN ADSORPTION
TECHNOLOGY

24×7

FULLY AUTOMATIC SUPPLY

PROCESS OVERVIEW

OXYGEN GENERATION PLANT



01 Overview

Brise Oxygen Generation Plants produce oxygen where it is consumed — separating it from ambient air with proven Pressure Swing Adsorption (PSA) and Vacuum Swing Adsorption (VSA) technology. The result is a continuous, on-demand supply of 93–96% purity oxygen that ends dependence on cylinder logistics and liquid deliveries, reducing oxygen costs by up to 80%.

The platform is delivered in two application-tuned variants — Medical Oxygen for healthcare facilities and Industrial Oxygen for process industries — sharing the same fully automatic, remotely monitored generation core. Plants run unattended, need minimal maintenance and occupy a fraction of the space of cylinder banks.

02 At a Glance



Two variants

Medical-grade for healthcare; industrial-grade for process use



On-site independence

No cylinder logistics, no external supply-chain exposure



Safer operation

Low-pressure generation versus high-pressure cylinder handling



Remote monitored

Digital supervision and parameter control from anywhere

03 Technology & Process

PSA exploits the affinity of zeolite molecular sieves for nitrogen: under pressure the sieve captures N_2 while oxygen passes through; swinging the bed to low pressure releases the nitrogen and regenerates the sieve. Twin beds alternate so product flow never stops. VSA applies the same principle with vacuum regeneration for larger flows at lower specific energy.

1

Air intake & treatment

Ambient air is compressed, cooled, filtered and dried to protect the adsorbent beds.

2

Adsorption

Pressurised air flows through a zeolite molecular sieve bed; nitrogen and moisture are captured.

3

Oxygen delivery

93–96% oxygen exits to a surge/buffer vessel that smooths pressure and flow.

4

Regeneration

The saturated bed is depressurised (or evacuated in VSA), venting nitrogen and restoring capacity.

5

Twin-bed swing

Two beds alternate adsorption and regeneration in a continuous automated cycle — 24×7 supply.

Cylinders vs on-site generation

What changes when oxygen is produced where it is consumed:

Supply security	Deliveries and stock-outs are replaced by continuous 24×7 on-site production
Cost structure	Recurring purchase, rental and transport charges fall by up to 80%
Safety	Low-pressure generation replaces high-pressure cylinder storage and handling
Space	A compact skid replaces cylinder banks and manifold rooms
Control	Purity, pressure and availability are monitored and managed by you



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 / Vacuum Swing Adsorption (PSA / VSA)
Feed	Ambient air (compressed, filtered, dried)
Adsorbent	Zeolite molecular sieve
Oxygen purity	93–96%
Capacity	Sized to demand — modular skid-mounted units
Operation	Fully automatic; minimal human intervention
Monitoring	Remote digital monitoring & control
Variants	Medical oxygen · Industrial oxygen
Delivery	Direct pipeline supply; buffer storage included

- ✓ Capacity, delivery pressure and skid configuration are engineered per site during FEED / basic engineering. Figures shown are design values from Brise Chemicals product documentation; final specifications are confirmed during detailed engineering.

05 Key Features

 Fully automatic Self-regulating separation and output stabilisation with minimal operator attention.	 Remote monitoring & control Centralised digital supervision with adjustable parameters.	 Energy efficient Optimised power consumption per Nm ³ keeps operating costs low.
 Low maintenance Robust industrial components and simple adsorption mechanics.	 Compact footprint A fraction of the space demanded by cylinder banks and manifold rooms.	 Inherently safer Low-pressure on-site generation avoids high-pressure cylinder handling risks.

06 Applications & Industries



Hospitals & healthcare

Continuous medical-grade oxygen at the point of care



Steel & metal processing

Enrichment, cutting and furnace applications



Chemical & petrochemical

Oxidation processes and reactor feed



Glass & cement

Combustion enrichment for kilns and furnaces



Energy & power

Gasification and combustion support



Wastewater treatment

Aeration and advanced oxidation duty



Cutting & welding

Reliable industrial oxygen at the workshop

07 Scope of Supply



Air compression & treatment package



PSA/VSA generator skid with twin adsorber vessels



Buffer vessel & product analysis instrumentation



PLC control with remote monitoring



Installation, commissioning & operator training



AMC/CMC lifecycle support

**CERTIFIED &
COMPLIANT**

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

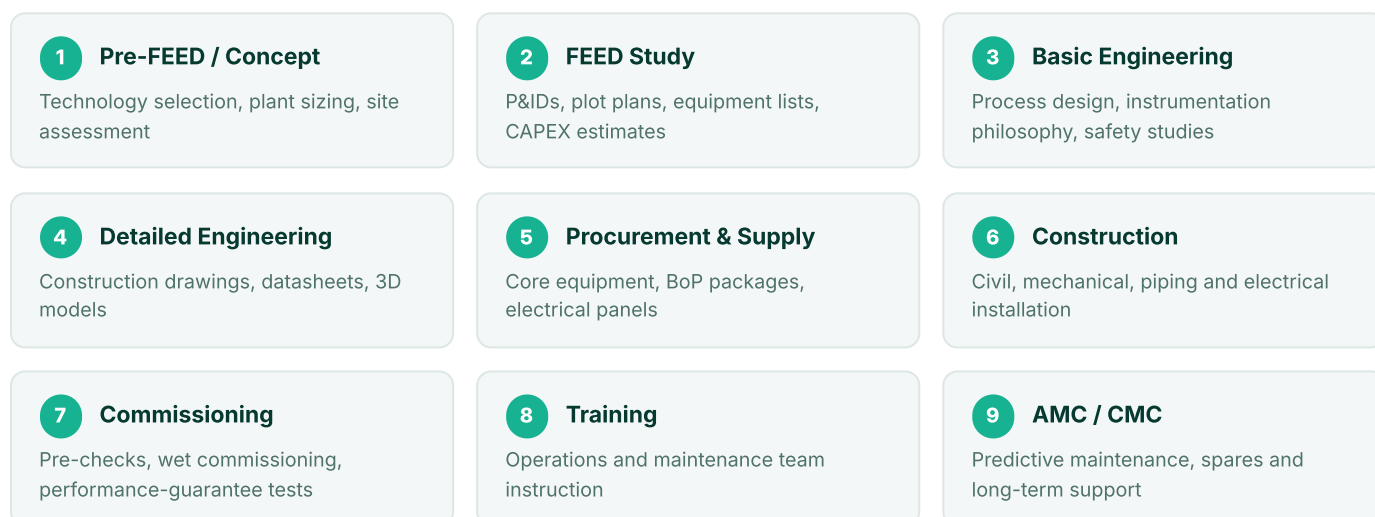
Designs compliant with PESO, IEC, ATEX & IS safety standards

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 Oxygen Generation Plant.


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