

SPECIALTY SYSTEMS · GREEN SYNTHESIS

Green Ammonia Plant

Integrated Haber-Bosch synthesis from 1 to 200 TPD — 99.99% purity green ammonia from renewable hydrogen and nitrogen.

1–200

TPD PRODUCTION RANGE

99.99%

PURITY — 6N CUSTOM
AVAILABLE

150–300

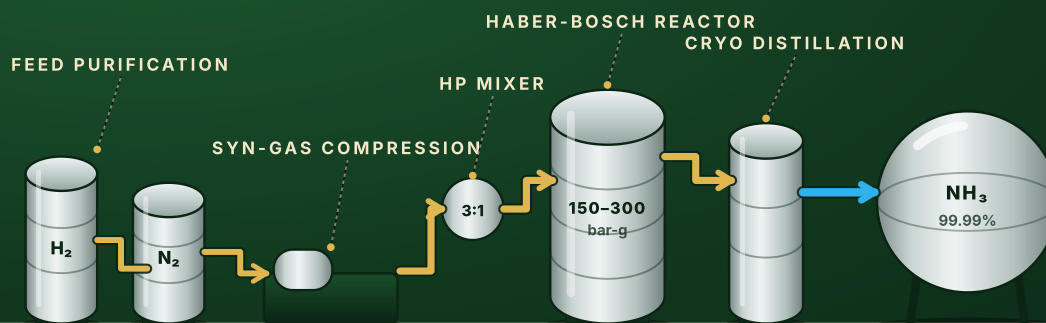
BAR-G SYNTHESIS PRESSURE

85%

PLANT EFFICIENCY

PROCESS OVERVIEW

GREEN AMMONIA PLANT



01 Overview

Ammonia is the workhorse molecule of global agriculture — and, increasingly, the leading candidate for moving renewable energy across oceans. The Brise Green Ammonia Plant is an integrated Haber-Bosch reactor system producing up to 200 tonnes per day of green ammonia at 99.99% purity, from renewable hydrogen and nitrogen instead of fossil feedstocks.

The plant integrates the full chain: hydrogen and nitrogen purification and compression, precision 3:1 stoichiometric mixing, high-pressure catalytic synthesis, and cryogenic distillation of the product into liquid ammonia for storage and despatch. The system emphasises high efficiency, safety and continuous operation, ensuring consistent, high-quality output at 85% plant efficiency.

02 At a Glance



Fully integrated

From feed-gas purification to liquid ammonia storage



Wide capacity band

1 TPD pilot plants to 200 TPD industrial systems



Green feedstock

Runs on electrolytic H_2 and air-separated N_2

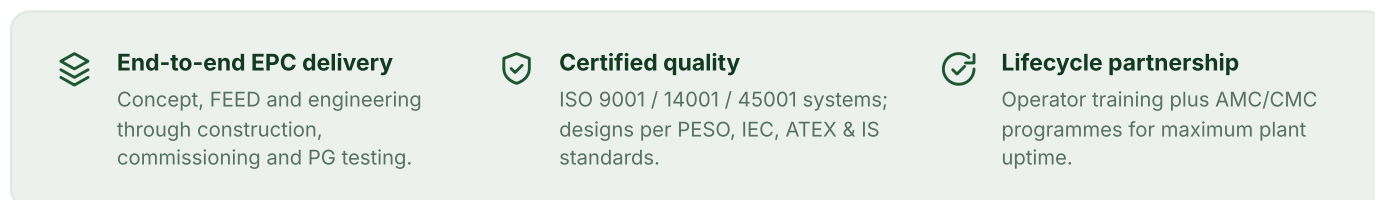
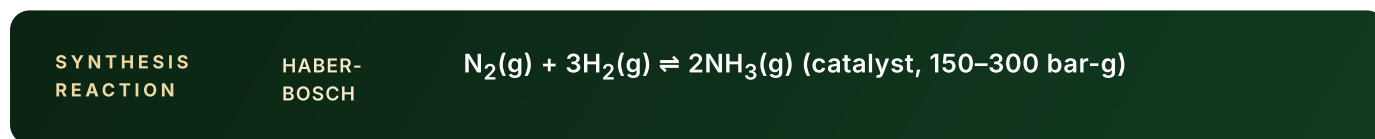
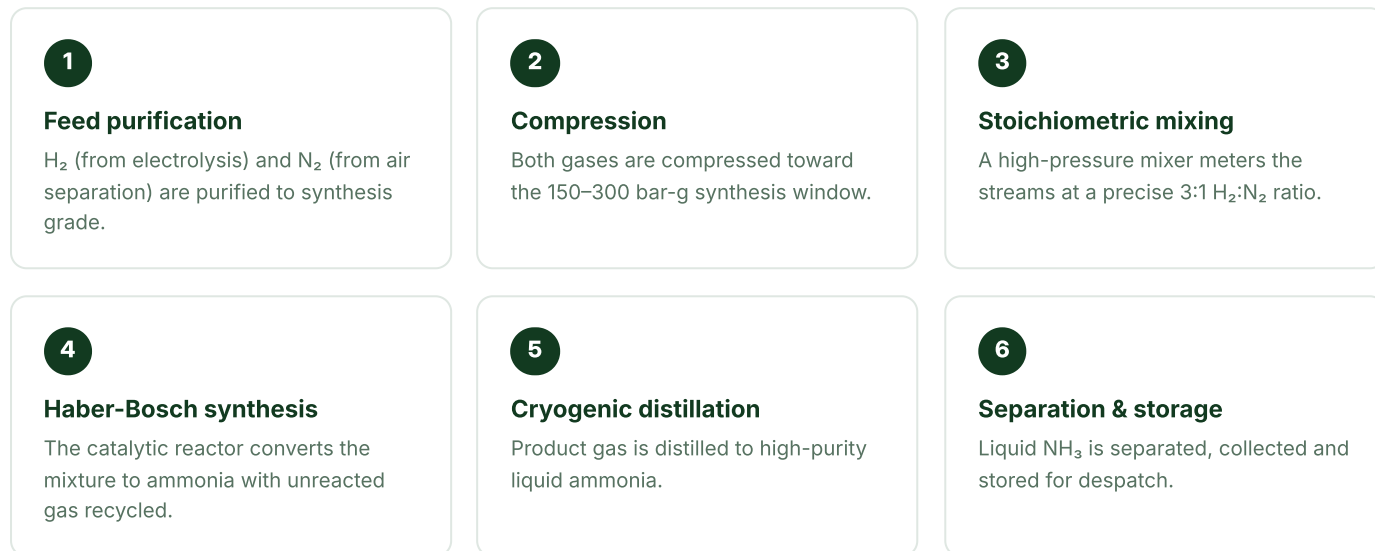


Custom purity

99.99% standard; 6N grades available on request

03 Technology & Process

Hydrogen and nitrogen are purified, compressed and combined at exactly 3:1, then converted over catalyst at 150–300 bar-g in the Haber-Bosch reactor; cryogenic distillation condenses the product into high-purity liquid ammonia:



04 Technical Specifications

PARAMETER	SPECIFICATION
Technology	Integrated Haber-Bosch reactor system
Production capacity	1 TPD to 200 TPD
Operating pressure	150–300 bar-g
Product purity	99.99% (custom 6N available)
Plant efficiency	85%
H ₂ : N ₂ feed ratio	3 : 1
Product handling	Cryogenic distillation → liquid NH ₃ storage
Specific energy consumption	Engineered to client input / feed profile
Operation	Continuous, automated, safety-interlocked

✓ Feed-gas source (electrolyser / ASU), storage capacity and despatch configuration are fixed during FEED. Figures shown are design values from Brise Chemicals product documentation; final specifications are confirmed during detailed engineering.

05 Key Features



Pilot to industrial scale

The same integrated architecture spans 1 TPD demonstrations to 200 TPD plants.



High-pressure done right

150–300 bar-g synthesis loop engineered with certified safety systems.



Consistent 4N product

99.99% purity as standard; custom 6N grades for specialty demand.



85% plant efficiency

Heat integration and gas recycle keep conversion economics strong.



Genuinely green

Designed around renewable hydrogen and nitrogen feedstocks.



Continuous operation

High-availability design for steady, high-quality output.

06 Applications & Industries



Fertiliser production

Green ammonia for urea and nitrate value chains



Energy storage

Carbon-free chemical storage of renewable power



Power generation fuel

Co-firing and dedicated ammonia-to-power



Marine & heavy transport

Zero-carbon bunker fuel for shipping



Chemical feedstock

Building block for the chemical industry

07 Scope of Supply



Feed purification & compression trains



High-pressure mixing & synthesis loop



Haber-Bosch reactor & catalyst charge



Cryogenic distillation & liquid NH₃ storage



Safety systems, PLC/DCS controls



Commissioning, training & AMC/CMC

**CERTIFIED &
COMPLIANT**

ISO 9001:2015

ISO 14001:2015

ISO 45001:2018

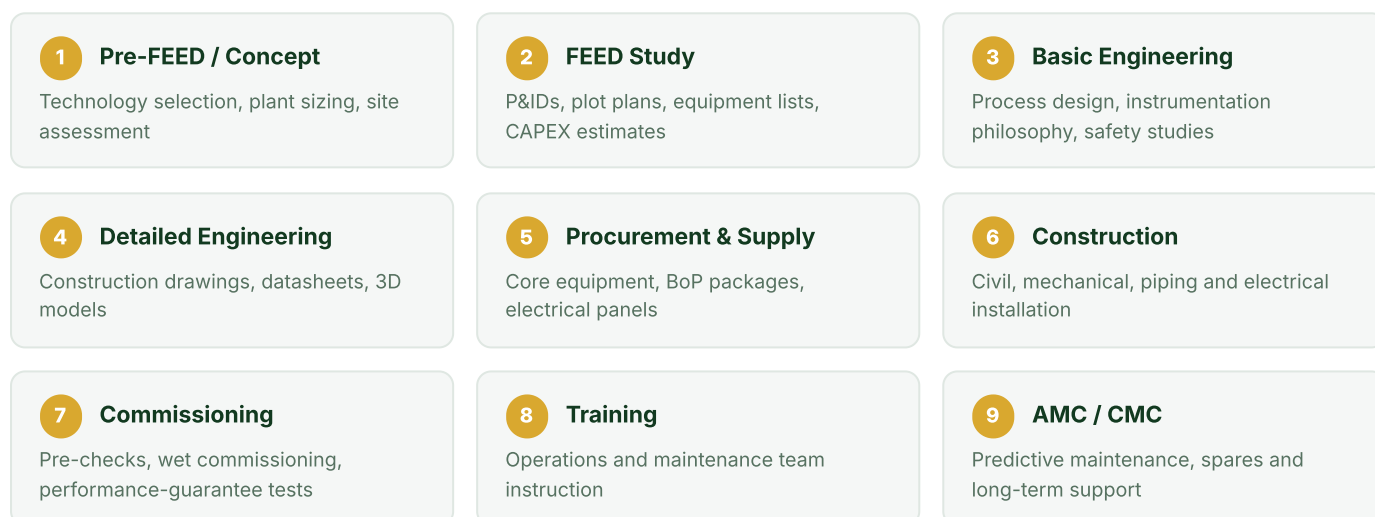
Designs compliant with PESO, IEC, ATEX & IS safety standards

08 About Brise Chemicals

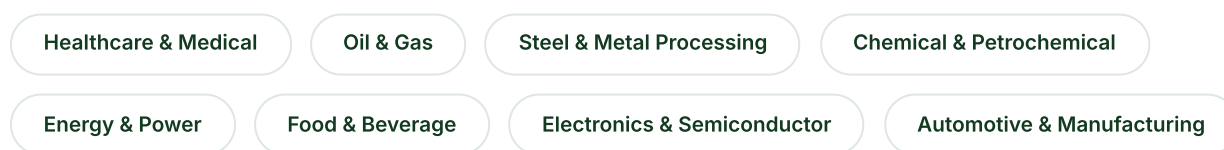
Brise Chemicals Pvt. Ltd. is a technology-driven OEM and industrial gas plant technology owner, founded by professionals with deep experience across turbo-machinery, oil & gas, refineries and the industrial gas sector. From our engineering and fabrication base in Pune, India, we design, engineer, manufacture, 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 Green Ammonia Plant.



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