

Making our world more productive



# Containerized air separation plants

Modular design for ease of transport and rapid installation





## A partner you can trust

# Proven track record – from the Antarctic to the Sahara

Linde Engineering designs, manufactures and installs standardized small and medium-sized air separation plants for reliable on-site supplies of high-purity nitrogen or oxygen. Containerized designs simplify transportation, also giving you the added benefit of easy, cost-effective and fast installations as well as rapid start-up on site. Complementing our standard portfolio, we custom-engineer designs to support your specific requirements and the standards of interest to you, including ASME, PED, TR CU (Russia), DOSH, ISQL and KGS.

Certified to ISO 9001:2015, we have also won multiple technology awards. All of our plants are designed to operate in extreme environments – from the South Pole to the Sahara Desert. Prior to shipping, all plants undergo full inspection and testing at our UK workshop, including a Factory Acceptance Test (FAT) for plants up to a certain frame size.

### Industry-proven expertise

Our plants are successfully deployed by industries such as

- Electronics
- Glass
- Industrial gases
- Metals
- Petrochemicals
- Food & beverage
- Medical
- Research

### Complementary services

We provide a full spectrum of services during the entire lifecycle.

- Worldwide aftersales service
- Erection supervision, installation, commissioning and start-up services
- Full product training
- Plant maintenance contracts

### Broad model lineup

We offer a number of models supporting different capacity and purity ranges to ensure the perfect fit for your needs.

#### ECOGAN

Energy-efficient double-column design, based on either LIN injection or turbine technology, for OPEX savings of up to 30% compared with single-column models. ECOGAN plants deliver gaseous and liquid nitrogen at volumes of up to 6,990 Nm<sup>3</sup>/h.

#### GAN

Featuring proprietary turbine technology, this range is optimized for gaseous and liquid production in areas with no liquid nitrogen supplies. GAN plants deliver gaseous and liquid nitrogen at volumes of up to 3,500 Nm<sup>3</sup>/h.

#### MINIGAN

LIN injection technology for optimized CAPEX, MINIGAN plants produce gaseous nitrogen at volumes of up to 2,700 Nm<sup>3</sup>/h.

#### LINIT

Based on our proprietary turbine technology, these compact units are ideal for small-scale and specialized applications. LINIT systems produce liquid nitrogen at volumes of up to 100 liters per hour.

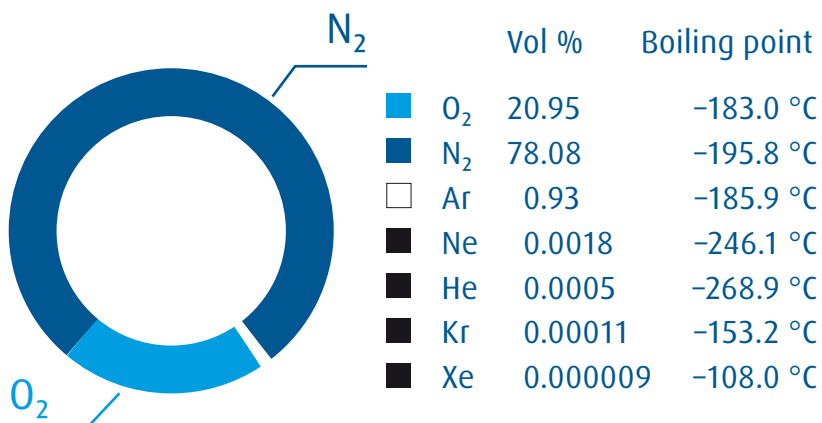
#### LOX

Liquid oxygen plants supporting volumes of up to 80 Nm<sup>3</sup>/h.

# At a glance

## Containerized ASU facts and figures

Composition of air



### Capacity

200 Nm<sup>3</sup>/h to  
6990 Nm<sup>3</sup>/h

### 2015 ECOGAN

launch with 11 units sold  
in first 2 years

**250+**

containerized air  
separation plants  
have been built  
by Linde

**160+**

of these are owned  
and operated  
by Linde

**0.19**

kW/Nm<sup>3</sup>/h  
Average spec  
power

4x LOX plants

55x LINIT

60x GAN plants

120x MG

**11x ECOGAN plants**

**-35 °C to +45 °C**

temperature range of all-weather installations  
from Linde Engineering

**90+**  
countries

including site at the  
South Pole are home to  
containerized air  
separation plants built  
by Linde



# Your partner for the production and processing of gases

## Delivering reliable process plants for maximum capital efficiency

Linde has been optimizing gas processing technologies for 140 years, successfully delivering more than 4,000 plant engineering projects around the globe. Favoring trusted, lasting business relationships, the company collaborates closely with customers to enhance plant lifecycle productivity and innovate process flows. The company's proven gas processing expertise plays an indispensable role in the success of customers across multiple industries – from natural gas and oil refining through petrochemicals and fertilizers to electronics and metal processing.

## Operational excellence along the entire plant lifecycle

We work closely with our customers to gain an in-depth understanding of individual needs. Building on the unique synergies of Linde as an integrated plant operator and engineering company, Linde offers innovative process technologies and services to exceed our customers' reliability and profitability expectations. This commitment to innovation extends along the entire plant lifecycle. The LINDE PLANTSERV® service team supports customers every step of the way – from maintenance and repairs to full revamps. Leveraging the latest digital technologies to offer on-site and remote operational and support services, we consistently take asset performance to the next level.

## Making the impossible possible

From the desert to the Arctic, from small- to world-scale, from standardized to customized designs, Linde's engineering specialists develop solutions that operate under all conditions. The company covers every step in the design, project management and construction of gas processing plants and components. Customers can always rely on Linde to deliver the plants, components and services that fit their needs best – anywhere in the world.

Discover how we can contribute to your success at [www.linde-engineering.com](http://www.linde-engineering.com)

Get in touch with our containerized ASU sales team:

Phone +44 1252 331-351, inquiry: [www.linde-engineering.com/contact](http://www.linde-engineering.com/contact)

## Core competencies at a glance

### Plant engineering

- Air separation plants
- LNG and natural gas processing plants
- Petrochemical plants
- Hydrogen and synthesis gas plants
- Adsorption plants
- Cryogenic plants
- Carbon capture and utilization plants
- Furnaces, fired heaters, incinerators

### Component manufacturing

- Coldboxes and modules
- Coil-wound heat exchangers
- Plate-fin heat exchangers
- Cryogenic columns
- Cryogenic storage tanks
- Liquefied helium tanks and containers
- Air-heated vaporizers
- Water bath vaporizers
- Spiral-welded aluminum pipes

### Services

- Revamps and plant modifications
- Plant relocations
- Spare parts
- Operational support, troubleshooting and immediate repairs
- Long-term service contracts
- Expert reviews for plants, operations and spare part inventory
- Operator training



Linde CryoPlants Ltd., Blackwater Park, Holder Rd, Aldershot GU12 4PQ, United Kingdom

Phone +44 1252 331-351, [sales@lindecryoplants.com](mailto:sales@lindecryoplants.com)

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