



Air Liquide @FAIR

Global Markets & Technologies

France @FAIR
Aziz ABIDA - Big Science Market Analyst

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A world leader in gases, technologies, and services for...



INDUSTRY

Cleaner and sustainable solutions for a wide range of industrial processes of our customers: energy, metals, food, chemicals, automotive, pharmaceuticals, etc.



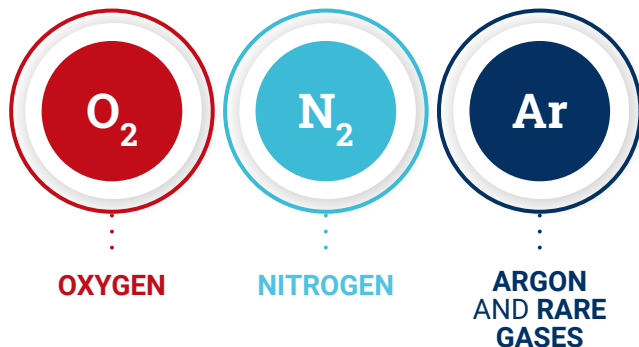
HEALTH

Patients at home
Hospitals
Specialty ingredients

Our scientific territory: Essential small molecules

Oxygen, nitrogen and hydrogen are essential small molecules. They embody Air Liquide's scientific territory and have been at the core of the company's activities since its creation in 1902.

Separating the components of **air**
to take advantage of their properties



Producing molecules from the
natural resources of the planet



Air Liquide & Big Science

Our Contribution



Nuclear fusion

Domain of Interest:

Superconducting magnets, cryopumps

Equipments

Cryoplant 80 K / 20 K
/ 4 K / 2 K/
Cryolines, Valves boxes

Gases

Isotopes
Deutérium, tritium
Cryogenic fluids
LHe, LN2



Particle accelerators and colliders

Domain of Interest:

Superconducting magnets, RF cavities, detectors

Equipments

Cryoplant 80K/ 20K/
4K / 2K
Cryolines, Valve boxes

Gases

Cryogenic fluids
LHe, LN2, LAr



Light Sources

Domain of Interest:

Superconducting magnets, RF Cavities, detectors, undulators, wigglers

Equipments

Cryoplant 2K & 4K
Dilution
refrigerators

Gases

Cryogenic fluids
LHe, LN2, He3



Cold Neutron Sources

Domain of Interest:

Neutrons moderator, Superconducting magnets, RF Cavities, neutrons detectors

Equipments

Cryoplant 4K &
20K

Gases

Isotopes
Deutérium
Cryogenic fluids
LHe, LN2



Physics laboratories

Domain of Interest:

Experiments for Big Science research

Equipments

Helium Liquefiers 4K

Gases

Cryogenic fluids
LHe, He3



Quantum computing

Domain of Interest:

Superconducting electronic circuits

Equipments

Dilution
Refrigerators

Gases

Cryogenic fluids
LHe, He3

Air Liquide & Big Science

Our products

Air Liquide products

→ Standard Helium Liquefiers (LHe)

Key customers: universities, CEA, CNRS, GSI

→ Standard Helium Refrigerators (HR)

Key customers: research centers

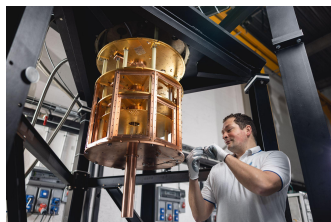
→ Large customized helium refrigerators (Cryoplants)

Key projects: ITER, JT-60SA, CERN, FNAL, SLAC, JLAB

→ Cryo-distribution

Key projects: CERN and ITER Cryolines, JT-60SA main valve box

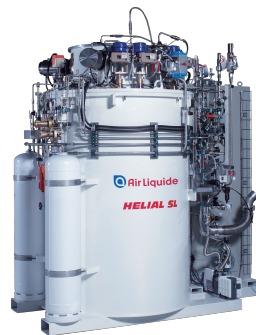
→ Dilution refrigerators



Cryoconcept Dilution refrigerator



Air Liquide Turbo-Brayton



Helium standard liquefier



Cryolines for ITER



ITER helium cold box



Cryolines delivered to the CERN (27km)

Air Liquide in Germany

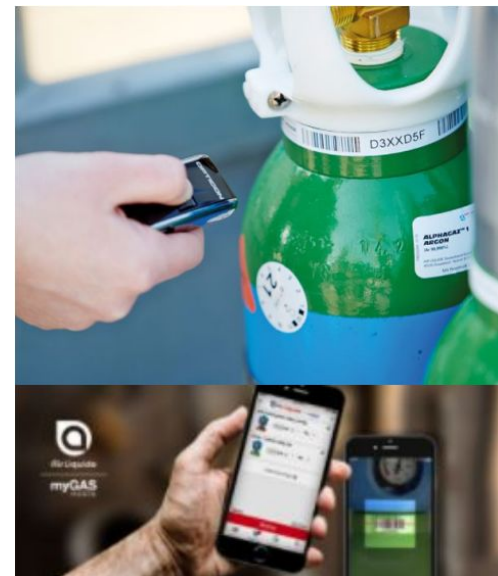
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You can find a comprehensive overview of our product portfolio in our gas catalog gasekatalog.airliquide.de as well as in our customer portal at mygas.airliquide.de



Thank you

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