



Air Products

Gas Supply Solutions and
Application Equipment for
Lithium-Ion Battery Production

Air Products

A World-Leading Industrial Gases Company

Air Products is a world-leading industrial gases company in operation for over 75 years. The company provides industrial gases and related equipment to dozens of industries, including refining, chemical, metals, electronics, manufacturing, and food and beverage.

The company has built a reputation for its innovative culture, operational excellence and commitment to safety and the environment. Our passionate, talented and committed employees aim to make Air Products the safest, most diverse and most profitable industrial gases company in the world, providing excellent service to our customers.



- NYSE listed (APD)
- Headquartered in Allentown, Pennsylvania, USA
- One of the safest companies in the industry

Reaching Globally • Acting Locally



As you build or expand your manufacturing operations, we will leverage our global team to provide effective new capital deployment, on time start-up support, and operational readiness inspections.

High Quality Industrial Gases

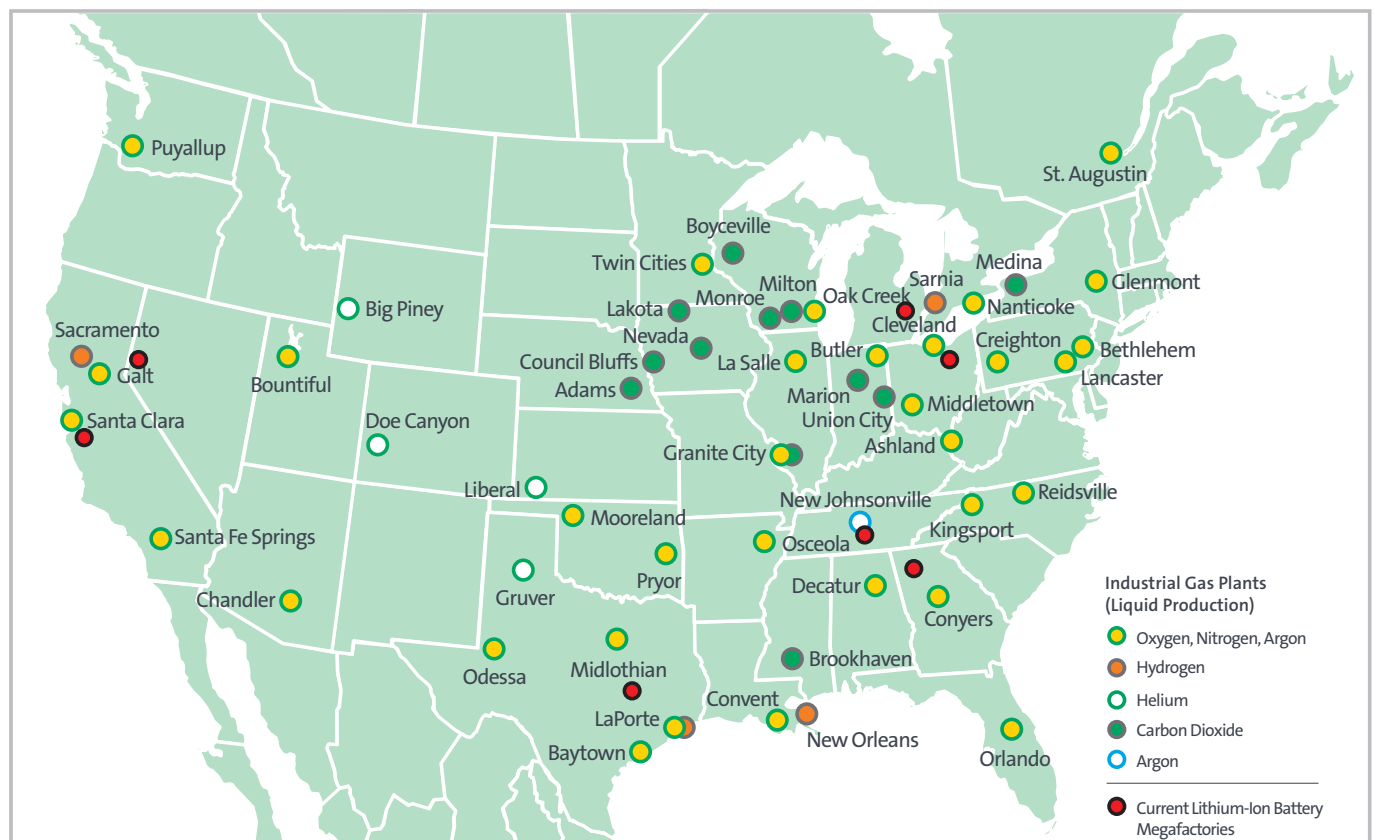
Air Products supports lithium-ion battery production with its high purity and high quality gas supply and solutions.



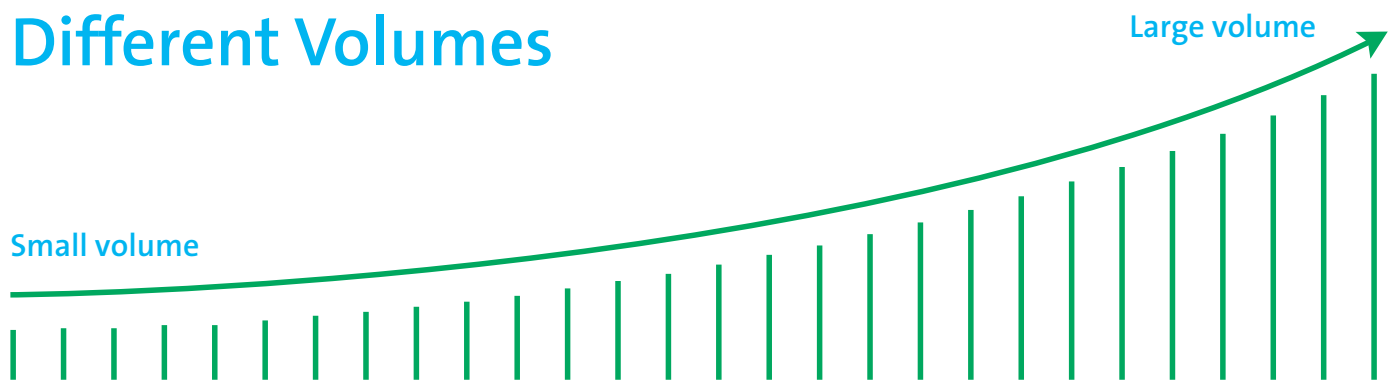
Stable and Reliable Gas Supply

Keeping your operation up and running is critical. The last thing you want to worry about is a “run out” of your industrial gas supply. That’s exactly why customers depend on Air Products. Our 99.95% delivery record ensures our customers’ operations are not disrupted. For over 80 years we have offered that kind of peace of mind and a whole lot more.

- A full range of gases and supply modes nitrogen, oxygen, argon, hydrogen, helium, carbon dioxide, and carbon monoxide
- Extensive supply network providing 99.95% reliability supplying product on time that meets flow, purity, and pressure specs
- An unmatched safety record as a recognized gas industry safety leader, we are committed to safety and sustainability at your facility and ours



Flexible Supply Options for Different Volumes



Cylinders/dewars



CryoEase® Microbulk Service



Liquid bulk



On-site gas generation



Large air separation unit and pipeline system

Cylinders/dewars

Air Products partners with local distributors to provide packaged gases. Small volumes of gas can be provided using cylinders or dewars.

Applicable gases: nitrogen, oxygen, argon, helium, hydrogen, carbon dioxide, and carbon monoxide

CryoEase Microbulk Service

CryoEase Service is a simple and flexible supply option using compact on-site cryogenic tanks or cylinder packs (He, H₂) that are regularly replenished by specially-designed delivery vehicles. Air Products also offers comprehensive pipeline installation service to help you optimize efficiency.

Applicable gases: argon, nitrogen, and oxygen

Liquid bulk

A large volume on-site cryogenic tank is an ideal option for large-volume users. Liquid bulk gases will be delivered to your site by cryogenic trucks and stored in on-site cryogenic tanks. The remote monitoring system helps you monitor gas usage to ensure uninterrupted production.

Applicable gases: argon, carbon dioxide, helium, hydrogen, nitrogen, oxygen



On-site gas generation

Air Products' PRISM® on-site gas generation systems bring stable and economical gas supply to lithium-ion battery customers. We design and install the systems based on your production needs, and provide gases that meet your purity, flow rate and pressure requirements. We also help improve productivity and safety by remotely monitoring the gas generation system on your site.

- PRISM VSA (vacuum swing adsorption) oxygen generation system
- PRISM PSA (pressure swing adsorption) nitrogen generation system
- PRISM cryogenic nitrogen generation system
- PRISM hydrogen generation system

Large air separation unit and pipeline system

We can build air separation plants at your sites according to your needs. Large volume of gases is supplied on real-time basis via pipeline systems in a safe and reliable way. We also help optimize resources allocation and reduce production cost.


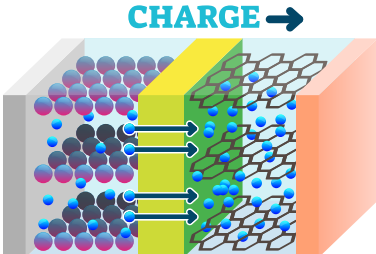
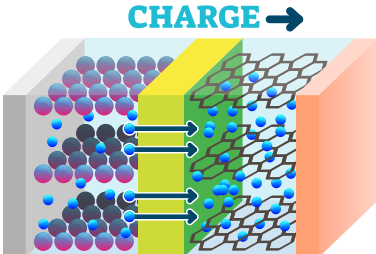
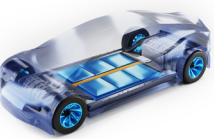


Applicable gases: argon, nitrogen, oxygen



Gas Applications for Lithium-Ion Battery Production

As an indispensable component in manufacturing, industrial gases are widely used in various processes in lithium-ion battery production. As a world-leading industrial gas supplier with extensive industry experience, Air Products offers high quality gases, applications technologies, equipment, and services to meet your requirements on volume and purity, to help you reduce cost, improve productivity, product quality and safety.

Our experts also provide on-site process and technical support, including gas equipment safety inspection and training.

Mining/ Refining	Chem Processing	Components	Battery Assembly	OEM	Recycling
					
Material production and refining	Material production	Material production (heat treatment); enclosures	Cell assembly; welding; leak checking	Welding	Battery disassembly; material regeneration
Oxygen, nitrogen and hydrogen supply for inerting, hydrometallurgy, pyrometallurgy, and refining processes	Nitrogen, oxygen, carbon monoxide and carbon dioxide supply for inerting and chemical production	Nitrogen, oxygen, hydrogen, and argon for melting, refining, coil annealing and heat treatment Process optimization: atmosphere detection, optimization and control	Nitrogen and argon for inerting Welding process gases Helium for leak testing	Argon, carbon dioxide and oxygen for welding	Nitrogen and oxygen supply for cryogenic grinding & pyrometallurgy CO₂ supercritical extraction Process optimization: atmosphere detection and control

Comprehensive Technical Support for Lithium-Ion Battery Production

Air Products Technology Center

Air Products has its own research and development capabilities. Leveraging our deep understanding of local needs, as well as resources and capabilities in other parts of the world. Our technical experts bring innovative gas applications solutions closer and faster to customers around the world to meet their production needs.

- [Atmosphere detection](#) (H_2 , O_2 , CO, CO_2 , C_xH_y , SO_x , NO_x) for product quality control, production safety and environmental protection
- [Atmosphere control](#) (including furnace atmosphere control, dew point control, and hydrogen monitoring) to control the heat treatment process and improve product quality
- [Argon recycle and reuse](#) to save resources and reduce cost
- [CFD flow field and thermal field simulation](#) to effectively optimize parameters, reduce the number of experiments, improve optimization efficiency
- [Pilot-scale combustion laboratory](#) with state-of-the-art instrumentation and process control capabilities to enable you to test your application to its full potential.





**For more information,
please contact us at:**

Corporate Headquarters

Air Products and Chemicals, Inc.
1940 Air Products Blvd.
Allentown, PA 18106-5500
T 800-654-4567
F 800-272-4449
info@airproducts.com

Canada

Air Products Canada Ltd
2233 Argentia Rd suite 203
Mississauga, ON L5N 2X7
T 800-654-4567 / 905-816-6670
info@airproduct.com



tell me more
airproducts.com/LithiumIon