



Gas solutions for metal powder inert gas atomization equipment

Metal powder production



Linde gas for your inert gas atomization equipment

The perfect offering for high-quality metal powder feedstock for Additive Manufacturing and Powder Metallurgy



Linde cryogenic vessel



EIGA atomizer*



Linde cryogenic vessel



VIGA atomizer*

When you invest in the latest inert gas atomization technology you appreciate the high-quality powder feedstock it produces. Your choice of gas supply is a crucial ingredient to the success of your process, as it can have a major impact on your productivity and quality.

So how do you choose the right gas supply?

*Courtesy of ALD Vacuum Technologies GmbH, one of the leading providers of inert gas atomization equipment

Linde gas supply

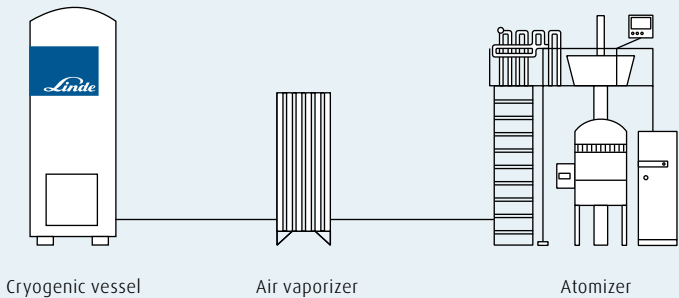
Quality guaranteed

Linde can offer you the right gas and supply modes depending on your operating conditions, like the type of gas, the melt rate per batch, the atomizing flow and time, the total batch time and the atomizing pressure.

Low pressure gas supply ($p \leq 32$ bar)

Linde gas supply contains:

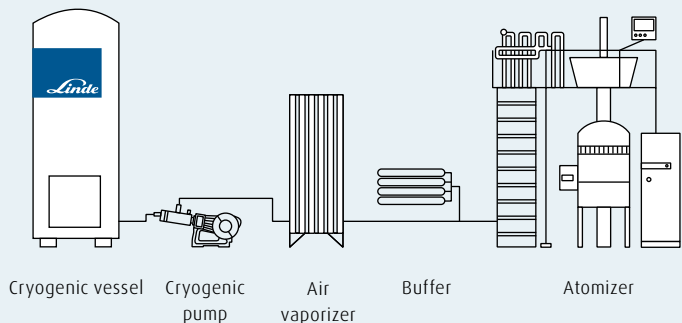
- Cryogenic vessel
- Air vaporizer
- All required pipes and connectors



High pressure gas supply ($p \geq 32$ bar)

Linde gas supply contains:

- Cryogenic vessel
- Cryogenic pump
- Air vaporizer
- Buffer
- All required pipes and connectors



Technical data of gas supply modes

	Low pressure gas supply ($p \leq 32$ bar)*	High pressure gas supply ($p \geq 32$ bar)
Inert gas atomization equipment	EIGA/VIGA	VIGA/EIGA
Atomization gas	Argon or nitrogen	Nitrogen or argon
Atomization gas pressure	≤ 32 bar	≥ 32 bar
Atomization gas flowrate	any	any
Atomization equipment	Cryogenic vessel, pressure built up vaporizer, air vaporizer**	Cryogenic vessel, pressure built up vaporizer, cryogenic pump, air vaporizer, buffer***
Equipment footprint	54–169 m ²	90–289 m ²
Electrical power needed	Not applicable	4–15 kW

* $p \leq 32$ bar is the cryogenic vessel pressure

**optional: buffer, waterbath vaporizer, electrical heater

***optional: waterbath vaporizer, electrical heater

To ensure the quality of the gas from the cryogenic vessel to the atomizer it is necessary to have pipework that meets individual country regulations and customer requirements. Dimensions of the pipework not only depends on flow rate, but also on the distance between gas supply and atomizer.

Further additions include optional Internet connection and warm water or steam. These items will assist in reducing your equipment's footprint.

Making the most of your metal powder inert gas atomizer with Linde

We are able to meet any demand and can provide you with complete solutions, including the right gas, with continuous supply and equipment, services and extensive process know-how.

We recommend you contact Linde as soon as you have ordered your new metal powder inert gas atomization equipment. Linde's network of trained gas supply engineers, backed up by a strong global team of metal powder application specialists, look forward to working with you on a solution that meets your specific needs.

We can provide you with the perfect gas package to ensure your new equipment is up and running quickly and smoothly.

With our production facilities and tank trailers we are able to serve you in more than 100 countries worldwide with our reliable gas supply concept. And with different cryogenic vessels that can contain up to 80,000 liters of liquid gas we are able to meet all your likely future requirements.

Contact your local Linde office now, or email us at: info-additivemanufacturing@linde.com.

Getting ahead through innovation.

With its innovative concepts, Linde is playing a pioneering role in the global market. As a technology leader, it is our task to constantly raise the bar. Traditionally driven by entrepreneurship, we are working steadily on new high-quality products and innovative processes.

Linde offers more. We create added value, clearly discernible competitive advantages, and greater profitability. Each concept is tailored specifically to meet our customers' requirements – offering standardized as well as customized solutions. This applies to all industries and all companies regardless of their size.

If you want to keep pace with tomorrow's competition, you need a partner by your side for whom top quality, process optimization, and enhanced productivity are part of daily business. However, we define partnership not merely as being there for you but being with you. After all, joint activities form the core of commercial success.

Linde – ideas become solutions.

Linde GmbH

Gases Division, Dr.-Carl-von-Linde-Strasse 6-14, 82049 Pullach, Germany

Phone: +49 89 7446 0, info-additivemanufacturing@linde.com, www.linde-am.com