

Making our world more productive



Optimize Indoor Plant Production

Linde microbulk gas delivery systems help growers optimize plant growth, quality and yield.



Enhance Crop Production with Ease



Establishing a consistent, high-quality atmosphere can improve your growing operation, while reducing overall cost. Linde microbulk gas delivery systems help reduce inconsistencies in gas quality and supply.

Optimize Growing Conditions with a Liquid-based CO₂ Gas Supply

For indoor growing applications, increasing ambient carbon dioxide (CO₂) levels stimulates plant growth and improves the quality, size and yield of a crop, while reducing the time to market. Although the amount of carbon dioxide a plant requires varies from plant to plant, industry studies show that most plants benefit from any increase in CO₂ levels above the average ambient CO₂ level of 350 parts-per-million (ppm). Alternatively, an atmosphere with less than 200 ppm CO₂ will cause a significant reduction in plant growth. This can happen in greenhouses and grow rooms with low ventilation and no supplemental CO₂.

Supplementing directly with CO₂, rather than relying upon combustion exhaust, separates CO₂ control from humidity and heat control, allowing for better growing conditions. Using a Linde CO₂ gas supply effectively eliminates the introduction of ethylene and NOX (both harmful to plants) which are common in combustion-produced CO₂. Linde can recommend, design and/or install a reliable gas delivery system that helps ensure optimum CO₂ levels so that year-round growing conditions are optimal for productivity and plant health.

Linde CO₂ Dispersion Systems

Depending on the size of the growing operation, CO₂ is typically dispersed at 800-1600 ppm for 12-18 hour cycles, creating optimum growing conditions for the plants. A liquid-based CO₂ gas supply system is cost-effective to install. CO₂ is compactly stored as a liquid and is converted to a gas upon need. That gas is distributed either

through existing ventilation systems or through plastic ducts directly to the plants. Linde can provide a CO₂ dispersion system together with a liquid-based CO₂ gas supply, tailored and configured for your specific greenhouse needs.

Gas-Assisted Oil Extraction

Linde is your preferred, single-source provider for oil extraction process gases. As a global distributor of industrial and specialty gases, Linde provides butane for butane-dependent processes as well as expertise for designing and installing the required gas handling equipment your process requires.

If your oil extraction process is CO₂ dependent, your Linde microbulk gas delivery system can be configured to provide the required atmosphere for plant growth and power your oil extraction process – simplifying your operation.

CO₂ Microbulk Gas Supply System Advantages

- Consistent CO₂ levels for optimum plant growth
- Improved crop yield and quality
- Improved crop consistency from plant to plant and harvest to harvest
- Improved oil extraction yield

Improve Gas Handling and Supply

Linde Microbulk Delivery Systems

Linde bulk or microbulk on-site gas delivery systems offer a cost-effective and easy-to-use alternative to traditional cylinders and dewars. A microbulk system can be installed on site with piping that reliably brings gaseous CO₂ wherever you need it, throughout your facility. Our microbulk systems are remotely monitored and refilled automatically by Linde. This removes the need to monitor tank levels and place orders and reduces cylinder handling, enabling you to focus on growing your business.

Linde Grows with You

With a range of microbulk tank capacities available, from 2,126 pounds to 11,427 pounds, your microbulk gas supply system can grow as your operating needs grow and evolve. Linde provides ongoing support and can make recommendations, as well as design any system upgrades needed to protect your productivity and yield as you grow.

Linde CO₂ gas supply systems are available in a range of sizes from microbulk to bulk. Ask your Linde representative for assistance choosing the correct gas supply to meet your needs.

Benefits of a Microbulk CO₂ Gas Delivery System

- High-quality, on-site gas supply
- Reduces time spent on ordering and inventory management
- Helps reduce overall gas-use operating expenses
- Reduces downtime from cylinder change-outs and run-outs
- Reduces cylinder handling





Remote Monitoring Through Telemetry

To further streamline the management of your gas supply, each microbulk gas supply system employs a remote telemetry unit, designed to monitor and report liquid gas levels to Linde's customer service team. Linde telemetry units reduce the threat of run-outs and provide automatic ordering and just-in-time replenishment.

- Monitors and reports tank inventory level
- Schedules deliveries when needed
- Maintains history of tank level readings

Linde: Global Support from a Local Provider

At Linde, 26,000 employees in more than 50 countries are working together toward a common goal: making our world more productive. For more than 100 years, Linde has taken something as fundamental as air and turned it into ways to make plants operate cleaner and more productively, food taste better, breathing easier and manufacturing processes more efficient—in short, to make all our lives better.

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