

# Modified Atmosphere Packaging Reduce spoilage and extend shelf life



- Improve shelf life and reduce waste and returns
- Enhance food product appearance and preserve freshness
- Reduce the use of preservatives and other chemicals to promote better nutrition and healthier, more natural products
- Optimize cost, inventory levels and productivity using improved processes

## Reduce waste from our food chain

From the moment fresh hamburger patties are formed, pizza assembled or coffee ground, the race against time and loss of freshness begins. From that point on, natural deterioration and spoilage endanger the quality and shelf life of food products. How the product is handled in processing, during chilling or on the packaging line is vital to its shelf life and overall quality. Airgas, an Air Liquide company, provides the complete solution for costeffective Modified Atmosphere Packaging (MAP), from the right gases and delivery mode to process expertise and ongoing support.

For more than 40 years, we've worked with food manufacturers to bring out the very best in food. Whether it's meat, seafood, prepared meals, dry snacks or fruits and vegetables, Airgas has the expertise to create the right MAP solution for your operation.

## Reduce spoilage and extend shelf life

MAP gases help extend product shelf life by slowing down microbial, enzymatic and physical deterioration that would otherwise occur under air. Our food application experts work with you to select the right MAP gases matched with the right equipment in the optimal delivery mode. Additionally, we offer pre-mixed cylinders or on-site gas mixing systems to meet your specific needs.

Our food-grade gases conform to local food and beverage regulations as well as manufacturing standards used nationwide.

- All gas cylinders are dedicated to food service and prepared in production facilities adhering to Good Manufacturing Practice standards. Lot numbers are assigned to each cylinder and are traceable to its origin in the event of a recall
- Food-grade gas is tested to Food Chemicals Codex standards and follows Hazard Analysis and Critical Control Points principles to ensure its integrity throughout the supply chain—from production to delivery

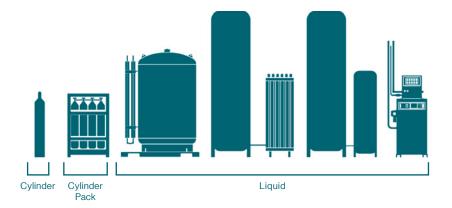
MAP Gases	Advantages	Applications
Argon	Non-reactive, used to displace oxygen and as a filler gas	Fresh fruits and vegetables
Carbon dioxide	Active gas, lowers pH and suppresses mold and bacteria growth	Cheese, meat, poultry, specialty meals, pizza and sandwiches
Carbon monoxide (three gas mix)	Active gas, provides desired myoglobin protein changes	Beef, pork, poultry and seafood
Nitrogen	Non-reactive, used to displace oxygen and as a filler gas	Dry snacks, coffee, nuts and entrees
Oxygen	Active gas, allows respiration, prevents anaerobic bacteria and provides desired myoglobin protein changes	Red meat, vegetables and fruit

### Consistent supply and reliability

With over 1,400 locations across the country and a variety of supply modes, we'll provide you with personalized, local service and dependable consistent access to the MAP gases you need, when you need them. Get peace of mind knowing that your production processes will run without interruption when you leverage our national footprint and distribution capabilities.

#### Process expertise and dedicated service

In addition to providing quality food-grade gases, Airgas works closely with you to design solutions tailored to address your unique production needs. You'll benefit from the support of our network of more than 50 food experts with experience in helping food manufacturers optimize costs and productivity by improving their overall process.



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