

Modified Atmosphere Packaging (MAP) Market Forecasts to 2034 – Global Analysis By Packaging Type (Horizontal Flow Wrap, Vertical Form Fill Seal (VFFS), Thermoforming Trays, Vacuum Skin Packaging (VSP), Bag-in-Box, and Other Packaging Types), Gas Type, Material Type, Application, End User and By Geography

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Abstracts

According to Statistics MRC, the Global Modified Atmosphere Packaging (MAP) Market is accounted for \$22.6 billion in 2026 and is expected to reach \$39.8 billion by 2034, growing at a CAGR of 7.4% during the forecast period. Modified Atmosphere Packaging (MAP) is a packaging technique in which the natural air inside a package is replaced with a controlled mixture of gases such as oxygen, carbon dioxide, and nitrogen to extend the shelf life of perishable products. This method slows down microbial growth and oxidation, helping maintain freshness, quality, and appearance. MAP is widely used in food packaging, especially for meat, seafood, dairy, and fresh produce, ensuring longer storage and improved product safety.

Market Dynamics:

Driver:

Growing demand for fresh, minimally processed foods with extended shelf life

MAP directly addresses this by slowing respiration rates in produce and inhibiting pathogen growth in proteins without altering taste or texture. Retailers benefit from reduced in-store spoilage, while households enjoy reduced food waste. The rise of

centralized food processing and distribution networks further amplifies the need for MAP, as products must travel longer distances while maintaining farm-fresh quality. Additionally, the expansion of organic food segments, where synthetic preservatives are restricted, makes MAP an indispensable solution. Technological advancements in gas mixing and sealing equipment continue to enhance the reliability and affordability of this preservation method.

Restraint:

High packaging material and gas flushing equipment costs

Implementing MAP requires specialized machinery capable of precise gas mixing, high-speed sealing, and leak detection, representing a significant capital investment for small and medium enterprises. Additionally, multilayer barrier films, essential for retaining the modified atmosphere, cost substantially more than conventional single-layer wraps. The ongoing expense of food-grade gases, particularly nitrogen and carbon dioxide, adds to operational budgets. Unlike vacuum packaging, MAP requires consistent gas-to-product volume ratios, increasing packaging material consumption per unit. These economic barriers limit adoption in price-sensitive markets and for low-margin products.

Opportunity:

Rising e-commerce and online grocery delivery fueling MAP adoption

MAP ensures that fresh meat, seafood, and produce reach consumers' doorsteps in optimal condition, reducing return rates and enhancing brand loyalty. E-commerce giants are actively seeking robust MAP solutions that withstand temperature fluctuations and handling stresses. Additionally, innovations in lightweight, recyclable MAP-compatible films align with sustainability goals of direct-to-consumer brands. Collaborations between packaging engineers and logistics providers are yielding smart MAP indicators that monitor gas composition in real time. This convergence of digital retail and advanced packaging presents substantial growth avenues for flexible MAP formats.

Threat:

Inconsistent gas retention and seal integrity leading to premature spoilage

Even microscopic pinholes or weak seal areas allow oxygen ingress and beneficial gas

escape, rapidly accelerating spoilage. Unlike vacuum packaging where collapse indicates failure, MAP packages may appear intact while gas composition has already compromised safety. Temperature abuse during transport further accelerates respiration rates, consuming modified atmospheres faster than anticipated. For fresh produce, incorrect gas ratios can cause anaerobic respiration, leading to off-flavors and texture breakdown. Manufacturers face significant liability risks from foodborne illnesses if MAP fails silently. Continuous investment in advanced leak detection systems, seal testing protocols, and robust film laminates is essential to mitigate this threat.

Covid-19 Impact:

The COVID-19 pandemic substantially reshaped the Modified Atmosphere Packaging Market, accelerating demand for extended-shelf-life fresh foods as consumers reduced shopping frequency and relied more on home delivery. Lockdowns disrupted cold chain logistics, making MAP's ability to preserve perishables at ambient temperatures during transit critically valuable. Retailers prioritized MAP-packaged meats, fruits, and vegetables to minimize in-store handling and reduce spoilage from irregular restocking cycles. However, initial pandemic phases saw raw material shortages for barrier films and disruptions in gas supply chains. Post-pandemic, heightened awareness of food hygiene, reduced food waste, and the permanent shift toward online grocery have solidified MAP adoption. Food processors are now investing in automated MAP lines to meet sustained demand for high-quality, longer-lasting fresh products.

The vertical form fill seal (VFFS) segment is expected to be the largest during the forecast period

The vertical form fill seal (VFFS) segment is expected to hold the largest market share due to its high-speed operation, material efficiency, and suitability for a wide range of product sizes. VFFS systems form bags from a flat roll of film, fill them with product, and seal them vertically, all in a continuous process. This design minimizes floor space requirements and reduces material waste. MAP capability integrated into VFFS allows gas flushing before sealing, making it ideal for snacks, shredded cheese, coffee, and dried fruits. Its versatility across solid and granular foods drives widespread adoption.

The thermoforming trays segment is expected to have the highest CAGR during the forecast period

Over the forecast period, thermoforming trays segment is predicted to witness the highest growth rate, fueled by rising demand for premium ready-to-eat meals and fresh

meat presentations. Thermoforming creates rigid, custom-shaped trays that protect delicate items like fish fillets and berries while allowing high-barrier film lidding. MAP integration within thermoforming lines enables precise gas flushing for each cavity. The growing preference for portion-controlled, visually appealing packaging in retail supermarkets boosts this segment. Innovations in recyclable mono-material thermoforming films further accelerate adoption as brands pursue sustainability without compromising MAP performance.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share, due to strong consumer demand for premium fresh foods, organic produce, and convenience meal solutions. The United States leads with widespread adoption of MAP in centralized meat packing, fresh-cut vegetable facilities, and meal kit fulfillment centers. Canada shows rapid growth in seafood MAP for export markets. High e-commerce grocery penetration post-pandemic drives innovation in delivery-friendly MAP formats.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR, due to rapid urbanization, expanding middle-class populations, and rising retail infrastructure across China, India, Japan, and Southeast Asia. Increasing per capita consumption of fresh meat, seafood, and packaged produce drives MAP adoption. Growing supermarket chains and online grocery platforms require extended shelf-life solutions to serve dense urban centers. Additionally, government investments in cold chain modernization and food safety regulations support market expansion.

Key players in the market

Some of the key players in Modified Atmosphere Packaging (MAP) Market include Amcor plc, Sealed Air Corporation, Berry Global Inc., Linpac Packaging Limited, MULTIVAC Group, ULMA Packaging, CVP Systems, Inc., ILAPAK International, Dansensor, Praxair, Air Liquide S.A., Coveris Holdings S.A., Pro-Pac Packaging Limited, Winpak Ltd., and Mondi Group.

Key Developments:

In April 2026, Sealed Air Corporation announced the completion of its previously

announced acquisition by funds affiliated with CD&R. Sealed Air will remain headquartered in Charlotte, North Carolina, and will continue to operate under the Sealed Air name. CD&R is committed to supporting Sealed Air's growth across its Food and Protective businesses, building on the Company's legacy of delivering high-performance materials, automated packaging equipment and world-class service.

In April 2026, Amcor has unveiled a new closure targeting applications such as mayonnaise, ketchup and sweet sauces. The 55 mm Flava Flip Top Closure 38/400 is a lightweighted upgrade compared to previous versions. The new generation of the 38/400 neck finish range is designed for circularity to help brand owners meet and exceed their sustainability goals.

Packaging Types Covered:

Horizontal Flow Wrap

Vertical Form Fill Seal (VFFS)

Thermoforming Trays

Vacuum Skin Packaging (VSP)

Bag-in-Box

Other Packaging TypeS

Gas Types Covered:

Nitrogen (N?)

Carbon Dioxide (CO?)

Oxygen (O?)

Gas Mixtures

Material Types Covered:

Polyethylene (PE)

Polypropylene (PP)

Polyamide (PA)

Ethylene Vinyl Alcohol

Polyethylene Terephthalate

Other Material Type

Applications Covered:

Fresh Meat & Seafood

Fruits & Vegetables

Dairy & Poultry Products

Bakery & Confectionery

Ready-to-Eat (RTE) Meals

Beverages

Other Applications

End Users Covered:

Food & Beverage Industry

Retail & Supermarkets

Food Service Providers

E-commerce & Online Grocery

Other End Users

Regions Covered:

North America

US

Canada

Mexico

Europe

Germany

UK

Italy

France

Spain

Rest of Europe

Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

What our report offers:

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments

- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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