

# Food Grade Gas Market - Forecasts from 2020 to 2025

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## Abstracts

The food grade gas market is projected to grow at a CAGR of 4.13% to reach US\$9.948 billion by 2025 from US\$7.803 billion in 2019. Food grade gases have an important role in the food and beverage industry and have an important place in the agrogood value chain. In food processing, gases such as nitrogen and carbon dioxide are used toward preservation, ripening, spoilage prevention, freezing, chilling, carbonation, and many more applications in a large number of foodstuffs such as bakery and dairy items, beverages, fish and seafood, fruits, vegetables, meats, poultry, prepared meals, and more. In particular, refrigeration processes such as chilling, freezing, subcooling, hardening, or cryogrinding use cryogenic industrial gases such as liquid nitrogen.

Gases are also a key component of the preservation of minimally processed foods such as fish, meats, fruits, and vegetables. One food processing application that uses industrial gases is modified atmosphere packaging (MAP), a process where a pure gas such as nitrogen or a gas mixture is placed as the breathable atmosphere in a package to slow down microbial growth or spoilage such as discoloration, oxidation, or moisture loss. Gases also provide inert environments, or together with hermetic sealing can serve as evidence markers. As a consequence of the growing demand for convenience food and beverage; the demand for exotic produce, among others the food-grade gas market is poised to witness an exponential growth during the forecast. The baby boomers, Gen Xs, Gen Ys as well as Gen Zs consumption tendencies towards food and beverages, albeit varied was marked by the curiosity of sampling exotic cuisines, trying fusion cookery and so on. A mix of traditionalist and experimentalist consumers across all age group frequented pubs, local eateries, bars, fine dining establishments along with other types of food and beverage establishments.

Furthermore, as lives have become even more fast-paced due to technological advancements and the changing nature of deliverables and rotational working hours there has been a surge in the need for meal-on-the-go, meal kits. Moreover, the pure-

play online digitally delivery food and beverage servers are increasingly offering an all-inclusive meal option among the myriad of a la carte serving over their digital menus which the consumers who are namely digital adopters keen on due to the convenience associated with such options. Moreover, another pool of consumers who are essentially called multichannel adapters have their consumption behavior over a variety of food and beverage establishments, for example, convenience store like the traditional shoppers, however, their rationale is that of speed and convenience, hence they will also prefer fast food establishments too. They are also keen on frequenting fine dining options to acquaint themselves with a celebrated preparation that may have received a lot of media attention recently. Further, they will also turn to digital delivery options if they are highly recommended by their acquaintances. Thus, the food and beverage expenditure that is consequent of the habits and inclination has surged. In addition to the above is the impact of emerging economies and their shift in consumption patterns, rise in disposable income as an increasing number of homemakers are supplementing their household income by joining the job markets. This has led to a steep rise in demand for frozen food products as well as carbonated beverages. Further, the increasing need for using cold storage technologies has the potential for giving rise to energy supply issues thus food-grade gases for chilling and freezing applications are being increasingly preferred as means to offset the potential energy issues. This aspect is also in light of more natural, fresh, and minimally processed foods with fewer artificial additives, including preservatives. Such consumer demand for high nutritional quality is a strong long-term trend.

The other aspect that is expected to augment the growing food-grade gas market trend is that of government regulations. To put things perspective the following legislations fall within the ambit of the same with regards to Europe: Directive EC/2008/84 covering specific purity criteria of food additives; regulation EC/178/2002—Food law covering hygiene and food safety requirements, including use of hazard analysis and critical control points (HACCP), labeling, lot marking, and traceability; regulation EC/852/2004 covering hygiene of foodstuffs; EC/1333/2008—Food additives and labeling; regulation EC/1935/2004 covering food contact materials compliance; regulations EC/2073/2005+1441/2007 covering microbiological criteria on foods; regulation EC/1107/2009 regarding plant protection products and Directive EC/528/2012 regarding biocides. Thus, along with consumer demand, regulatory compliance also makes it a mandatory aspect for the food processor to use the food-grade gases to ensure the safety of the consumers. Further food-grade gas is extremely important to keep the supply chain live. For example, the increasing heat as a result of climate change and the world cup during in 2018 led to a sudden surge in demand of beers in pubs and

other off liquor shops. This added to the rising demand for food-grade carbon dioxide in the European market whose supply was already under a lot of stress due to a sudden growth in the craft brewery. At this front, it might be noted that big end-user forms like AB InBev, who has their internal source of CO<sub>2</sub> can withstand the shortage but others may not have such option sat their disposal. Thus, the readiness of the supply side that mainly comprises of certain key suppliers is also an important aspect. Such lapses act as a restraining factor of food-grade gas market growth during the forecast period. Nevertheless, apart from breweries, another section is that of wines that will be given a major push to the already expanding food-grade gas market during the forecast period. This again attributed to the rising disposable income around the world as well as urbanization. Furthermore, there appears to be a culture of pursuing premiumization of beverages which are also giving rise to boutique wineries thus leading to the demand for food-grade gas.

## Segmentation

### By Type

Carbon Dioxide

Nitrogen

Oxygen

Others

### By Solution

Carbonation

Freezing & chilling

Packaging

Others

### By End-Use Products

Bakery & confectionery products

Beverages

Convenience food products

Dairy & frozen products

Fruits & vegetables

Meat, poultry, and seafood products

Others

By Geography

North America

USA

Canada

Mexico

South America

Brazil

Argentina

Others

Europe

UK

Germany

France

Others

The Middle East and Africa

Saudi Arabia

UAE

Israel

Others

Asia Pacific

Japan

China

India

Others

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