جالف كرايو
Gulf Cryo

Healthier, Safer and Better

GULF CRYO FOOD AND BEVERAGE BROCHURE

FOOD GRADE GASES

Healthier, Safer, Better

Gulf Cryo brings over 68 years of experience in the food and beverage industry providing food grade gases across a range of supply options: compressed cylinders, bulk and on-site generation to help customers optimize their production and freezing processes, reduce costs, and improve food quality and efficiency.

TABLE OF **CONTENT**

Overview

In today's global market place, customers expect to receive maximum quality at minimum cost.

The food industry is no exception with demand for all types of produce to be supplied to every inhabited place on the globe. Regardless of season and location, everything from fruits to bread, meat, fish and vegetables are expected to be available all year round and in "just produced" condition at competitive, affordable prices. Convenience and quick preparation of meals is also a high priority for the fast paced 21st century lifestyle. Attractively presented fresh or prepared foods and combination meals, in durable hygienic packages that offer useful shelf life under normal refrigeration, have become very popular. Faced with these consumer preferences and growing demand for an ever-wider range of food products, retailers recognise the need for improvements in packaging technology. They need to address the spoilage problem and provide a huge diversity of new prepared food.

Health concerns continue to drive the insistence on reducing salt, chemicals and preservatives which also places additional pressure on suppliers and manufacturers. They are expected to provide food products that look and taste like they were freshly made or just picked, despite possibly having travelled halfway around the world.

Operating in such a competitive environment, Gulf Cryo applies a decade of experience in providing a complete spectrum of solutions that serve the food and beverage industry all the way from 'farm to fork', whilst ensuring the product is of prime appearance and taste.

Our food grade gases conform with government regulations and with the highest standards for food quality, safety, and hygiene and our management systems are certified to the requirements of FSSC 22000 (Food Safety System Certification).

FSSC 22000

FOOD GRADE GASES

Carbon Dioxide

CO_2

Carbon dioxide can be used as a cryogenic agent to control the temperature of the food product in a range of applications such as cooling, chilling and freezing. It is odourless and protects the taste and texture of your food products. Carbon dioxide also reduces the need for chemical food preservatives in packaged products. For carbonated beverages, it is utilized as an ingredient that creates what we know as a 'sparkling' effect.

Nitrogen

N_2

Nitrogen plays a key role in food preparation to preserve freshness, slow food deterioration and prolong shelf-life. The use of Nitrogen in beverage preparation has gained widespread popularity due to its effect on flavor and texture. It can be integrated into brewing processes for coffee and other beverages. Cold-brewed coffee that is infused with food-grade Nitrogen alters the taste and texture of the final brew to something unique.

Oxygen

O_2

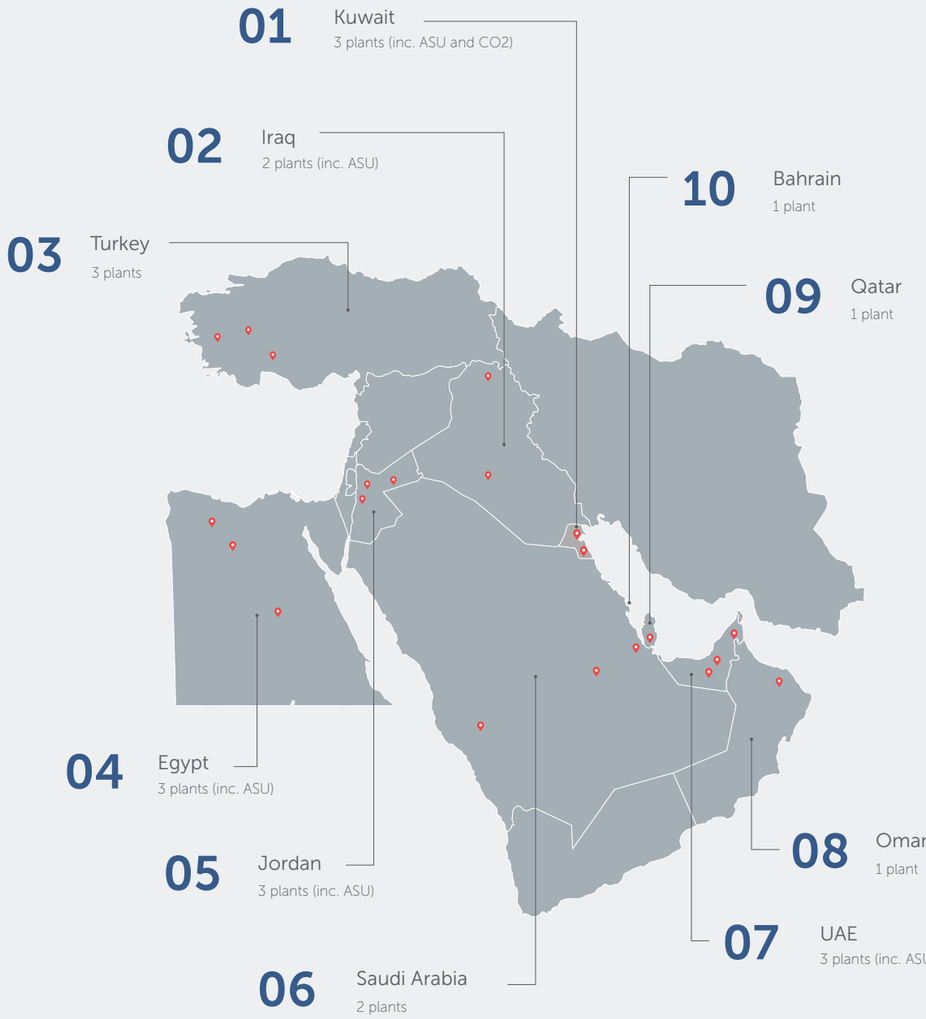
Oxygen food grade gas is widely used in speeding up fermentation of food. Oxygen is also key to the development of a sustainable aquaculture. We ensure a sufficient level of dissolved oxygen that is required for high production levels and fish health.

Dry Ice

SOLID CO_2

Dry Ice or solid carbon dioxide is an optimal solution to a variety of industires, and it is mainly used to transport food products within the cold chain while preserving the quality and safety of the product whether it is a gourmet ice cream, a prepared meal or even vaccines.

Regional Supply Chain



Our 438 **Rolling Assets**

65 TRACTOR HEADS

21 TUBE TRAILERS

130 CYLINDER TRUCKS

28 ISO TANKS

190 ROAD TANKERS

Applications

MODIFIED ATMOSPHERE PACKAGING (MAP)

To meet the increased market demand for prolonged product shelf-life preserving the food quality and freshness, Gulf Cryo provides packaging solutions that address this requirement without adding chemical food preservatives, and tackle food waste early in the production process. Modified Atmosphere Packaging (MAP) is a process used in product packaging to replace the air inside the package with a gas or gas mixtures such as Nitrogen (N_2) and Carbon Dioxide (CO_2). Gulf Cryo supplies these food grade gases in cylinders or for higher volume requirements, the gases can be supplied as liquid form in insulated cryogenic tanks.

Carbon Dioxide | Nitrogen | Oxygen

BENEFITS:

- Extend product shelf-life without chemical food preservatives
- Improve shelf-life in the distribution chain and reduce spoilage
- Retain taste, texture and apperance of the food product

SUPPLY MODE:

Gulf Cryo supplies CO_2, N_2 and O_2 either pre-mixed or as individual gases in cylinders.
For higher volume requirements, these gases are supplied as liquids in insulated cryogenic tanks.

Applications

FOOD CHILLING AND FREEZING

For the preservation of chilled and frozen food items such as meat, fish, vegetables, ice cream and bakery food, Gulf Cryo offers gas solutions through Liquid Nitrogen (LIN) and Carbon Dioxide (CO_2) that come with cryogenic properties bringing several chilling and freezing advantages: quicker freeze rate and improved efficiency over mechanical freezers, reduced product dehydration and reduced bacterial activity. Cryogenic chilling and freezing also preserves the natural food quality by retaining flavour and taste, and locking-in freshness which are considered are essential to the F&B supply chain business.

Carbon Dioxide | Nitrogen

BENEFITS:

- Quicker freeze rate and improved efficiency over mechanical freezers
- Reduced product dehydration and reduced bacterial activity
- Retain flavour and taste, and lock-in freshness

SUPPLY MODE:

Gulf Cryo supplies Liquid CO_2 and Liquid N_2 in insulated cryogenic tanks.

Please refer to page 14 for chilling and freezing equipment

Applications

COLD TRANSPORTATION

Gulf Cryo applies a decade of experience in providing solutions for transporting food products within the cold chain while preserving the quality and safety of the product whether it's gourmet ice creams, prepared meals or even vaccines. Gulf Cryo offers a distinctive Dry Ice (solid CO_2) gas as an optimal solution to many industries such as food & beverage, healthcare and airlines where the most challenging transportation requirements occur.

Solid Carbon Dioxide | Dry Ice

BENEFITS:

- Unrivalled cooling mode to rapidly chill transit shipments
- Products are protected from deteriorating effects of air
- Extended product shelf-life during logistics and transportation

SUPPLY MODE:

Gulf Cryo supplies Solid CO_2/Dry Ice in insulated pallets.

Please refer to page 14 for chilling and freezing equipment

Applications

CARBONATION IN BEVERAGES

Another big gas-consuming application for the food and beverage industry entails in deploying Gulf Cryo food-grade carbon dioxide (CO_2) and nitrogen (N_2) gases into the beverages to create what we now as a 'sparkling' effect. The right blend of CO_2 and N_2 ensures a perfect carbonation and delivers great taste with zero waste. The constant attention to the requirements of the beverage industry, and the ground-breaking experience of Gulf Cryo in the production and distribution of beverage quality CO_2 and N_2, underpins the development of Gulf Cryo's excellence in the service we provide to our customers.

Carbon Dioxide | Nitrogen

BENEFITS:

- Produce a 'bubbly' beverage and prevent spoilage or deterioration
- Improve and diversify existing beverage options across a wide variety of products
- Elevate the aroma and produce an appealing mouthfeel often described as 'tingling'

SUPPLY MODE:

Gulf Cryo supplies CO_2, and N_2 either pre-mixed or as individual gases in cylinders.
For higher volume requirements, these gases are supplied as liquids in insulated cryogenic tanks or as a gas in high-pressure tube trailers.

Applications

INERTING AND BLANKETING

The inert properties of nitrogen (N_2) food grade gases offer an array of solutions such as blanketing and inerting, and have several advantages on food products. Nitrogen is used to prevent oxidation and replace oxygen from food packaging which usually leads to product deterioration and color degradation. A protective layer of N_2 can also be injected into the can or bottle to flush out unwanted dissolved oxygen from the headspace prior to the capping process which improves the shelf life and taste of the product. Nitrogen can be injected in two methods: either in a form of gaseous nitrogen or as liquid nitrogen droplets to help reduce the oxygen in the liquid.

Nitrogen

BENEFITS:

- Displace moisture and oxygen to prevent product deterioration and extend shelf-life
- Prevent flavor and color degradation of the food products
- Remove unwanted gases or impurities

SUPPLY MODE:

Gulf Cryo supplies N_2 as an individual gas in cylinders.
For higher volume requirements, nitrogen is supplied as liquid in insulated tanks.

Applications

OXYGENATION IN AQUACULTURE

Oxygenation solutions are key to the development of a sustainable aquaculture.
Fish farms cultivate fresh water in controlled environments therefore, maintaining a sufficient level of dissolved oxygen at all times is of a great importance as it ensures: appropriate nutrition, prevention of diseases, operational reliability and good oxygen utilization which helps in optimum growth conditions of the fish and increased fish production stability.

Oxygen

BENEFITS:

- Enhanced productivity and profitability for aquaculture fish farms
- Optimised fish growth and prevention of diseases that affect the well-being of the fish

SUPPLY MODE:

Gulf Cryo supplies O_2 food grade gas in cylinders. For higher volume requirements, O_2 is supplied as liquid in insulated tanks.

Applications

CARBON DIOXIDE IN AGRICULTURE

Plants in greenhouses consume carbon dioxide (CO_2) for photosynthesis - a process of transforming light into food. Providing greenhouses with food-grade CO_2 gas helps maintain a concentration higher than average to help stimulate the photosynthesis process. This solution helps elevate the CO2 levels in a controlled and monitored atmosphere to ensure an optimal plant growth and improved yield.

Carbon Dioxide

SUPPLY MODE:

Gulf Cryo supplies CO_2 in cylinders for small volumes and in insulated tanks for bulk delivery.

BENEFITS:

- Increase plant photosynthetic efficiency
- Promote a faster crop maturity and harvest cycles
- Application process of CO_2 is very simple

Gulf Cryo is committed to provide food grade gases with an unrivalled technical innovation offered through a reliable and consistent supply of high-purity oxygen, nitrogen, carbon dioxide and other gases for the food & beverage industry.

Gulf Cryo LLC
Corporate Office
Dubai Investment Park 1, Dubai, UAE
P.O. Box :473531, Dubai, UAE
T +971 4 809 0000
www.gulfcryo.com

CONTACT US

جالف كرايو

Gulf Cryo

www.gulfcryo.com

BAHRAIN – EGYPT – JORDAN – KSA – KUWAIT – OMAN – QATAR – TURKEY - UAE