

# Freezing & Chilling

## We deliver:

- A competitive freezing or chilling cost
- Process optimization
- A customized monitoring program



## Your Market

With globalization and changing consumer habits, many food processors continue to be focused on innovation and on keeping their costs under tight control in order to minimize the impact of higher prices, for raw materials, fuel and consumables, on their profit margins.

Processes involving cryogenic refrigeration continue to play a vital role in food manufacturing since cryogenics can deliver outstanding results for addressing many food safety and spoilage concerns for various types of food products. Cryogenics is also well-known for improving product quality, productivity throughputs and process flexibility while delivering a competitive freezing or chilling cost.

Properly managing and optimizing your cryogenic process can be a challenging task, however the **Nexelia™ for Freezing & Chilling** offer can provide you with a simple solution for cost control and a new level of operational performance.

## Your Solution

**Nexelia™ for Freezing & Chilling** is an all-in-one gas solution that combines the best of Air Liquide's ALIGAL™ gases, application equipment and technical support service along with a customized Performance Service program for the optimization of your cryogenic process. This offer has been designed for those processors that need to achieve a competitive freezing or chilling cost for their food products. With Nexelia™, we define the results together and then commit to delivering on our performance.

## Our Commitment

- **Improved management of your freezing & chilling costs**

Air Liquide will ensure the regular management of your freezing and chilling costs through the new Performance Service program. We will provide you with a benchmark gas consumption value and then assist you with the on-going monitoring and optimization of your gas consumption.

- **Regular feedback & support service**

Start-up assistance and customized operational training with productivity, process improvement, safety and cleaning guidelines will be provided by our technical experts. Regular feedback will be provided to your plant operators and maintenance personnel based on the results of our Process and Gas Installation & Application auditing programs. Furthermore, Air Liquide will also commit to a yearly review in order to discuss your progress in the Performance Monitoring Service program and to ensure that your cryogen consumption goals are being met.

- **Continuous improvement initiatives**

Our enhanced auditing programs will provide real-time feedback to your plant operators and maintenance personnel in order to recommend opportunities for process optimization, cost reduction, and continuous improvement specifically with your cryogenic system in mind.

# Our Offer

Nexelica™ for Freezing & Chilling consists of:

- **ALIGAL™ 1 (Liquid Nitrogen) or ALIGAL™ 2 (Liquid Carbon Dioxide) supply:**

ALIGAL™ is an Air Liquide brand name for those gases that are compliant with local food grade specifications, regulations, and industry standards, including ISO 22000 certification for production, storage and distribution.

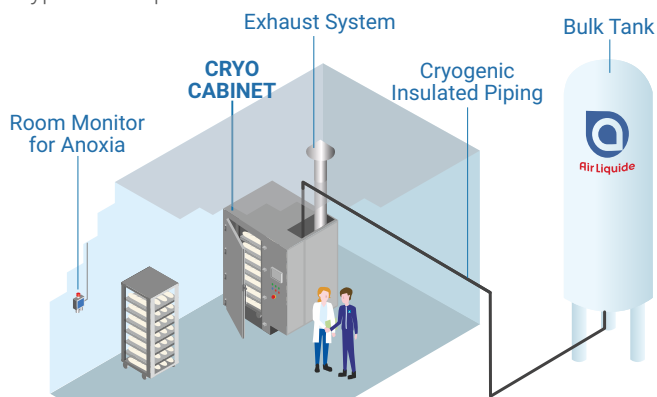
- **Process Expertise & Service:**

Air Liquide will provide you with the full support of our food application and technical experts from the design to the installation and start-up of the solution to the on-going optimization of your process through the Performance Service program.

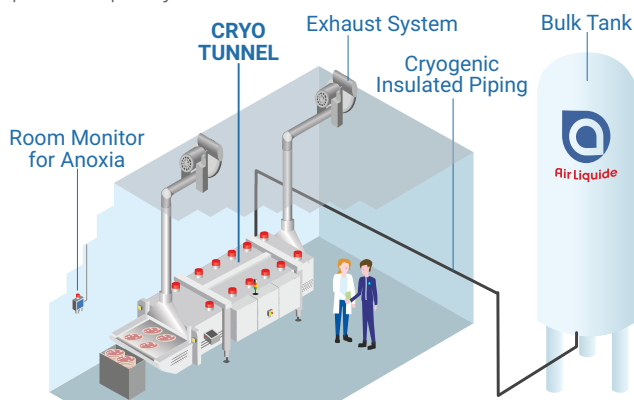
- **State-of-the-Art Application Equipment:**

Air Liquide offers a wide variety of cryogenic application equipment to meet your freezing and chilling needs:

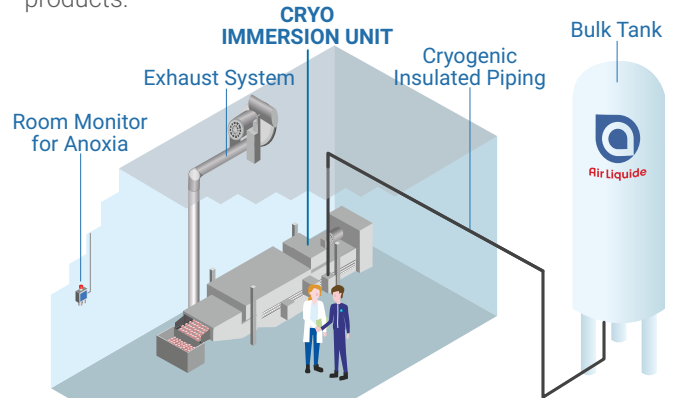
- The **CRYO CABINET** for any batch process that needs the versatility to efficiently chill, freeze or crust-freeze nearly any type of food product.



- The **CRYO TUNNEL** range for any in-line process that needs the versatility to chill, freeze or crust-freeze/harden different types of food products while ensuring exceptional product quality.



- The **CRYO IMMERSION UNIT** range for any IQF process that needs the versatility to Individually Quick Freeze or crust-freeze small, diced, sticky, liquid or semi-liquid food products.



Our range of application equipment is ideal for those processors that need increased productivity, excellent cryogen efficiency, improved sanitary design, ease of operation & maintenance with a minimal capital investment and installation cost.

## Case Study

### IQF Cooked, Sliced Poultry Products

Optimize the IQF process to achieve a CO<sub>2</sub> consumption objective of 1 kg/kg for a new CRYO TUNNEL-ZR2 installation for cooked, sliced poultry products.

Performance Service	Issues	Optimization
Recipe Set-up	Operators were manually changing the freezer parameters without any documentation	Setting up recipes for each product for operational consistency with documentation
Training	Minimal Safety & Operator Training without any documentation	Customized Safety & Operational Training of operators and maintenance personnel with documentation
Process Audit	No benchmarking or documentation of operating parameters	Provided recommendations & documentation based on the process audit regarding deviations from the original parameters
Gas Installation & Application Audit	Customer acceptance of the equipment & the installation was not documented	Documented installation set-up and provided recommendations for optimization of the equipment and the exhaust system set-up
Follow-up Review	No regular reviews on the performance of the process equipment	Regular reviews of the consumption objective, audits, operational issues, recipe set-ups, training programs, documentation and determining next action items

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A world leader in gases, technologies and services for Industry and Health, Air Liquide is present in 75 countries with approximately 66,400 employees and serves more than 3.8 million customers and patients.