







# Freshline® Food Processing Technologies for Fish and Seafood

An efficient way to freeze or chill a broad range of products while enhancing product quality



Fish and seafood have become increasingly popular consumer choices for a healthy and varied diet. Fish and shellfish are benefiting from a positive consumer image, and much of the future success of this sector will lie in value-added products such as prepared fillets, seasoned or coated products and ready meals. The challenge for food processors is to ensure that these delicate products maintain their taste and quality right through to the moment they are eaten.

### **Solutions overview**

## If you:

- Cool or freeze your products continuously or in batches
- Produce value-added products or ready meals
- Produce IQF products
- Need to package your fresh seafood to increase shelf life and distribution radius

#### Our solutions include:

- Continuous and batch cryogenic freezing technologies
- A range of equipment that preserves appearance and texture of products for high quality once defrosted
- Efficient IQF solutions to help products retain their shape and prevent product folding or belt marks
- Expertise in modified atmosphere packaging

Air Products' Freshline solutions for food processing provide innovative freezing and preservation systems to the seafood industry that help increase production rates and capacities, improve yields and product quality, and lower costs.

# Why use Liquid Nitrogen (LIN) instead of ammonia or Freon?

LIN is one of the coldest refrigerants on earth – freezing in seconds rather than hours

Ultra low LIN temperature equals smaller equipment footprint

Enhanced product quality from faster freezing, which results in smaller ice crystals

Increased production yields - less dehydration during freezing and lower drip loss after thawing

Lower capital costs



We can test your product in our Asia Food Technology Center in China

# Wide range of solutions

Air Products supplies a full line of Freshline liquid nitrogen freezing systems that can be tailored to meet your specific needs. Our range of equipment can freeze a wide variety of seafood, including raw, cooked, marinated and breaded products. All of our freezing systems use our high-purity liquid nitrogen, which provides the most efficient means of freezing and cooling available.

**Freshline MP-DM tunnel freezer** Further enhance the significant benefits of the Freshline MP freezer with the "DM" system to increase the flexibility of this versatile freezer. Provides high capacity, efficient operation for both IQF and non-IQF products in the same freezer with the same in-line production layout.



**Freshline IQF+ freezer** Developed to eliminate product clumping by means of multi-step conveyor belts. The product is crust frozen and separated into individual pieces as it passes the LIN injection system, before passing into the straight belt tunnel to complete the freezing process.



**Freshline EAF tunnel freezer** An affordable, reliable and efficient LIN tunnel freezer designed to provide a simple, efficient and cost-effective food freezing and chilling solution. Ideal for both IQF and non-IQF freezing.



**Freshline batch freezer** Uses LIN refrigeration for fast, economical chilling and freezing. It is ideal for food processors with batch or low-volume freezing and/or chilling requirements. Low capital and entry costs make it appealing to new businesses and those developing new products.



**Freshline tumbler freezer** IQF products such as shrimp can be coated with your sauces or herbs, producing portionable, ready-to-heat products.



**Freshline modified atmosphere packaging (MAP)** Fish is perishable because of its natural properties such as high Water Activity (Aw), neutral pH value and the presence of autolytic enzymes. MAP can help slow down the growth rate of spoilage bacteria, while low temperature helps slow down bacteria growth and enzyme activity.



# Air Products Asia Food Technology Center

Our Asia Food Technology Center (AFTC) is strategically located in Shanghai, China, one of the world's most populated countries and a leading food processing market. This facility serves as a Center of Excellence to help Asia customers develop and enhance their food process with advanced technologies and equipment. It showcases a broad selection of our Freshline cryogenic and noncryogenic solutions. Air Products has basic testing and trial capability in most Asia locations. Please contact us as follows to arrange trial support.

# Ask Air Products . . . and expect more

Whether your freezing, chilling, cooling or packaging applications include fish, seafood, bakery goods, fruit and vegetables, poultry, meats, ready meals or anything in between, Air Products' Freshline solutions offer you the high-purity gases and equipment, the international supply capability, and — most important the unmatched industry experience and technical support to help you succeed just about anywhere in the world. We can help you improve your productivity, lower your costs, maximize your returns, and, as a result, help make you more competitive in a very competitive market.







# tell me more

#### For more information, please contact us at:

#### China

Floor 2
Building #88, Lane 887
Zu Chongzhi Road
Zhangjiang Hi-Tech Park
Shanghai, 201203
P.R. China
T +86 21 3896 2000
F +86 21 5080 5585
Hotline 400-888-7662 (China only)
infochn@airproducts.com

#### **Asia Food Technology Center**

Floor 1 Building #87, Lane 887 Zu Chongzhi Road Zhangjiang Hi-Tech Park Shanghai, 201203 P.R. China

#### Singapore

2 International Business Park #03-20 The Strategy Singapore 609930 T +65 6494 2240 (General enquiries) +65 6494 2173 / +65 6494 2296 (Sales enquiries) mysgmkt@airproducts.com

#### Malaysia

Lot 5<sup>A</sup>, Jalan Sungai Besar 26/7 Seksyen 26 (HICOM Sector B) 40000 Shah Alam Selangor, Malaysia T +603 2742 8118 (General enquiries) +603 5101 8785 / +603 5101 8624 (Sales enquiries) mymktg@airproducts.com

#### Indonesia

Kawasan Industri Cikarang Blok F1-3 Cikarang, Bekasi Jawa Barat 17530 Indonesia T+62 21 2863 8600 (Permintaan Umum) +62 81 3145 83313 / +62 21 2863 8631 (Permintaan Sales) idmktg@airproducts.com

#### **South Korea**

3, 46 Beon-Gil, Nongseo-Ro, Giheung-Gu, Yongin-Si, Gyeonggi-Do 446-920 South Korea T +82 31 8005 0261 F +82 31 287 0256

#### Taiwan

5F, 21 Chung Shan N. Rd. Sec. 2, Taipei 104, Taiwan, R.O.C. T+886 2 2521 4161 F+886 2 2581 8359

