



**NIPPON  
GASES**  
The Gas Professionals

## CryoSan<sup>®</sup>

Cryogenic solutions for fast  
and effective freezing





## **More than just a gas supplier, Nippon Gases is your strategic partner.**

At the heart of food production processes, gases play a vital role, whether controlling temperatures or modifying production environments. Our expertise goes beyond conventional expectations, providing solutions that keep products frozen, chilled, crisp, fresh, and even sparkling.

Through continuous innovation, we refine our systems to increase the efficiency of production processes and set industry standards.

Backed by expert support, scientific advice, and years of collaboration with industry leaders, Nippon Gases provides tailor-made solutions. From large-scale industries to small laboratories, our comprehensive offering includes gases, consultancy, materials, equipment, and installations. We prioritise efficiency, providing independent treatments to enhance production, while maintaining our commitment to sustainability in everything we do.

# CryoSan®

## The perfect blend of technology, quality and innovation

In the world of food preservation, freezing is a pillar of reliability and efficiency. At Nippon Gases, we are taking this a step further with our state-of-the-art cryogenic deep-freezing technology. Using the extreme cold of liquid nitrogen (-196 °C) and carbon dioxide (-78 °C), our processes ensure the rapid cooling of a wide range of food products, from ready meals and fish to dairy products, ice cream, fruit, meat and sausages.

Cryogenic freezing forms very small ice crystals which preserve the cellular structure of the product. This difference is key to maintaining the integrity and texture.

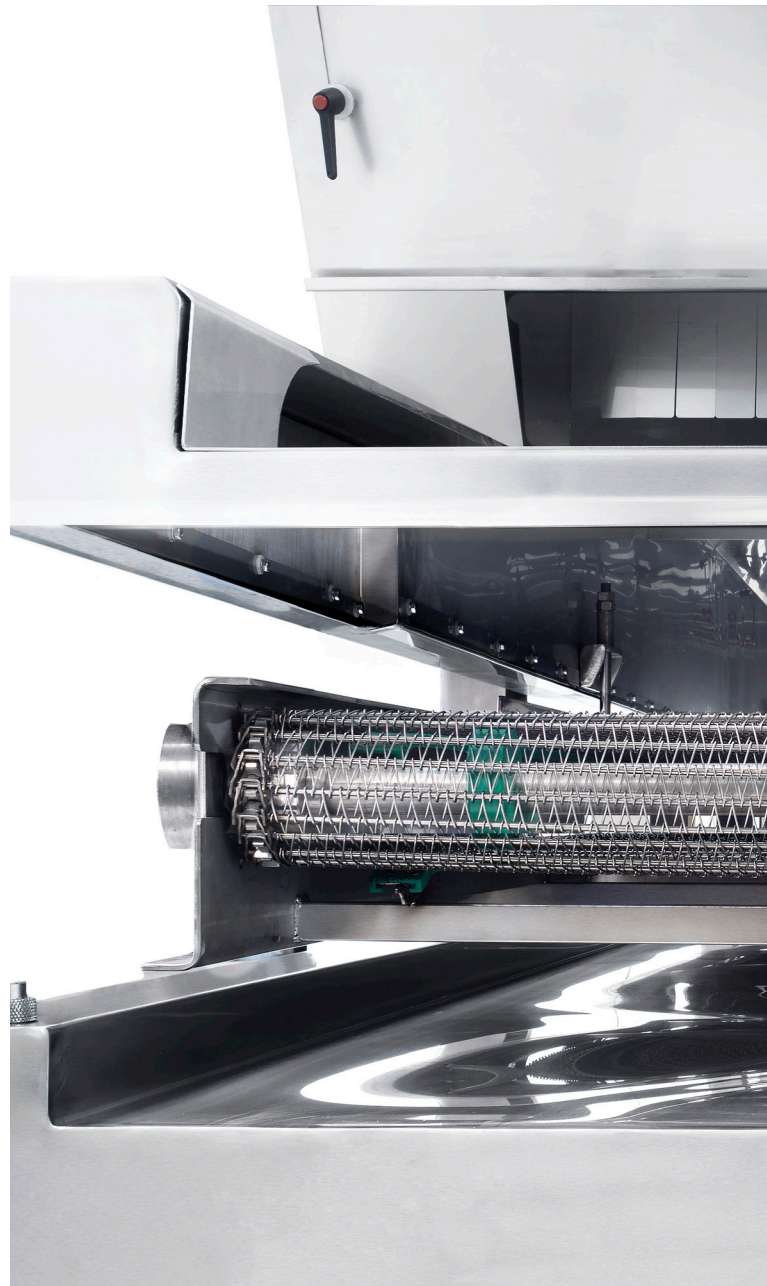
### Why choose cryogenic deep freezing?

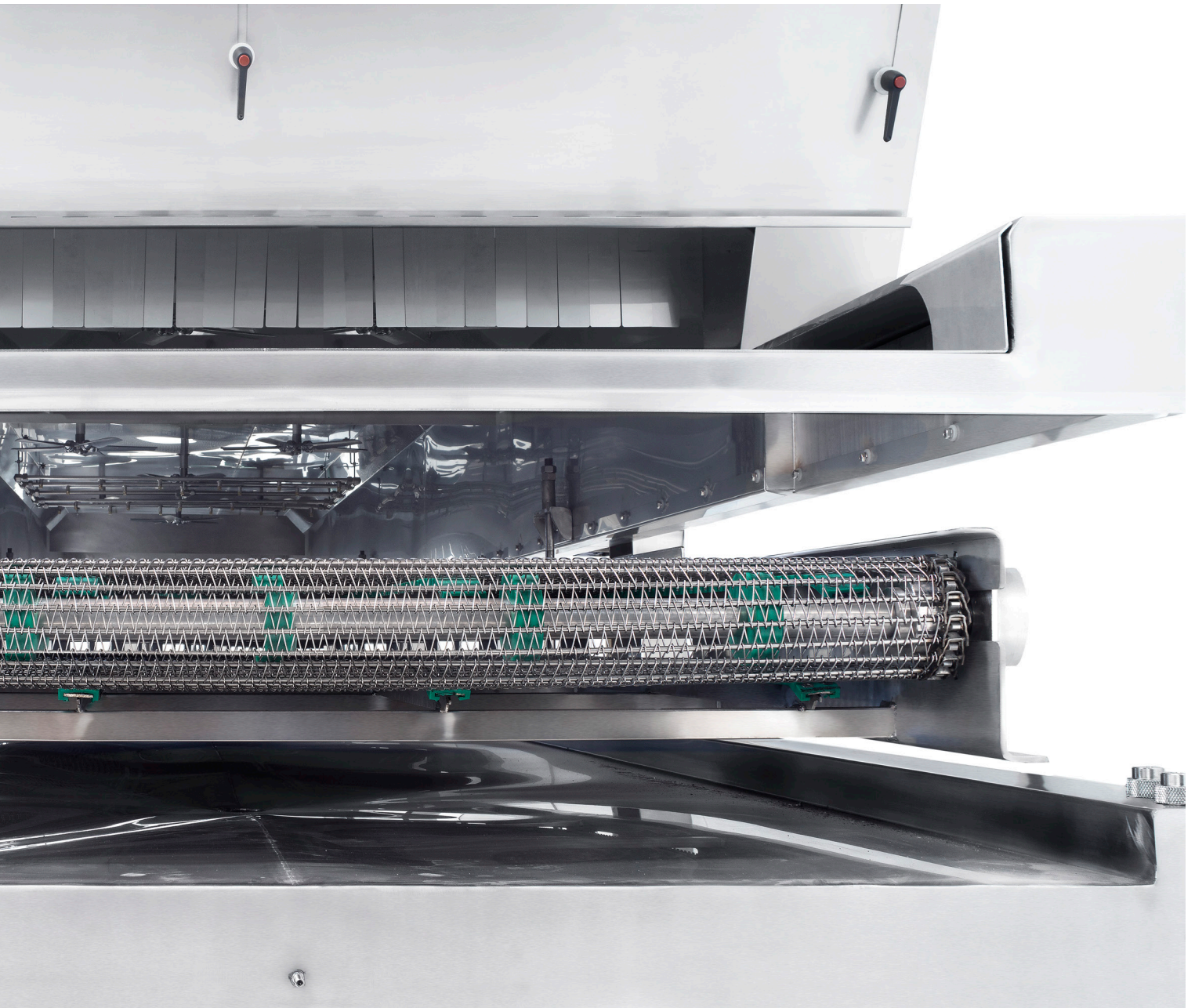
Inhibition of bacterial activity, speed of freezing, preservation of organoleptic qualities, low initial investment, reduced weight loss, ensure superior quality on defrosting.

### Test CryoSan®

We offer the the opportunity to conduct real testing of cryotechnology.

Contact us!  
[info@nippongases.com](mailto:info@nippongases.com)





# Continuous solutions



## CryoSan® Linear Tunnel

### The solution for continuous processes

The CryoSan® Tunnel allows complete control of the process. With product presence time regulation by belt speed and temperature sensors that control the proportional injection valve based on the preset control value, we offer unrivalled production versatility. The range of extractor regulation values also makes it possible to use all the frigories supplied by the nitrogen, maximising productivity.



## CryoSan® Sloping Tunnel

### Inclined cryogenic equipment

The technology in CryoSan® Sloping Tunnel developed by Nippon Gases approaches cryogenics from a completely new perspective. It freezes more productively and with less economic impact, using the same space as traditional in-line tunnels. The unique angular design minimises external air infiltration, saving up to 15% in production costs, depending on the type of product and the parameters used.



## CryoSan® Spiral

### The solution for large scale production

The CryoSan® Spiral is Nippon Gases' cryogenic system for freezing and reducing food with complete control over the process.

Large production volumes can be achieved with the versatility of the useful belt length, offering the possibility of incorporating different numbers of levels in the in the central spiral.



# IQF solutions

## CryoSan® IQF

### The Individual-Quick-Freezing solution

Discover a new way of freezing food with the new CryoSan® IQF cryogenic equipment from Nippon Gases. We offer you the most advanced technology to maximise productivity without compromising versatility, while saving space. IQF is easier than ever thanks to combining the continuous production capacity of a cryogenic tunnel with the reduced footprint of a freezing cabinet.

## Advantages

- Ideal for small products.
- Versatility: change belt-carrying trolley to standard trolley and switch from discontinuous to batch.
- Plastic conveyor belt that leaves no trace or mark (optional metal belt available).
- Easy cleaning.
- Versatile capacity from 200 to 2,000 kg/h.
- Less than half the surface area of an in-line tunnel for the same production.





# Discontinuous solution

## CryoSan® Cabinet

### Where efficiency meets adaptability

Raising the standard of cryogenic freezing, the CryoSan® Cabinet revolutionises the approach to freezing needs by bridging the gap between large-scale industrial freezers and the nuanced requirements of specialist manufacturers. Tailored to support a wide range of product types, from delicate bakery items to robust meat products, the CryoSan® Cabinet can be seamlessly integrated into existing production lines.

Its design not only prioritises space saving and improved workflow, but also a commitment to the highest quality products. The rapid cooling action of the cryogenic gases locks in freshness, ensuring that the taste, texture and nutritional value are preserved from the kitchen to the consumer.



# CryoSan® Injector

## Temperature control and thermoregulation

### Cooling has never been easier

A gentle flow of soft carbonic snow, allows you to selectively cool food mixtures of composition, extremely quickly, without contamination, without dilution (sublimation of the carbonic snow) and with a bacteriostatic effect.

Our dosing equipment is tailor-made according to the requirements of the process, either for portable use or coupled to a kneading equipment.

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Portable dosing

High performance  
Easy to operate  
Automatic process

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Precise temperature control

Easy customisation

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## **Automatic Dry Ice** Dispensing system in container

This innovative system comprises a highly efficient pre-cooler and a precision mill, both of which are rigorously thermostated to ensure optimum temperature control throughout the grinding process.

By incorporating a precision controlled supply feed of liquid nitrogen or liquid carbon dioxide, the Cryomacination system offers unparalleled efficiency and quality in the grinding process, ensuring that the integrity of the materials is maintained and the quality of the final product is enhanced.

- Rapid pre-cooling
- Optimum temperature maintenance
- Inert, dry, and non-toxic atmosphere

This system isn't just about efficiency and quality; it's about safety and environmental sustainability.



# Supply Forms

Nippon Gases offers various forms of supply to meet the diverse needs of the food industry, catering to businesses of all sizes and requirements.\*

## CONTAINER

over 400 kg



## DEWAR

Liquid  
4-50 l



## CYLINDER

Gas  
Up to 50 l



## BUNDLE

Gas  
10-12-16-28 cylinder



\* Please note the form of supply and the respective sizes may vary from country to country.

**PGS**

Liquid  
169 l



**MICROBULK®/TANK**

Liquid  
600-3,000 l or more



**EASEBULK®**

Liquid  
630-800 l



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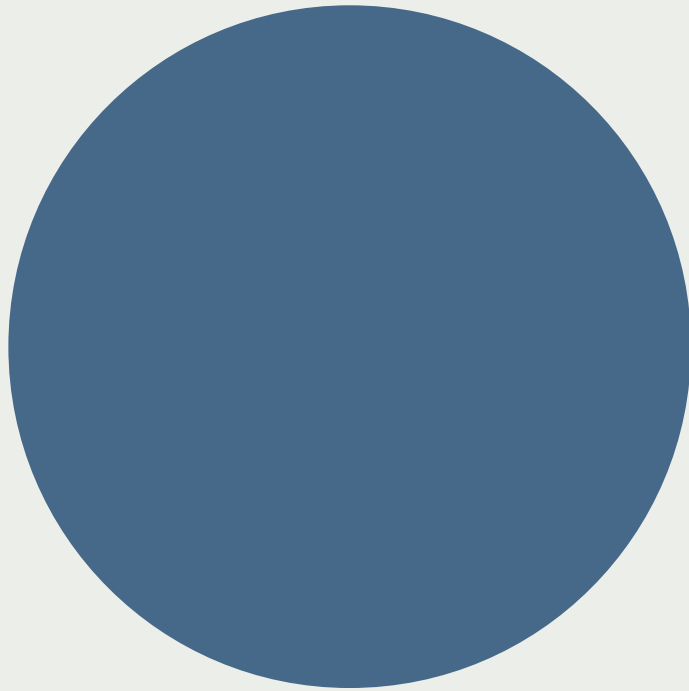
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