



**NIPPON  
GASES**  
The Gas Professionals

**SanIce®**

Dry ice based solutions  
for multiple applications





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

Our expertise goes beyond conventional expectations, offering solutions that maintain the perfect temperature for various applications, whether it's chilling and freezing food, creating low-fog effects, or facilitating metallurgical processes.

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.

# Dry Ice

Dry ice, is solid carbon dioxide (CO<sub>2</sub>) formed by compressing and cooling gaseous CO<sub>2</sub> into snow-like particles, which are then compressed into blocks or pellets. Its sublimation process, which transforms it directly from a solid to a gas, makes it an exceptional refrigerant with a temperature of -78.5 °C (-109.3 °F), well below traditional water ice, making it a powerful tool for refrigeration.

Our commitment to excellence and sustainability ensures that our dry ice solutions not only maintain product temperature, but also contribute to an environmentally responsible supply chain.

Its unique properties provide efficient cooling and refrigeration without the harmful environmental effects associated with traditional refrigerants. In addition, its versatility extends to green cleaning methods and agricultural practices, minimising emissions and reducing their impact.





# Dry Ice

## Characteristics

Dry ice has an unrivalled cooling capacity, making it the preferred choice for a wide range of applications in the food industry. Its ability to sublimate allows for a more efficient cooling process, eliminating the mess and hassle associated with melting ice.

- Non-toxic
- Inert
- Non-flammable
- Colourless
- Tasteless
- Bacteriostatic
- Fungicidal
- Residue free



## Advantages

Comparing dry ice to traditional cooling methods highlights its superior cooling capacity and efficiency. The cooling capacity of dry ice is approximately 170% that of water ice by weight and even more significant when considering volume, making it perfect for space-limited scenarios.

## Properties

Temperature	-78.5 °C
Moisture generated	0%
Sublimation heat	136 kcal/kg
Sublimation heat + specific heat (0 °C)	152 kcal/kg
Specific density	1.5 kg/dm <sup>3</sup>
Sublimated gas density	2.7 kg/m <sup>3</sup>



# SanIce® Solutions

SanIce®, Nippon Gases' range of dry ice solutions, represents an innovative approach to temperature-controlled packaging and logistics. With a range of options tailored to specific temperature requirements, our solutions are meticulously designed to ensure the integrity and freshness of products during transport, serving a wide range of diverse industries and applications.

We understand the critical importance of maintaining precise temperature conditions, especially for perishable goods such as fresh produce, frozen foods, pharmaceuticals, and biological samples.

With SanIce®, we offer a comprehensive range of thermostatically controlled isothermal containers that use dry ice and other passive cooling systems to maintain consistent temperatures throughout the shipping process.

At Nippon Gases, we are committed to innovation and sustainability, constantly refining our solutions to meet the evolving needs of the market. With our state-of-the-art facilities and dedicated team, we strive to provide our customers with the highest levels of quality, reliability, and efficiency.





# Applications

From catering and transport to special effects and industrial applications, dry ice is used in many sectors. Whether it's chilling and freezing food, providing environmentally friendly surface treatment, or ensuring temperature-controlled transport, the versatility of dry ice knows no bounds.

## Transportation

In the transport sector, dry ice is essential for maintaining the integrity of temperature-sensitive shipments. It is particularly important in the long-distance transport of food, pharmaceuticals, and biological materials, where maintaining specific temperature ranges is critical for product integrity. Dry ice's sublimation properties ensure that goods remain frozen or chilled without the risk of water damage, making it a preferred choice for air and ground transport solutions. This application not only protects the quality of the goods being transported, but also expands the possibilities for global trade in perishable products.



# Applications

## Storage

Dry ice is a key player in storage, providing an efficient way of maintaining optimum temperatures for perishable goods. Its ability to keep products at consistently low temperatures without the need for electricity makes it invaluable, especially in areas where the power supply may be unreliable or in situations where backup cooling solutions are required. This application is vital in reducing waste and improving the longevity of food items, pharmaceuticals, and other temperature-sensitive products, ensuring they remain fresh and viable over longer periods of time. The use of dry ice in warehousing to maintain optimum temperatures for perishable goods while reducing waste and improving efficiency.



## Retail and Culinary Presentation

Dry ice has revolutionised culinary and entertainment presentations, adding drama and spectacle to dining and live performances. Its ability to create dramatic fog effects enhances the dining experience, enabling innovative presentations such as instant ice creams and fog-infused dishes. Beyond the kitchen, dry ice's sublimation effect creates captivating low-lying fog in theatres, nightclubs, and events, enhancing the ambience and visual appeal.



## Dry Ice Blast Cleaning

An environmentally-friendly alternative to traditional cleaning methods. Using dry ice pellets, this technique effectively removes contaminants from surfaces without the use of water or chemicals, leaving no secondary waste. It is particularly beneficial for cleaning industrial equipment and machinery, minimising downtime by allowing cleaning to be carried out in situ without disassembly. This application demonstrates the versatility of dry ice beyond temperature control, providing industries with a powerful tool for maintaining cleanliness and operational efficiency.



## Other Industrial Applications

In addition to its more common uses, dry ice is an integral part of several other industrial applications. It plays a crucial role in emergency cooling scenarios, such as mechanical breakdowns, where rapid cooling is required to prevent damage or spoilage. In engineering, dry ice is used for fast chilling and freezing for laboratory research and shrink fitting, which enables the precise assembly of components. In addition, its use in cold grinding and localised freezing of pipes demonstrates dry ice's utility in facilitating maintenance and manufacturing processes without the need for complete system shutdowns. These diverse applications underline the versatility and indispensability of dry ice in various industries.

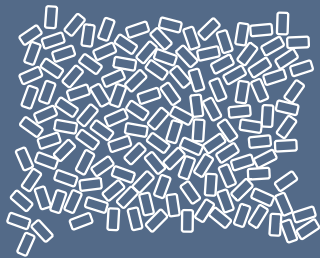


## Supply Forms

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

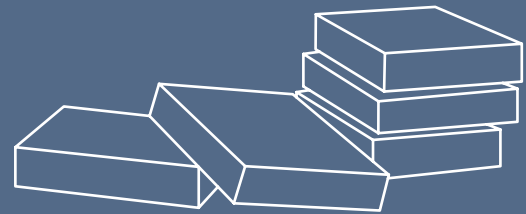
### PELLETS

3 mm / 9 mm Ø



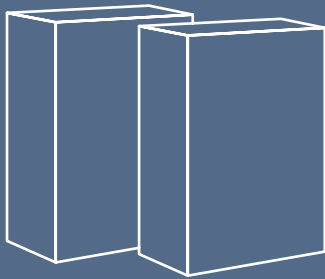
### SLICES

0.5 kg / 1 kg

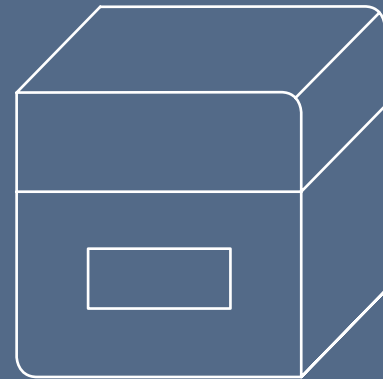


\* Please note the form of supply and the respective sizes may vary from country to country.

**BLOCKS** :  
10.5 kg



**CONTAINER** :  
over 400 kg



© 2024, Nippon Gases  
All rights reserved

**Learn more**

[nippongases.com](https://nippongases.com)

**Contact**

[info@nippongases.com](mailto:info@nippongases.com)

**Social Media**

[@nippongases](https://www.instagram.com/nippongases)

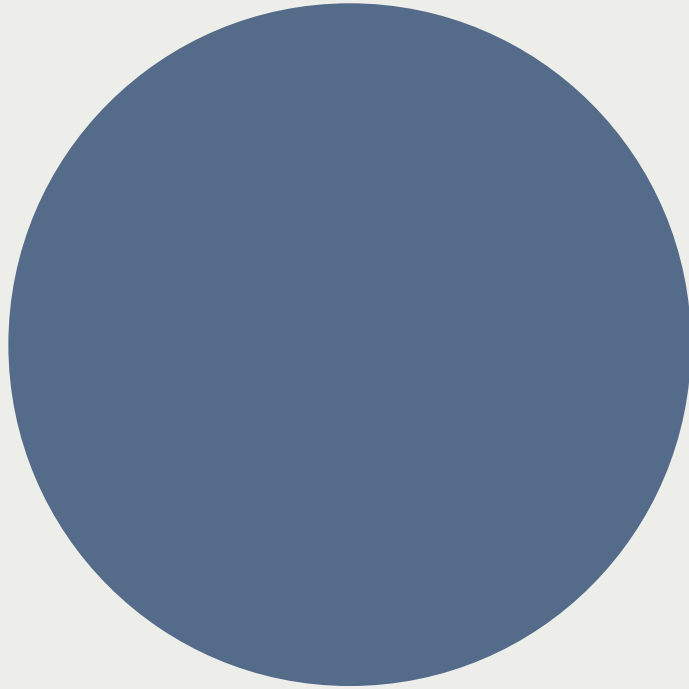
[youtube.com/c/NipponGases](https://www.youtube.com/c/NipponGases)

[linkedin.com/company/nippon-gases/](https://www.linkedin.com/company/nippon-gases/)





[info@nippongases.com](mailto:info@nippongases.com)



[nippongases.com](http://nippongases.com)

