

## Cryogenic Freezing - With Quality and Speed

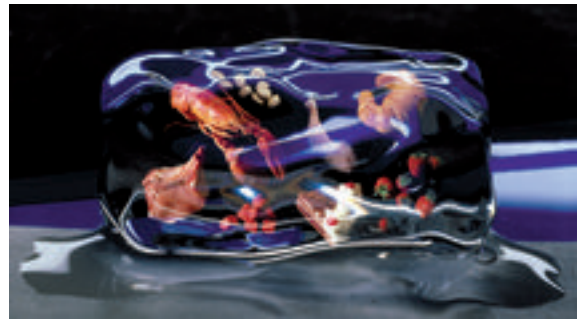


### Benefits:

- High quality frozen goods
- Minimal water losses
- Low investment costs
- Easy to operate
- Simple construction; fewer repair costs
- Rapid start-up
- Small footprint

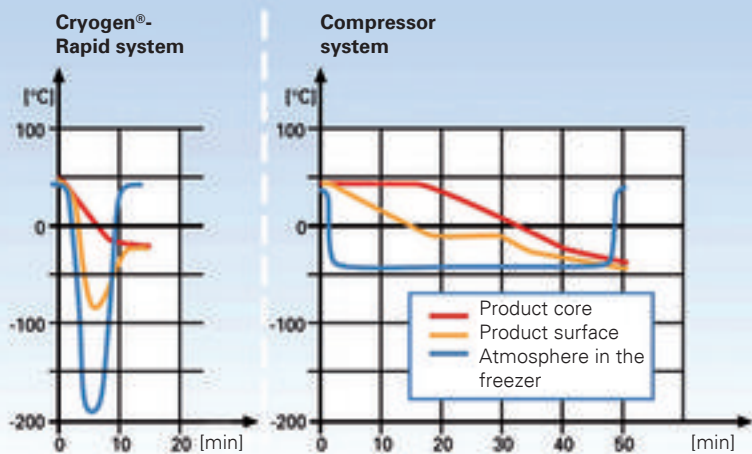
## N<sub>2</sub> and CO<sub>2</sub> – The Ideal Refrigerants

Food products have to be frozen as gently as possible so that when defrosted they can be served fresh and appetizing. A prerequisite for this is “fast cold”. The water contained in the cells must freeze very quickly (faster than 5 cm/h) in order to ensure the formation of very small ice crystals that do not damage the cell material.



## Cryogenic Freezing Systems

Whereas mechanical freezers are generally only designed for a specific cooling capacity, Cryogen®-Rapid cooling systems operated with either liquid nitrogen or liquid carbon dioxide have a very broad capacity range.



Cryogenic nitrogen or carbon dioxide not only achieve this very effectively, they do so economically as well. In Messer's cryogenic freezing applications named Cryogen®-Rapid the goods to be frozen come into direct contact with the refrigerant.

Very low levels of moisture are required to saturate the atmosphere with water vapour as a result of the low temperatures prevailing in the freezer. In all Cryogen®-Rapid freezers this prevents drying out of the goods and the consequent undesirable weight loss. Particularly, expensive or prepared foods such as meat, prepared meat products, convenience food, baked goods, fish, shellfish, asparagus, mushrooms and berries stay fresh and healthy!



They also have a comparatively low purchase price, are very flexible, can easily be expanded and furthermore are much smaller than a comparable mechanical system. Special civil constructions (e.g. a machine room with the appropriate high electrical capacity) are not required. Cryogen®-Rapid plants are not fixed installations and are easy to transport. The necessary refrigerant storage tanks stand outside.

