

# SnowDrop & MiniCryo

Cold chain solution for home delivery services

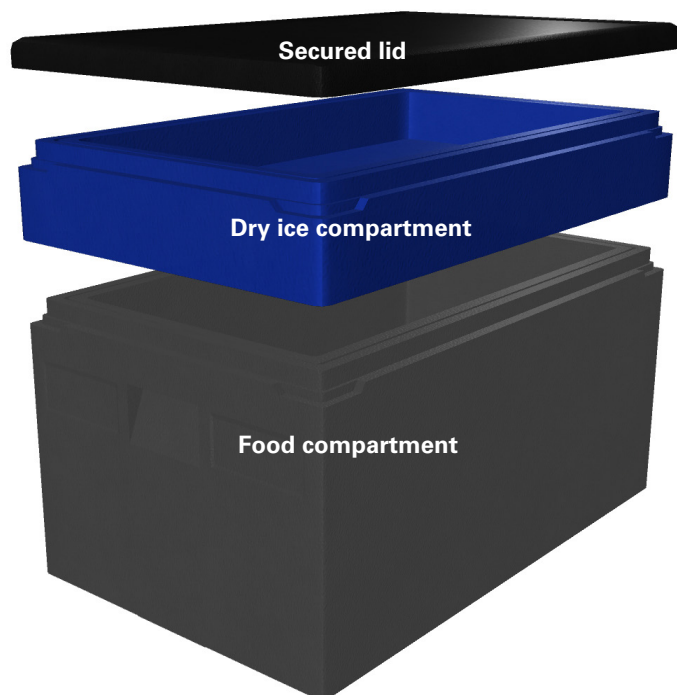


The growing importance of e-commerce has also reached the food sector (e-grocery shopping) with consumers increasingly requesting home food deliveries. Messer and Olivo are supporting this trend with the combination of Messer's SnowDrop station and Olivo's MiniCryo boxes for the reliable transport of chilled and frozen products.

The MiniCryo boxes are made out of highly insulating and very light EPP. While the box itself is filled with food, the compartment inside the lid is filled with CO<sub>2</sub> snow. This ensures a stable cold chain during transportation, preventing taste and quality deterioration of temperature-

sensitive food items. With two different types of lids the MiniCryo box is able to ensure a proper cold chain for two different temperature ranges: for chilled or for frozen products.

The SnowDrop station is constructed to produce CO<sub>2</sub> snow which is filled into the MiniCryo lids. Designed to meet the needs of our customers, the SnowDrop station is able to produce CO<sub>2</sub> snow on demand and to fill the MiniCryo lids by means of manual operation or an automated process. The combination of the SnowDrop and MiniCryo technology maintains the cold chain for journeys of up to 16 hours.



### Our solution with SnowDrop & MiniCryo provides considerable benefits

#### Savings

Onsite production of CO<sub>2</sub> snow is cheaper than buying it and eliminates loss of cold energy through storage (sublimation).

#### Safety

The operator never handles the CO<sub>2</sub> snow. It is securely confined to the respective compartments inside the MiniCryo lids which remain closed during transport and delivery.

#### Ease of use

Only a single cooling agent is required for chilled and frozen products. Combined with automated production and dosing with the SnowDrop station, this ensures a simple and effective working process.

#### Quality

Correct product temperature is perfectly maintained during transportation

#### Eco-friendly

The CO<sub>2</sub> used usually comes from industrial processes and is recovered and recycled to be used again. The system does not create any pollution or noise. Moreover, the EPP material used for the MiniCryo boxes is 100% recyclable and its production process only requires water vapor as a blowing agent.

### The main characteristics of the MiniCryo box are:

- Highly insulated, sturdy and very light
- CO<sub>2</sub> snow is securely confined to the respective compartment inside the lid
- Two lid versions available: chilled and frozen version

### The main characteristics of the SnowDrop station are:

- Low space requirements
- Safe CO<sub>2</sub> snow production onsite and on demand
- Manual or automated filling of the MiniCryo lids possible

## How does it work?

#### Step 1

Food products are picked and placed in the MiniCryo boxes.

#### Step 2

MiniCryo lids are moved to the SnowDrop station.

#### Step 3

Required amount of CO<sub>2</sub> snow is produced and dosed into the MiniCryo lids by the SnowDrop station.

#### Step 4

Filled MiniCryo lids are closed and secured.

#### Step 5

MiniCryo boxes are ready to secure the cold chain and to deliver groceries to customers' homes.



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