

USER MANUAL

OLIVO equipment provide temperature controlled environments to preserve your chilled and frozen products. It is used during transport distribution up to 24 hours and more, from RDC to stores.

The OLIVO system is an essential link in the cold chain, the required inner temperature is maintained in the Insulated ROLL during the transport and storage from coldroom to display (order assembly until unloading at delivery point). This is the most effective to avoid any breaks in the cold chain.

Manufactured in compliance with ATP International legislation, they are available in 130 to 1400 litres capacity; ROLL range.

OLIVO is a passive system, insulated units without mechanical refrigeration. Cooling system is from eutectic or cryogenic (dry ice in different forms)

This document speaks about Insulated ROLL containers use together with eutectic plates cooling system.

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1. Product description

The insulated ROLL container

- Insulation material: Expanded polyurethane foam
- Material of the walls: Rotomoulded Polyethylene



The Insulated ROLL retains the interior cold product temperature by minimizing the heat entry from exterior (ambient).

Eutectic plate, also known as cold accumulator








The eutectic plate stores cold energy during the freezing process. It releases this cold energy to compensate for entry of heat during the transport duration, thus maintaining the cold products temperature



2. Eutectic plates

Eutectic plates are available in various melting temperatures: +21°C, 0°C, -3°C, -12°C, -17°C, -21°C, -26°C

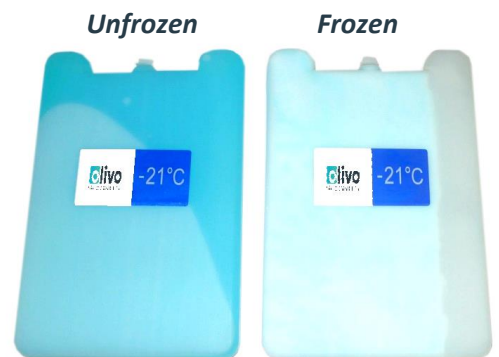
- In ambient 20°C (Europe countries). Use -3°C for chilled products. Use -21°C for frozen products
- In hot ambient 35°C (Asia countries). Use -12°C for chilled products. Use -26°C for frozen products

Color code	PLATE	PLATE
	Pink	+21°C
	Colorless	0°C
	Yellow	-3°C
	Green	-12°C
	Green	-17°C
	Blue	-21°C
	-Clear	-26°C

3. Freezing of eutectic plates








To ensure the maximum efficiency from the eutectic plates, the eutectic liquid must be completely solidified (see photo example).

Frozen plate (right side) is solid, like an ice cube. You will notice also a change in colour, from bright to pale



The freezing temperature must be at least 5°C less than the melting temperature of the eutectic liquid.

For most freezing equipment, or coldroom ; the temperature moves within a range. Such as, we recommend (where possible) to allow for 10°C less than the melting temperature of the eutectic plate. This help to avoid case where plates may not completely freeze because it does not meet the minimum.

Color code	PLATE	Has to be frozen to a minimum	Recommended
	+21°C	See notice TOP 21°C	See notice TOP 21°C
	0°C	-5°C	-10°C
	-3°C	-8°C	-13°C
	-12°C	-17°C	-22°C
	-17°C	-22°C	-27°C
	-21°C	-26°C	-31°C
	-26°C	-31°C	-36°C

Depending on the type of refrigeration unit used, the freezing time maybe from 12 to 24 hours.

Quick freezing time (6 to 12 hours) is possible if blast freezer is used. Normally, eutectic plates that are place in freezer coldroom takes about 12 hours (overnight) to 24 hours for complete freezing.

Freezing of eutectic plates in chest freezer is not recommended. Usually such chest freezers has “small” power of cold. design to maintain temperature, not freeze products. Not having enough refrigeration capacity to freeze the plates.

Always have two sets of eutectic plates. 1 in use, 1 in freezing process.



- -3°C and -12°C plate in most cases can adequately freeze in a freezer coldroom which is -18°C to -20°C
- -17°C and -21°C plate in a freezer coldroom -25°C to -28°C (storage of ice-cream products)

The eutectic liquid is non-toxic. Although non toxic, it is advised not to swallow the eutectic solution.

Do not stack plate together. Put the eutectic plates on OLIVO plate racks (see photo) or separate individually by at least 40mm air space to ensure good thermal exchange.



*Photo: OLIVO plate rack.
Can accommodate 40 plates.
20 on each side*

4. Plate and insulated ROLL compatibility

ROLL	TOP	PLATE SUPPORT
ROLL 130	1 x TOP 130	
ROLL 220	1 x TOP 370	
ROLL 300	2 x TOP 580	
ROLL 370	1 x TOP 370	
ROLL 500	1 x TOP 370	X
ROLL 550	1 x TOP 370	X
ROLL 580	2 x TOP 580	
ROLL 650	1 x TOP 900	X
ROLL 780	2 x TOP 780	
ROLL 900	2 x TOP 900	
ROLL 1000	2 x TOP 370	X
ROLL 1100	2 X TOP 370	X
ROLL 1300	2 x TOP 370	X
ROLL 1400	2 x TOP 370	X
ROLL 1410	2 x TOP 370	X

Above is the standard configuration for duration of 24 hours for chilled, 12 hours for frozen.

Longer duration can be achieved by placing more eutectic plates in the ROLL

5. Steps in using insulated ROLL for cold logistics transport



Cool down of Insulated ROLL before use

We recommend to cool down ROLL before use. IE. ROLL in coldroom for minimum 1 to 2 hours before use. Leave ROLL door open

- 1 hour cool down for chilled
- 2 hours cool down for frozen

ROLL cool down possible (inclusive) of time to make order assembly / picking



Place chilled or frozen products into the ROLL



When ROLL is full, or order assembly, picking complete. Place the “frozen” eutectic plate into ROLL. The eutectic plate is place in the top level

(in some models, a eutectic plate support maybe needed)



Close ROLL door. Move the ROLL to loading docks , waiting for loading into trucks



Load ROLL into truck for delivery to stores



COLD LOGISTICS

LEADER IN INSULATED CONTAINERS

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6. Cleaning



Using a dirty container increases the food contamination risk. Therefore it is advisable to implement a good health and cleaning policy.

Since most food is pre-packed, cleaning the container between each rotation is not necessary, unless there is a specific reason. e.g. product spillage. On the other hand, for seafood products being transported with ice, which produces water, this implies a through cleaning process of the ROLL each time it is emptied.



The user should take into account the peculiarities of his activity to determine the best method and frequency for any cleaning procedures.

Cleaning can be done by high pressure cleaning (manual washing); or automatic washing, see photo on right

7. Temperature Logging

When temperature records are required, e.g. testing, random checks, we recommend to use a data logger. A temperature data logger allows you to record temperature data throughout the duration of the transport, until product unloading at delivery point.

The temperature data logger should be one with an external probe sensor. Place the sensor in-between two products. This will allow you to record the product temperature. (You should record product temperature, not air temperature !)

8. Health and safety information: safe working

The following precautions have been shown to reduce injuries. Operators should:

- Only move one ROLL at a time
- Use the handles provided
- Move the ROLL no faster than walking speed
- Where possible, push the ROLL rather than pull as this is ergonomically better and will reduce the risk of foot trapping
- ROLL **on wheels** when fully loaded can generally carry up to 500kg of goods (guideline maximum). For pushing/ pulling ROLL container on slopes, they may only carry load of 400 kg. also, slips are more likely on slopes
- Seek help from another person when moving a ROLL up or down a ramp or on an uneven surface or when a cage is heavily loaded
- Do not ride in, or on, ROLL as they can easily overturn or trap the operator
- Wear gloves and safety shoes when moving ROLL – softer sole shoes will reduce slips
- Wear gloves when assembling ROLL to protect hands and fingers
- Stack heavier items at the bottom of the ROLL to keep the centre of gravity as low as possible (the correct lifting technique is particularly important at this low level)