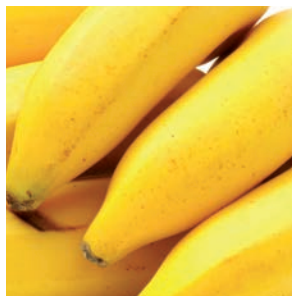


YOUR GLOBAL REEFER CARRIER EXPERT



CMA CGM, the world's third largest container shipping company, is committed to providing its customers with the highest quality service and to handling valuable products most efficiently. With an organization dedicated to Reefers and a network of experts in over 85 countries, CMA CGM is your global Reefer partner with local expertise in refrigerated transport.

THE RIGHT EQUIPMENT FOR YOUR CARGO

CMA CGM owns one of the largest and youngest fleets of Reefer containers designed for the transport of perishable goods in a temperature-controlled environment. The CMA CGM Reefer fleet consists of 20', 40' High Cube and 45' 32/33 PalletWide containers equipped with the latest remote control system enabling a permanent monitoring of all units on board.

LOW ENERGY REEFERS TO PRESERVE THE ENVIRONMENT

CMA CGM's aim is always to identify the most eco-friendly solutions for reducing energy consumption and CO₂ emissions. The average energy consumption per container has been reduced from 7 to 3,5 kWh for more than 30% of the Reefer fleet.

428
Vessel fleet

150,000
Reefer plugs

400
Ports of call

650
Offices worldwide

170,000
Reefer TEUs in fleet

90,000
Low Energy TEUs



FRESHNESS AND BETTER QUALITY FOR YOUR CARGO

Reefers are used to carry all kinds of cargo requiring temperature control, such as chilled or fresh produce (primarily fruits, vegetables and dairy products) and frozen foods (essentially meat and fish). Your perishable goods deserve the best possible controlled environment during transport to maintain their quality to their final destination. To ensure this, CMA CGM uses various technologies adapted to each of your products.

Atmosphere control

Modifying the composition of the air in the container (especially CO₂ and O₂ levels) significantly slows the ripening process of fresh produce and lengthens shelf life.

Humidity control

Various products require a reduced level of humidity inside the container (dehumidification). Most of our containers are equipped with a system that can lower the humidity within the range of 95 to 55%.

AMBIENT AIR

78%
Nitrogen (N₂)

21%
Oxygen (O₂)

0,03%
Carbon dioxide (CO₂)

0,03%
Inert gases 1%



Transpiration:

Water (H₂O)
Dehydration

Growth of aerobic microorganisms:

Decay

Decomposition of valuable ingredients:

Nutritional value reduced

Ethylene production:

Ethylene (C₂H₄)
Ripening / Ageing

Respiration:

Carbon Dioxide (CO₂) + Water (H₂O) + Heat
Ripening / Ageing

During the transport, fresh fruits and vegetables undergo different processes such as respiration, ageing, ripening, etc, transforming oxygen (O₂) into carbon dioxide (CO₂).

Temperature control

High freezer containers

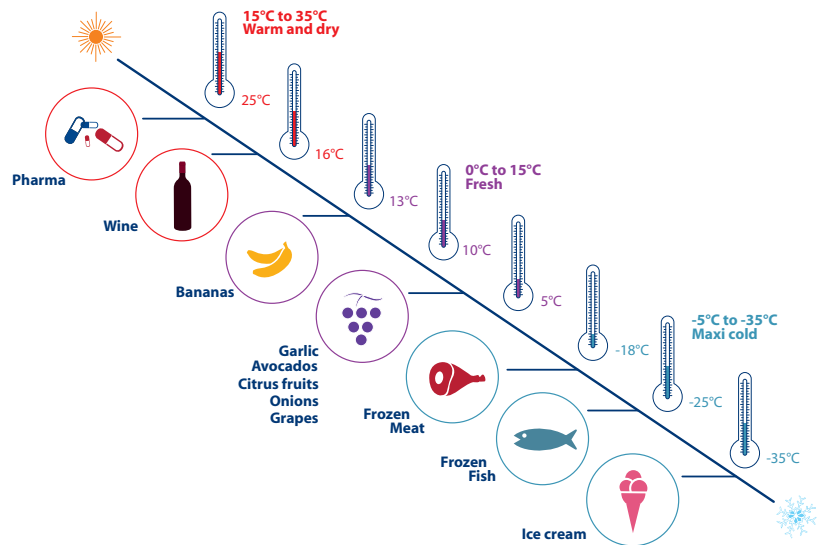
Ideal for products (ice cream and fish) which require extremely low temperatures (down to -35°C).

Cold treatment

A highly precise process where goods (mainly fruits) are kept at a low temperature for a predetermined, uninterrupted period to kill the pests.

Multi-temperature system

Used for some commodities, such as tomatoes or potatoes, that may require temperature changes during the voyage.



CARGO HANDLING CARE

Pre-cooling

Reefer containers are designed to maintain a specific temperature of the cargo during transport. In majority of cases, goods have to be pre-cooled to the required optimal temperature for transport before stuffing into Reefer container.

Airflow

All CMA-CGM Reefers containers are equipped with bottom air delivery. The air is forced down the bulkhead and through the T bar floor, then under and up through the cargo load. This allows for maximum efficiency with air flow, provided pertinent stuffing procedures are respected.

In order to remove the gas generated by respiration, fresh air can be exchanged from outside to inside at different rates from 0 to $260 \text{ M}^3/\text{h}$ (depending on the kind of cargo).

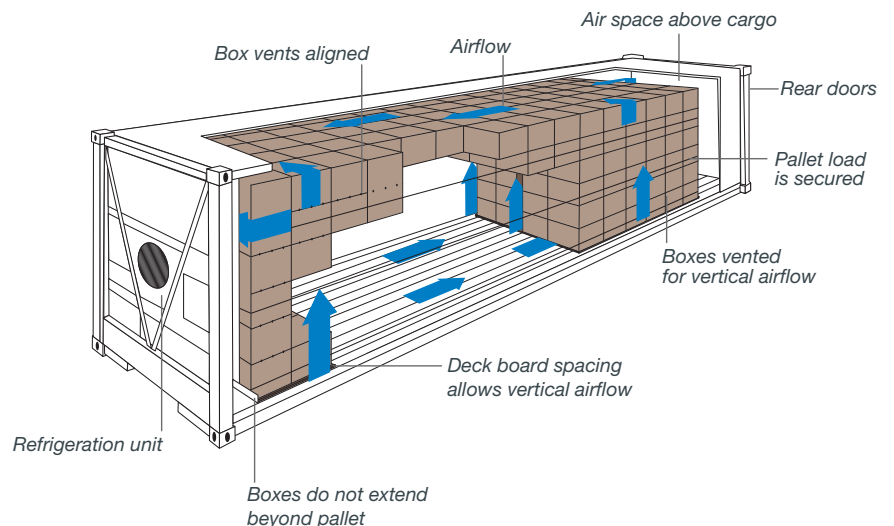
Cargo storage

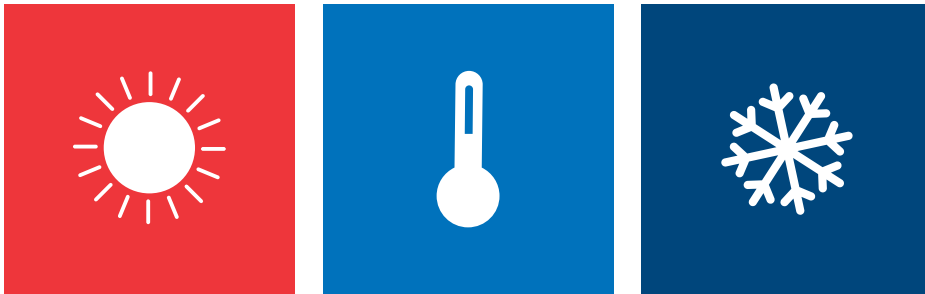
Block storage is recommended, leaving no space between the cartons nor between the cartons and the container walls.

In that way, air is forced up through the cargo and the entire floor space will be covered and refrigerated.



Container interior : T floor and walls





Contact your local reefer expert
Email: ho.reefercontact@cma-cgm.com



www.cma-cgm.com