

Food has always been big business, but as consumer demand for fine cuisine and international flavours has grown, so have the opportunities for smaller food companies; however, with them have come the inevitable challenges of transporting fresh, refrigerated, and frozen goods safely to their destinations.



The Perishable Cargo Regulations (PCR) is the leader in temperature control and cold chain management for goods from the health care and food sectors, including pharmaceutical products and non-hazardous **biological materials** and includes everything you need to properly prepare, package and handle time and temperature sensitive goods quickly and efficiently.



The PCR provides you access to the most current and efficient practices for your perishable cargo operations and an integral tool to achieve cost savings and avoiding delays by guaranteeing your shipments are problem-free and compliant with international or local regulations. The PCR includes:

Up-to-date airline and government requirements pertaining to the transport of perishable cargo

Requirements on handling, marking & labeling

Necessary packaging requirements

Information on the necessary documentation required when transporting perishable cargo

A comprehensive classification of 100's of perishable commodities

Vehicles for Transporting Goods at Controlled Temperatures



The following types of transportation vehicles were created to keep perishable products at the ideal temperature:

Isothermal:Has isolating walls, doors, ceiling, and floor, which limits the exchange of heat between the exterior and the interior of the van.

Refrigerated:Has a non-mechanical cold source that can reduce the interior temperature and maintain it for an average exterior temperature of 30°C to -20°C.

Freezer: Has a cold production mechanism to reduce the interior temperature of the empty space and maintain it at a consistent temperature between -12°C and -20°C.

Transportation of perishable goods is regulated by the “**Agreement on the International Carriage of Perishable Foodstuffs and on the Special Equipment to be used for such Carriage (ATP Treaty)**,” which establishes standards that guarantee optimal conditions for transporting foods for consumption.

Transportation of Perishable Goods by Ground



What is the best way to transport perishable goods?

- Perishable goods are mostly exported from Mexico to the US by ground, while goods exported to Europe and Asia are transported by air or ocean. Read more about these options below!!
- **Transportation of Perishable Goods by Ground**
- **By Truck.** Trucks transporting perishable goods have different cold systems, which may or may not be mechanized (ice or dry ice is often used).
- **By Rail.** Train cars should have an isolating lining, as well as a special system for refrigeration, loading, and unloading. Dry ice is often used to keep goods cold.

- The elements of continuous cold chain are water (river and sea), automobile, air and piping modes of transport. Sea transport is widely used in the transportation of perishable goods. Refrigerator vessels are used as part of sea transport fleet and fishing industry fleet.
- Transport refrigerator vessels are divided into universal and specialized. Universal vehicles can be used for the transportation of perishable goods both in cooled and frozen state. The range of temperatures in such vessels differs from -30 to 15°C. Specialized refrigerator vehicles are used for the transportation of certain types of cargo with set temperature regimes: for example, for carrying bananas. Specialized vessels are divided into high-temperature vessels for the transportation of fruit, vegetables, eggs and cooled salted fish, and low temperature for the transportation of frozen products of the products to be frozen in the course of transportation.
- Beside refrigerator vessels multi-target vessels are also used for the transportation of perishable goods provided such vessels have refrigerator capacities that amount up to 40% of the total vessel capacity. Such vessels are usually used specifically for the transportation of valuable cargo and in addition transfer perishable goods. Refrigerator vessels of fish industry fleet fulfill different functions. Industrial refrigerators, floating bases and factories, as well as fishing refrigerating vessels (big, medium-sized and small trawlers) can be used in the fishing areas to process, freeze and prepare the products of fishing for the transportation by refrigerator vessels to de-loading refrigerators located in sea ports, or to the de-loading units of railroad refrigeration nodes.

A **refrigerator truck** is a van or truck designed to carry perishable freight at specific temperatures. Like refrigerator cars, refrigerated trucks differ from simple insulated and ventilated vans (commonly used for transporting fruit), neither of which are fitted with cooling apparatus. Refrigerator trucks can be ice-cooled, equipped with any one of a variety of mechanical refrigeration systems powered by small displacement diesel engines, or utilize carbon dioxide (either as dry ice or in liquid form) as a cooling agent. Most of the long-distance refrigerated transport by truck is done in articulated trucks pulling refrigerated semi-trailers. Research is done on fuel cell auxiliary power units



A **cold chain** is a temperature-controlled supply chain. An unbroken cold chain is an uninterrupted series of storage and distribution activities which maintain a given temperature range. It is used to help extend and ensure the shelf life of products such as fresh agricultural produce, seafood, frozen food, photographic film, chemicals, and pharmaceutical drugs. Such products, during transport and when in transient storage, are called **cool cargo**. Unlike other goods or merchandise, cold chain goods are perishable and always en route towards end use or destination, even when held temporarily in cold stores and hence commonly referred to as cargo during its entire logistics cycle.



A **refrigerated container** or **reefer** is an [intermodal container](#) (shipping container) used in [intermodal freight transport](#) that is [refrigerated](#) for the transportation of temperature sensitive cargo.

While a reefer will have an integral refrigeration unit, they rely on external power, from electrical power points (“reefer points”) at a land based site, a [container ship](#) or on [quay](#). When being transported over the road on a trailer or over rail wagon, they can be powered from [diesel powered generators](#) ("gen sets") which attach to the container whilst on road journeys. Refrigerated containers are capable of controlling temperature ranging from -30C, -40C, -65C up to 30C, 40C

