

HOW TO

Maintain deep frozen shipments using the Envirotainer RKN t2 container

During 2013, Envirotainer noted a significant increase in enquiries for shipments in the controlled deep frozen range. Examples include shipments with a lower limit on the temperature range, such as -10°C to -25°C , -15°C to -25°C , and -5°C to -30°C . Identified by Cathay Pacific and Envirotainer specialists, there are currently no solutions available for shipping large volumes of products that has to be maintained in these ranges. Envirotainer Cold Chain Specialists developed a special set-up using the RKN t2 container that proves to maintain the product load within the range -10°C to -25°C .

Cathay Pacific set out to conduct a series of live tests to demonstrate that the same can be done in an actual shipment environment, this time narrowing down the temperature range to -10°C to -20°C . After some fine tuning, Cathay Pacific was able to maintain a temperature from Hong Kong (HKG) to Los Angeles (LAX) via Anchorage (ANC), and back again. Envirotainer and Cathay Pacific were both pleased with the test results, verifying that the temperature range can be maintained in “the real world” using this specific set-up.

Summary of test set-up development

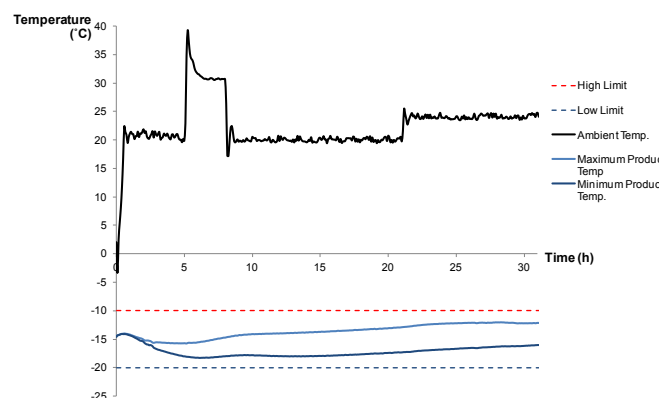
The first series of laboratory tests aimed to maintaining the product temperature in the range between -10°C and -25°C , using the RKN t2 container, showing excellent results over a 70 hour period. The key to the success was to add extra insulation on the top layer of the product boxes, preventing potential overcooling.

A second series of laboratory tests were performed with valuable input from Cathay Pacific. The temperature range was narrowed down to -10°C to -20°C . The product temperature held the strict limits for more than 30 hours at an average ambient temperature of $+22.3^{\circ}\text{C}$, with temperature peaks up to $+30^{\circ}\text{C}$, proving that the test set-up was successful.

The learning from these tests were boiled down into a standard operational procedure (SOP) used by Cathay Pacific in the live test shipment.



Depiction of the second test



Test shipment by Cathay Pacific (HKG/ANC – LAX, LAX – HKG)

In the test shipment, a very low mass product load was used consisting of 22 water bottles á 1.5 L (33 kg). Two temperature loggers were placed inside the container to monitor the product temperature. The container temperatures were acceptable, except when the container doors were opened in Los Angeles; however, the product temperature was likely maintained, due to the product mass working as a reservoir to maintain the temperature.

Envirotainer and Cathay Pacific agree to continue exploring the opportunities of controlled deep frozen shipments.

Please contact your Envirotainer Sales Representative for more information on how you can ship your deep frozen shipments in an Envirotainer RKN t2 container.

About Envirotainer

Envirotainer is the world-leader in secure cold chain logistics solutions, primarily within the life science industries. The company manufactures and leases active temperature-controlled container solutions for air transportation, including validation, support and service.

Envirotainer operates through an open, global network of airline companies and logistics partners. The company is represented in over 50 countries around the world with headquarters in Upplands Väsby just outside of Stockholm, Sweden. Envirotainer is a registered trademark of the company Envirotainer AB.

For more information, please visit www.envirotainer.com

About Cathay Pacific

Since 1946, Cathay Pacific Airways has grown from a regional freight operator to become one of the world's leading international air cargo carriers. Cathay Pacific Cargo connects the world from Hong Kong with its over 40 freighters and over 85 passenger flight destinations. Cathay Pacific's Pharma LIFT is a comprehensive range of specialised and professional air cargo services for temperature sensitive shipments. Cathay Pacific Cargo has developed a wide range of service options to meet the growing needs of its customers.

