TEMPERATURE-CONTROLLED AIR AND OCEAN FREIGHT

Unmatched global network of resources and capabilities for the pharmaceuticals cold chain

To maintain the integrity of life-saving products and ensure regulatory compliance, pharmaceutical companies require a cold chain that meets GxP standards. Proven competencies in packaging, tracking, handling, intervention, and reporting are critical to managing temperature-controlled pharmaceutical shipments around the world.

TYPICAL BUSINESS CHALLENGES

- Ensuring regulatory compliance
- Achieving shipment visibility across the cold chain
- Synchronizing logistics handoffs
- Competently handling operational problems



DHL SOLUTION

Based on DHL Thermonet, this solution represents the global standard in temperature-controlled GxP-compliant shipment, enabling 24/7 visibility and proactive intervention. A worldwide network of trained personnel and resources, including certified handling stations, delivers the competencies needed to operate the pharmaceutical cold chain.

SOLVING YOUR BUSINESS CHALLENGES

✓ Ensuring regulatory compliance

Trained personnel, resources, certified stations, systems, processes, and reporting ensure operational regulatory compliance.

✓ Achieving shipment visibility across the cold chain

Enabled by DHL's integrated IT systems; proactive and reactive action to adverse events such as temperature excursions, unplanned delays, theft, and more.

✓ Synchronized logistic handoffs

Effective and agreed SOPs and service levels ensure complete handoffs between manufacturers, carriers, consignees, and other supply chain partners, each with their own compliance protocols.

Competently handling operational problems

Data-driven analytics inform DHL's trained personnel, resources, effective systems, and proven corrective and preventative action (CAPA) processes; quick, safe problem resolution; proactive prevention of future occurrence.

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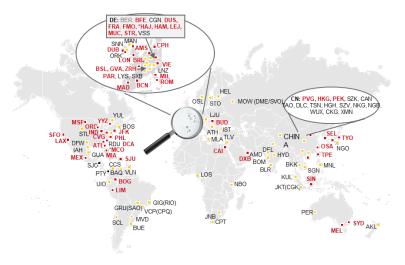
KEY BENEFITS FOR YOUR BUSINESS



INNOVATE AND

Health and safety prioritized in operations; clear sustainability goals and action plans.

Innovations to improve customer experience and operations; mindset of continuous improvement.

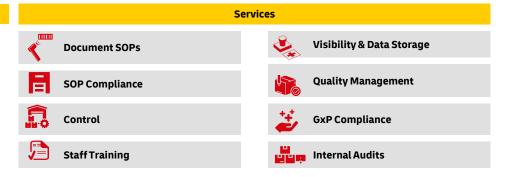


Unmatched global network of resources and capabilities

- People dedicated trained staff.
- Products safe handling of sensitive products
- Processes SOPs as required for GxP
- Packaging risk scoring and packaging solutions

Physical Component

- Places all stations are certified
- Partners qualified carriers, handlers, and technology providers.



DHL's ThermoNet global coverage:

+2,000 Trade Lane Pairs, 119 LSHC Certified Stations, + 1,000 Life Science Trained Resources

Temperature-Controlled Air and Ocean Freight

Business Scenario & Key Customer Challenges / Requirement	DHL Solution Value Proposition
 Business Scenario: A large percentage of pharmaceuticals in the supply chain are temperature sensitive. Cold products must be kept between 2°c and 8°c; frozen products at -20°c; and deep frozen products at temperatures as low as -80°c. It is the carrier's responsibility to not only ensure but also prove products are kept at these temperatures so it's in the carrier's best interests to have methods of monitoring near-excursions in temperature and ways of intervening to protect product safety. DHL Global Forwarding does this by using a product called DHL Thermonet. Monitoring: Sensors can monitor temperature, humidity, pressure, shock, and tilt, depending on the needs of the customer Documented proof: The system records sensor readings and can generate reports as proof that the temperature was maintained within limits GxP: Thermonet guides users to follow best practices, meet regulatory requirements, and adhere to certification Compliance and CAPAs: Thermonet stores compliance requirements and can help with corrective and preventative action (CAPA) management IATA CEIV Pharma recertification: This product helps users to maintain IATA CEIV Pharma certification Preferred Life Sciences Carrier Program: Thermonet tracks the performance of carriers and highlights high performers as DHL's preferred carriers DHL's Temperature-Controlled Air and Ocean Freight solution, based on DHL Thermonet, represents the global standard in temperature-controlled GxP-compliant shipment, enabling 24/7 visibility and proactive intervention. 	 DHL Air & OceanThermoNet is the global standard for temperature controlled GxP compliant shipments that require 24/7 visibility and proactive intervention <u>ThermoNet Features:</u> 24/7/365 proactive monitoring and intervention Highly trained and dedicated quality team Temperature data recording during transport CEIV- and QEP-certified Investigation tool and CAPA management for root-cause analysis Analytics and reporting utilizing data from DHL LifeTrack and external sources Value Proposition: Minimize product loss with enhanced traceability and proactive intervention Systematic integration of SOP with CAPA and root-cause analysis to ensure continuous improvement Dedicated customs brokerage helps products arrive in the right timeframe and condition CAPA analysis is streamlined through ambient temperature sensor placement; this increases logistics transparency Data analytics for faster and more informed decision making Enhanced process efficiency and cost optimization

DISCOVER MORE: TEMPERATURE-CONTROLLED AIR AND OCEAN FREIGHT

<u>Click here to connect directly with our experts</u>

Webinar: Enhancing air freight lane risk assessment to the next-level

In this webinar, we review new approaches for data-driven risk management and explored how risk assessment processes can be further simplified ensuring GDP compliance, aided by machine learning, IoT, and cloud computing technologies.

Article: IOT and data mining smarten the solutions

Keeping the supply chain cool opens another opportunity: Data Analytics. Find out how your data could drive further improvements and add value to your cold chain.

Temperature controlled road freight for Life Science & Healthcare

Explore DHL's Road Freight solutions, featuring temperature control, compliance, and active montoring.



