



HEALTHY, SAFE, SUSTAINABLE COLD CHAIN

MOVES THAT MATTER: HEALTH CARE

As the world moves forward with the largest vaccination campaign in history, we face an immense challenge to deliver billions of COVID-19 doses around the planet – made even more difficult by the sub-zero storage conditions required by some vaccines. Carrier is uniquely positioned to meet this challenge. Carrier and Sensitech are giving members of the pharma cold chain the confidence they need to move, store and monitor vaccines under precise conditions, all at a time when it matters most.

POTENTIAL VACCINE DISTRIBUTION CHALLENGES

The pharmaceutical supply chain is extremely complex, with many opportunities for disruption and other risks – from lack of air cargo capacity, to inadequate storage temperature, to theft. This has been compounded by the need for state and federal governments to create mass vaccination sites, while coordinating administration of some vaccines across two doses. Through it all, safety and efficiency remain the highest priority.



Potential Challenges

- Vaccine manufacturing capacity
- Supply chain constraints
 - Air freight and air shipping containers
 - Refrigerated truck capacity
 - Dry ice challenges
 - Cold storage capacity
 - Access to ancillary products
- Challenging storage temperatures
- Limited stability data
- Temperature excursions
- Volume and variation of administration locations
- Theft or counterfeiting
- Compliance assurance

INCREASING VISIBILITY ACROSS THE PHARMACEUTICAL SUPPLY CHAIN

These challenges create a heightened need for supply chain visibility, which has led to rapid and relatively broad adoption of real-time cargo tracking technology. Shippers and supply chain members count on being alerted to late departures, destination proximity, temperature changes, crime risk and more to help reduce risk and enable active intervention decisions.

Reduce risk and achieve positive return on investment (ROI). Enable active intervention decisions.

Departed: Shipment has departed from origin

Late Departure: Shipment did not depart within <X minutes> of planned departure time

Missed Departure: Shipment is still at origin after planned departure time

Delayed: Based on distance left to travel, shipment may not reach the destination before planned arrival date

Stopped: Shipment has not traveled <X miles> within <X hours>

Proximity: Shipment is within <500, 250, 100, 50 or 20 miles> from its destination

Arrived: Shipment has arrived at its destination

Waypoint: Shipment has arrived at its specified location

Late Arrival: Shipment has not arrived within <X minutes> of planned arrival time

Light: Light outside <set lux range>

Temperature: Temperature outside <set temp range>

Crime Risk: Shipments stopped in area of historically high cargo crime rates

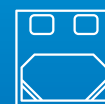


DELIVERING CONFIDENCE EVERY STEP OF THE WAY

Carrier Transicold is here to help move these critical cargoes with confidence. For decades, we've been the industry leader in marine container refrigeration. We are the preferred supplier of innovative, reliable container refrigeration systems for the world's shipping lines and leasing customers. And we're putting that expertise to work to ensure essential COVID-19 vaccines reach their destinations safe and sound.



WE ARE PART OF THE GLOBAL SOLUTION FOR VACCINE STORAGE, TRANSPORT AND DISTRIBUTION



960K

Container refrigeration units in service



\$9B

Worth of medicine and food cooled by Carrier on the ocean daily



400+

Authorized support, service and repair centers worldwide

THREE DIMENSIONS OF VISIBILITY

Carrier and Sensitech provide real-time data and insights where they're needed most. For the last 10 years, we've been providing leading visibility solutions across three key areas of supply efficiency and integrity, as they continue to forge the future of prescriptive and predictive analytics.



COLD CHAIN

Ensuring global product quality and integrity, and designed to meet validation requirements.



CARGO SECURITY

Protecting valuable cargo with risk mitigation control tower services, covert monitoring and best practice methodologies.



LOGISTICS PERFORMANCE

Proactive alerts, risk scoring, monitoring on-time performance and driving in-transit improvements.

CONNECTED COLD CHAIN SOLUTIONS

Carrier and its Sensitech business offer a full suite of products and services designed to help customers create healthy, safe, sustainable cold chain environments. This includes the following solutions:



CARRIER PODS™ MONITORED BY SENSITECH®

- Monitor product level from -95°C to +70°C
- Temperature range from -40°C to +30°C; control within +/- 0.25°C
- Premium airflow
- Lynx™ Fleet telematics integration
- Secure temperature recording for container and cargo
- Good Distribution Practice compliance



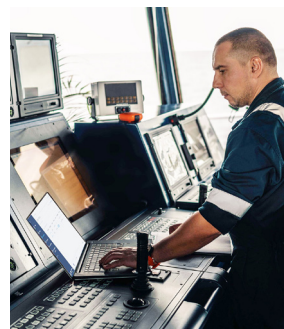
CARRIER PRIMELINE® UNIT

- Industry bestseller for over 13 years
- Lower operating cost and total cost of ownership with high efficiency
- Fast return temperature pull-down of -35°C to +30°C
- Best-in-class airflow



CARRIER NATURALINE® UNIT

- World's first (CO₂) natural-refrigerant-based solution
- Greater deep-frozen capability of -40°C to +30°
- High efficiency
- Tight temperature control



LYNX™ FLEET

- Carrier-exclusive reefer health index with prognostics and diagnostics
- Mixed fleet support unified view of all assets
- Notifications and alarms managed by exception



TEMPTALE® ULTRA MONITORS

- Temperature verification that meets stringent regulations
- Dry ice monitoring capabilities
- Compact USB temperature dataloggers
- Fast and easy data downloads
- Automatically generate encrypted files and secure reports
- Temperature range: -95°C to +70°C

VACCINES ARE JUST THE BEGINNING

Carrier and Sensitech are pushing the limits of what technology can do for all of us. It starts with supporting the global COVID-19 vaccination effort, and continues with creating solutions that further improve health care and truly make a difference for people and our planet. We believe that today's cold chain is only a fraction of what it could become. And with our combined expertise, we're committed to helping it grow.

HEALTHY, SAFE, SUSTAINABLE COLD CHAIN

- Enhancing cold chain visibility
- Optimizing reefer machine health
- Extending shelf life of perishables



CONNECT WITH AN EXPERT

Visit us at corporate.carrier.com/healthycoldchain to learn more from Carrier leaders and industry experts about creating a safe, effective cold chain with trusted transport and storage refrigeration applications and the visibility of advanced cargo monitoring.

For more information, contact Refrigeration.Communications@carrier.com.



CONNECTED
COLDCHAIN