

Aeronet's Cold Chain clients include pharmaceutical manufacturers, medical device makers, and other healthcare providers.

Packaging – Active & Passive

Active:

Active packaging are self-contained units that can actively regulate temperature within the unit.

- **Csafe** – RKN airline container with its own battery lasting 130 hours, maintaining 4-25° C, as it recirculates cold air within the unit. Detailed monitoring reports provided. Leasing options available.
- **Envirotainer** – RKN airline container that fits full pallets worth of cargo. They have units that fit 1-4 pallets. Detailed monitoring reports provided. Leasing options available.

Passive:

Passive packaging uses dry ice and gel packs to maintain the required temperature.

- **Cryoport** – Cryogenic container uses dry vapor liquid nitrogen for a -150° C deep freeze that lasts for 21 days. Used for lab samples.
- **Phase Change Material (PCM)** – Precondition panels is new technology intended to replace dry ice
- **Pallet Shippers (Blocks)** – ThermoSafe's pallet shippers have several sections filled with blocks of dry ice in the bottom, middle, and top (in most cases).
- **Small Pack Coolers (Pellets)** – Softbox filled with dry ice pellets.

Passive Packaging for cold chain shipments are validated by ISTA (International Safe Transit Association).

- Confirm temperatures are maintained, so products do not perish in transit.
- Rate the packaging in hours, such as 48, 72, and 96 hours, which is when re-icing would be required.

Temperatures

- **0° C or 32° F** – For dry ice blocks and pellets when the product needs to remain frozen. Requires UN1845.
- **2-8° C or 36-47° F** – For gel packs when product needs to remain cold, but not frozen.
- **Ambient Room Temperature**

Vendors

- **DHL ACS / CVG** – Reefer trailers to hold pallets, if needed.
- **UA Newark** – Reefer storage available.
- **Aeronet Road Transport (ART)** – Single temperature and multi-temperature trailers.
- **Airgas, Acme** – Dry ice.
- **Deltatrac** – Temperature monitoring / location monitoring showing temperature excursions.



Client Services

Illumina

- Lab reagent dry ice pallet shipments, and 2-8 via air and ground.
- Same day Phase Change Materials (PCM) from LAX to SAN weekly (currently being tested as they hope to use less dry ice).
- Debris removal / pickup of dry ice shipments for disposal. This is performed in SFO market by our agent TC Transportation.

ThermoFisher

- Weekly roundtrip trucks from their distribution center's pallet shippers, and 2-8 reefer shipments.

General Atomic

- Weekly roundtrip single temperature trucks moving precious metals with a temperature at -10-0°.
- Deltatrac used.

SGI DNA Research Company

- Air export of dry ice cooler shipments to Singapore and Korea.

GenMark Diagnostics

- Manufacturer of nasal diagnostic swab tests for COVID-19 and the influenza. Their COVID-19 test has a 2-hour onsite result turnaround.
- Stored at 2-8° C at San Diego Cold Storage (Aerotrac SmartTurn).
- Pallet shipment moves by air, via UA into Newark, for deliveries into Philadelphia, Boston, and New York.

Areas of Attention in Cold Chain

- In multi-temperature trailers, bulkheads need to be properly positioned, and trailers that are model year 2018, or newer, need to be used.
- When re-icing, make sure that our agents and vendors use proper dry ice, and reseal quickly. Proper reseal of boxes will minimize sublimation.
- Dry ice sublimates faster when exposed to open air, and is not affected by outside temperature.
- If there is a UN1845 label on the shipment, drivers need to confirm the dry ice weight on the labels match the bill of lading. If they do not match, the airlines will reject the freight.

Companies within the Cold Chain Vertical

- Abbott Labs (ORD / Greg Spudic)
- Becton Dickinson (SJC / Carole Pizano)
- Baxter Healthcare
- Johnson & Johnson
- Boston Scientific (SJC)
- Quidel
- Cardinal Health
- Celgene
- Medtronic