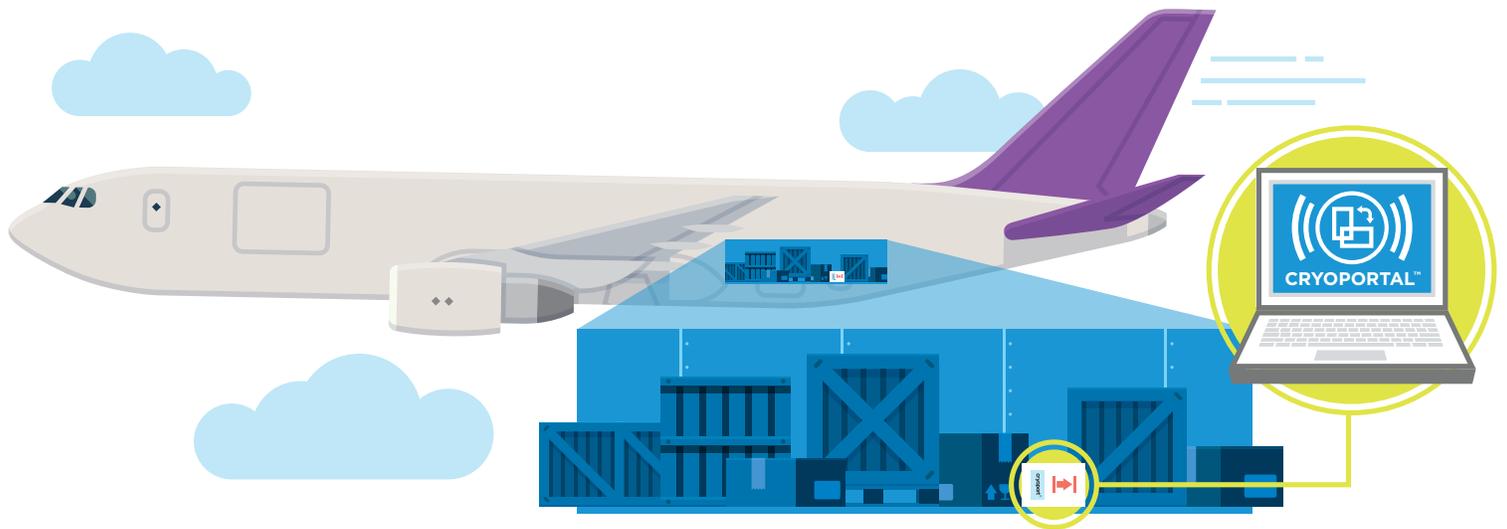


# SMARTPAK II™ ALERT AND PROMPT INTERVENTION SAVES THE DAY



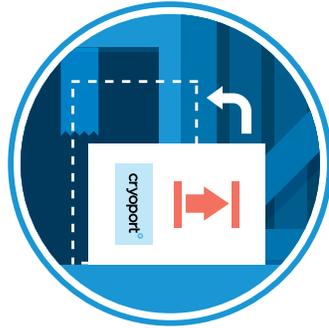
When a liquid nitrogen shipper was placed on its side in transit, potentially compromising the cryogenic temperature, Cryoport's customer service team launched into action to expedite the delivery.

## Background

Expecting parents were shipping embryos from a clinic in Southern California to a clinic in Hawaii for their procedure. The shipment was packaged in a Cryoport Express® shipper, a scientifically advanced liquid nitrogen dry vapor shipping container, capable of maintaining temperatures of  $-196^{\circ}\text{C}$  for up to 10 days if properly handled. The shipment was equipped with a SmartPak II™ condition monitoring system to track and report location, temperature and orientation as well as other parameters during shipment. As detailed below, the SmartPak II™ is integrated with the Cryoport™, a proprietary cloud-based system that provides the Cryoport customer service team with automated alerts if programmed condition criteria change that may present risks to the shipment.

## Problem

Although the package was clearly marked with shipping labels indicating the proper orientation, the carrier had inadvertently packed it on its side in the airplane cargo hold for the entire flight. Without direct and rapid intervention to expedite delivery once the shipment reached Hawaii, the fate of the embryo could have been uncertain.



While in transit, the SmartPak II™ condition monitoring system issued an alert indicating the shipment was tilted between 89 and 102 degrees, resulting in the shipper's internal temperature beginning to warm. Even though the shipper was validated to a 10-day "hold time," the liquid nitrogen evaporation rate increases when the shipper is tilted, thereby reducing the overall amount of time a stable temperature can be maintained. Because embryos shipped for *in vitro* fertilization must remain completely frozen during transit to be viable, this was a major concern.

Further complicating the situation, because of time zones differences, the carrier did not offer its usual 10:30 a.m. delivery commitment; the standard delivery commitment in Hawaii is 5:30 p.m. The additional hours between arrival at the sorting facility and standard delivery would further increase the risk to the embryo.

## Solution

When the SmartPak II™ condition monitoring system determines that a shipper is out of the strict compliance standards set by Cryoport, it automatically sends an alert via the Cryoport™, Cryoport's industry-leading, logistics management platform. The system, which provides transparency to the entire cold chain process, is monitored by Cryoport's customer service team 24/7 through established processes to deal with shipments needing immediate attention.



When the shipment sent an alert, the Cryoport customer service team quickly investigated the situation, instituted internal procedures and initiated contact at various levels of management within the shipping courier's organization. Cryoport's customer support team contacted the local office of the shipping courier in Hawaii to arrange special handling and expedited delivery of the shipment, and contacted the clinic to inform the clinic that it would need an embryologist on hand to unpack the shipment as soon as it was delivered.

## SmartPak II™ Monitors



Location



Temperature



Pressure



Light



Orientation



Humidity



Shock

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## Outcome

By working directly with the local sorting facility, the local station had the shipment on a van for delivery within minutes of receiving it and hand-delivered it within an hour of arrival, before 11:30 a.m. Because Cryoport's customer service team had alerted the clinic early that the shipment would need to be unpacked as quickly as possible, the clinic had time to arrange personnel to immediately attend to the still frozen embryo.



## Conclusion

The combination of the Cryoport Express®, SmartPak II™ condition monitoring system and Cryoport™ technologies, as well as close relationships with shipping partners and a dedicated customer service team, ensured the prompt delivery of this time- and temperature-critical shipment.

Although the vast majority of IVF shipments are handled without incident, inevitably some of them may require special attention. That's why it's important to have the Cryoport customer service team on the job and ready to respond. When your shipment can't be replaced, **Trust Cryoport.**