MONNIT®
USE CASE

Keep Refrigerator and Freezer Fluctuations or Failure from Spoiling Supplies

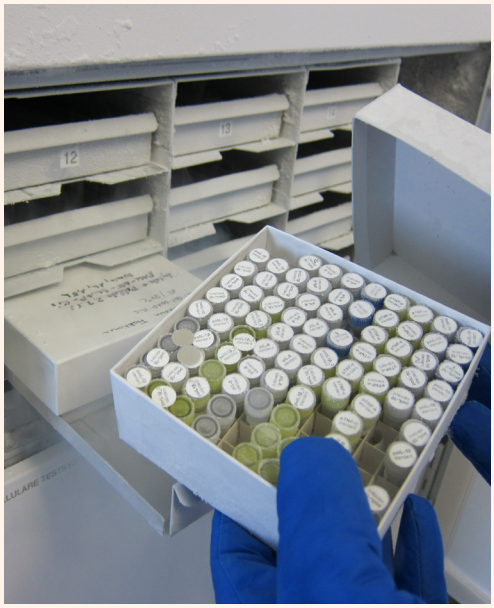
State-of-the-art refrigerators and freezers are vital in the biotech and pharmaceutical industry. Lives and money are on the line, so they have to run right for critical contents like vaccines to stay safe. Any reading outside recommended ranges for regulated inventory can be a costly temperature excursion event, possibly requiring product purge.

To maintain U.S. Food and Drug Administration (FDA) compliance, biotech companies must store and transport their products in strictly controlled environments and cold-chain systems.

See how Monnit® Remote Monitoring Solutions helps biotech and pharmaceutical leaders remotely monitor temperature and facility operations 24/7 using affordable and innovative solutions connected to the Internet of Things (IoT).

Spoiler alert: The ROI is significant. A biotech firm could save tens of thousands of dollars by preventing product spoilage in its refrigerators and freezers. They did it with data from fast-install IoT sensors and meters at a fraction of what comparable systems cost. The solution is all easily managed on a smartphone or computer. Plus,alerts via email, text, or call.

Challenges



A research and development facility director of a large biotech company contacted Monnit after a pharmaceutical storage freezer quit during a recent weekend. The ultralow temperature (ULT) freezer failure had ruined its entire frozen inventory.

Like most ULT freezers (-80°C/-112°F and below), it had a temperature display and alarm that could be seen and heard in the lab and nearby rooms. However, the ULT freezer lacked an integrated, online notification system that could send alerts to staff smartphones or computers.

This event caused the R&D director, facility managers, and supply chain officer to reconsider the firm's product management, distribution, and backup plans. These leaders wanted to:

- Put more preventive protocols in place to better protect products throughout the supply chain.
- Ensure the company's equipment—especially refrigerators and freezers—and facilities have redundant systems for added temperature protection and predictive maintenance.

They ultimately decided the company needed automated Monnit Remote Monitoring Solutions to track refrigerator and freezer temperature and cold chain operations using actionable data.

Solution

The company's lab and facility personnel self-installed:

- Monnit Standard, Digital, and Low Temperature Sensors on pharmaceutical refrigerators and ULT freezers to monitor its inventory of drugs, vaccines, and source materials
- Open-Closed Sensors on the freezer, refrigerator, lab, and other restricted-area doors to alert staff if they were ajar
- Wireless AC Current Meters to remotely monitor refrigerators, freezers, and other equipment energy use to predict maintenance
- Temperature Buffers (Glycol or Glass Beads) to insulate temperature sensor leads, offsetting temp swings (or false alarms) caused by defrosting cycles and opening doors
- The iMonnit Sensor Management and Remote Monitoring Software for use on key staff smartphones and computers—virtually anytime, anywhere
- A gateway in each lab to protect and communicate data sent to and from sensors and meters

Monnit Wireless Temperature Sensors were deployed in the company's freezers and refrigerators. Staff installed the Temperature Sensor housings outside of each unit, with temperature probes running between the door seals or, in some cases, through a side port and attached inside. Low Temperature Sensors can monitor a variety of ultra-cold freezers within a range from -200°C to +162°C (-328°F to +325°F).

The sensors were set up in iMonnit to check temperatures and record data every 15 minutes. Sensors sent data wirelessly to the gateway, then the gateway aggregated the data and sent it to the iMonnit Software.

Using iMonnit dashboards, staff could securely view and track each unit's temperature and save and print a report. Managers set up notifications to alert the right people via email, text, or call if doors weren't shut and if temperatures deviated from regulated levels. They could then move sensitive inventory to backup units and provide maintenance before a unit ultimately malfunctions or fails.

Results

The company set up and customized the Monnit Remote Monitoring Solutions quickly and easily in its labs and throughout its cold chain. Hundreds of thousands of dollars in pharmaceuticals have been monitored and protected ever since.

Using comprehensive Monnit Remote Monitoring Solutions, the biotech firm can:

- Avoid potential spoilage by using Monnit Sensors in refrigerators and freezers.
- Be alerted if doors aren't closed, preventing temperature fluctuations.
- Automatically track and document conditions with remote monitoring.
- Ensure facility and equipment function correctly with a redundant solution.
- Streamline inventory, lab, and facility management across the company.

Overall, Remote Monitoring Solutions help company managers significantly lower the risk of unsafe temperatures, protecting its bottom line. Even if a ULT freezer ultimately fails, Monnit Remote Monitoring can help the company document a possible temperature excursion event and quickly put their backup plan into action, preventing a potentially expensive loss.

ROI: After only a couple of days using Monnit Solutions, lab and facility managers optimized their remote monitoring. Most importantly, they could save possibly tens of thousands of dollars by avoiding spoilage.

Monnit Sensors and Meters Help You Keep an Eye on the Condition of Critical Assets

1

Low Temperature Sensors

Get alerted if a freezer temperature is fluctuating outside of your preset parameters. Keep all your pharmaceutical storage at safe, required temperatures. Our Low Temperature Sensors monitor -200°C to +162°C (-328°F to +325°F) with easy data-logging and graphing.

2

Digital Temperature Sensors

Push a button to deliver and digitally document storage temperatures from an easy-to-read LCD. Our Digital Temperature Sensor helps you meet industry-specific regulations by monitoring freezer and refrigerator temperatures between -40°C to 125°C (-40°F to +257°F)

3

Standard Temperature Sensors

Track temperatures throughout your biotech facilities and equipment with our Standard Temperature Sensor. You can monitor temperatures between -40°C to 125°C (-40°F to +257°F) in virtually any room and refrigeration unit using this line of versatile sensors.

4

AC Current Meters

Analyze freezer and refrigerator power consumption and predict problems before they occur with our AC Current Meters. Knowing current draw or use by the root mean square (RMS) average and amp hours helps you manage system performance and health.

5

Open / Closed Sensors

Know in an instant if a lab or freezer door has been left open. Keep all your restricted areas safe. Our Open-Closed Sensor features a switch and trigger magnet to detect open-close status. It's ideal for lids, cabinets, containers, windows, and gates too.

03/2021

MONNIT®

3400 South West Temple, Salt Lake City, UT 84115 • 801-561-5555 • monnit.com