BLOG

CAS DATALOGGERS

Demand Increases for Temperature Data Loggers to Monitor COVID-19 Vaccines

With the approval and distribution of the Pfizer and Moderna COVID-19 vaccines, many clinics and pharmacies have begun their search for a vaccine temperature monitoring solution that meets the requirements of keeping the COVID-19 vaccines safe. According to the Center for Disease Control (CDC), the Moderna COVID-19 vaccine should be stored long-term in a freezer at a temperature between -25°C and -15°C (-13°F and 5°F) or in a refrigerator at a temperature between 2°C and 8°C (36°F and 46°F) for up to 30 days before the vaccine vial seal is punctured. The Pfizer-BioNTech COVID-19 vaccine has slightly stricter requirements, needing an ultra-low freezer with temperatures between -80°C and -60°C (-112°F and -76°F) for long-term storage. The vaccine can be stored in a refrigerator prior to mixing for only 5 days (or 120 hours) at a temperature between 2°C and 8°C (36°F and 46°F).

With these stringent requirements, the CDC requires the use of a Temperature Monitoring Device (TMD) such as an electronic Digital Data Logger (DDL) to ensure that the temperature during the storage and handling of the COVID-19 vaccines is maintained properly and safely.

Key Features of a Temperature Data Logger

A key feature when using an electronic data logger is the ability to accurately determine the temperature of vaccine. Unlike a simple min/max recording thermometer, a DDL can provide information on temperature excursions – how long the vaccine has been outside of the recommended temperature range. These devices typically allow recorded data to be download-

-ed to a computer or sent to a web based cloud storage service to maintain historical records for up to 3 years – the CDC recommended archival period. They also allow the user to specify how often a measurement is recorded, typically at least every 30 minutes or faster. Rather than simply recording temperature data, more advanced DDL's can provide alarms, either local visual or audible alarms or via email, SMS or voice to provide immediate notification of temperature excursions or loss of power. The devices normally use some type of probe that is placed within the refrigerator or freezer compartment. To accurately reflect the actual temperature of the vaccine, the CDC recommends the use of a thermal buffer – glycol bottle, glass beads or Teflon block – on the probe to dampen temperature fluctuations due to door openings, etc.

While the condensed CDC storage and handling guides do not address calibration, the CDC Storage and Handling Toolkit document, recently updated to include the COVID-19 vaccines, **requires** that the DDL used for temperature monitoring be calibrated with National Institute of Standards and Technology (NIST) traceability. This is to ensure that the temperature recorded by the device is accurate to provide the best protection of the efficacy of the vaccines.

Furthermore, the CDC has published additional guidelines for the Moderna and Pfizer vaccines. In the case of the Moderna vaccine which is held at -25°C to -15°C for long term storage, it is preferred that the DDL provide a daily minimum and maximum temperature either on the display of the device or in the software. If this is not available, it is recommended that the recorded daily data be inspected to determine the minimum and maximum temperature.

The recommendations for the Pfizer vaccine are similar with the exception that the DDL be able to measure dry ice temperature -80° to -60°C for long term storage. For both of these, they can be stored in a refrigerator between +2°C and +8°C for shorter periods of time prior to dispensing.

Vaccine Temperature Monitoring Solutions

So which digital data loggers available on the market are suitable to monitor the COVID-19 vaccines? CAS Dataloggers has provided leading solutions for vaccine storage in freezers and refrigerators for many years. With the approval and distribution of the COVID-19 vaccines in the US, interest and sales of our vaccine storage monitoring data logger kits has increased dramatically. For small scale vaccine storage, there are two key kits:

T&D TR-75wb Kit for the Pfizer Vaccine storage (down to -199 Deg C)

T&D TR-71wb Kit for the Moderna Vaccine storage (down to -40 Deg C)

Each kit can monitor the temperature of two storage environments – with two temperature probes in each kit. Each kit comes ready to deploy and **meets the CDC requirements for monitoring storage temperature of the COVID-19 vaccines**, including a NIST Traceable Calibration Certificate.

We can also help you with any temperature monitoring solution from the smallest refrigerator to large scale freezer farms or even transportation monitoring. Give us a call at **800-956-4437** or visit our website at www.DataLoggerInc.com