



MVE Condition Monitoring Solutions

Confidence Without Compromise

Smart, Connected Cryogenic Storage



The Next Evolution in Cryogenic Storage

Condition monitoring is the continuous tracking of critical environmental factors—such as temperature, humidity, shock, and location—that can affect the integrity of cryogenically stored materials.

For researchers, clinicians, and logistics teams, this visibility is vital, as a single unnoticed temperature excursion or handling incident can compromise years of work or irreplaceable biological samples. By embedding condition monitoring directly into MVE dewars, we reduce the need for external devices or manual checks, ensuring seamless and automated data capture from the source. This integration creates a single, trusted system for both storage and monitoring, delivering near real-time insight, automated alerts, and a secure digital record that protects assets and simplifies compliance.

For over 60 years, MVE has set the standard in cryogenic storage, and with Condition Monitoring Solutions, our dewars now evolve into intelligent, connected assets. This innovation provides near real-time visibility into temperature and location, proactive alerts to reduce sample loss, and secure, anytime access through our mobile app or web portal. The result is a solution designed to safeguard research and patient materials, ensure compliance with regulatory standards, and optimize operations with actionable insights—empowering users with greater confidence and more control than ever before.



This is Confidence Without Compromise.



Seamless Integration

MVE's Condition Monitoring creates a fully integrated ecosystem of sensors, connectivity, and cloud access.

Unlike third-party devices that require manual setup or external attachments, MVE's solution is engineered to work in harmony with the dewar itself. This integration ensures more accurate readings, eliminates the risk of lost or mismatched data, and reduces staff burden by displaying monitoring at the source. The result is a system that not only safeguards sample integrity but also streamline operations, compliance, and logistics—providing confidence that every data point is captured and securely delivered without gaps.

MVE's new SC 4/2 V and SC 4/3 V dewars now support built-in monitoring through:

- **CryoBeacon (On-Demand Monitoring):** Bluetooth-enabled, QR code scanning for historical data.
- **SmartTag (Near Real-Time Monitoring):** 5G LTE device transmitting continuous data anywhere.
- **MVECloud + App:** Secure, FDA 21 CFR Part 11 compliant platform with dashboards, alerts, and reporting.

Features at a Glance

- Monitors temperature down to -200°C, humidity, orientation, acceleration, shock, light, and location
- Multi-channel alerts (app, email, browser, texts)
- Digital chain of custody and on-demand reports



Who Is This For?



Laboratories

- Always-on visibility reduces risk of undetected deviations
- Digital records replace manual checks



Logistics & Supply Chain

- GPS tracking ensures shipments arrive on schedule
- Alerts prevent losses during transport



Quality & Regulatory

- FDA 21 CFR Part 11 compliant records
- Meets stringent audit requirements



Executives

- Data-driven insights optimize asset utilization
- Protects both financial and reputational investment

The Ecosystem in Action

End-to-End Visibility. Every Step, Every Sample.

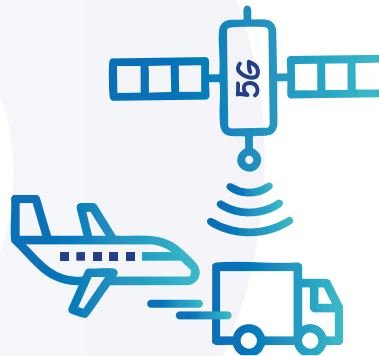


Sample Storage

- CryoBeacon monitors cryogenic temperatures inside the dewar or vapor shipper as well as ambient temperature conditions.
- Provides a permanent digital record — no more manual dipstick checks

Transport & Distribution

- SmartTag enables near real-time monitoring
- 5G LTE connectivity shares live temperature and GPS location globally
- Near real-time alerts to mitigate sample loss during logistics events



Data Management & Compliance

- MVECloud stores all monitoring data
- FDA 21 CFR Part 11 compliant, secure access from anywhere
- Dashboards, reporting, and digital chain of custody simplify audits

Multi-Dewar Operations

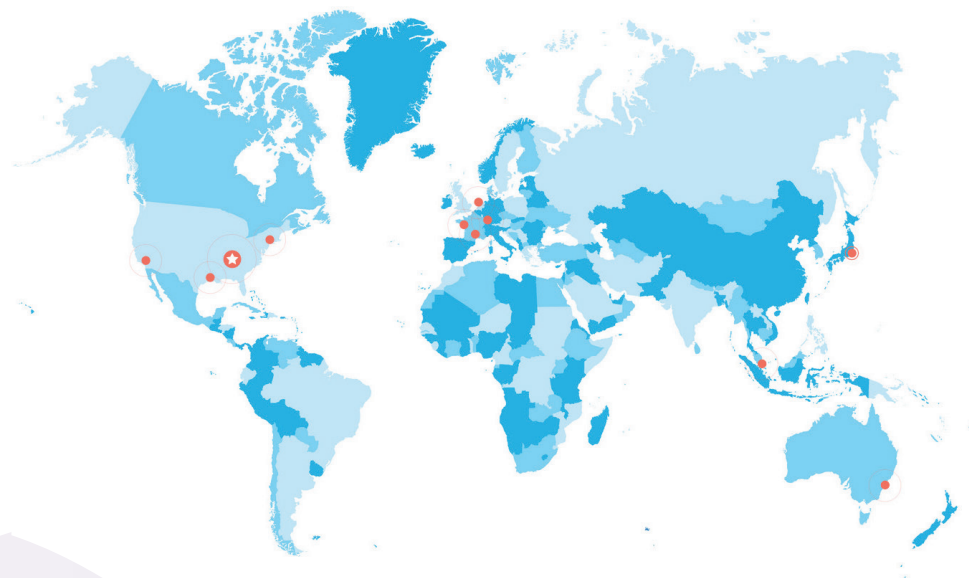
- Single dashboard for barns, clinics, labs, and shipments
- Improves efficiency with centralized monitoring



With MVE's integrated ecosystem, every stage of your cryogenic workflow is connected, and compliant — ensuring confidence without compromise.

Global Network, Local Impact: With MVE's global footprint, we have the reach to support customers worldwide. Yet, our approach remains personal, with local expertise and support teams dedicated to your success.

Our Locations



Visit www.airproducts.co.uk/biomedical for more information or call us on 0800 389 0202

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Intended Use & Indication for Use of Cryogenic Storage STORAGE ONLY

MVE Freezers are intended for the indication of preserving human biological products, samples, and/or specimens (e.g., blood, blood products, cells, tissues, etc.) at cryogenic and ultracold temperatures during storage.

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