MVE® Biological Solutions

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MVE Condition Monitoring Solutions

Confidence Without Compromise - Smart, Connected Cryogenic Storage

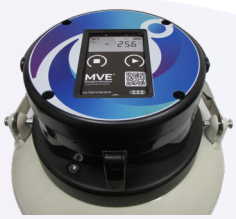
For over six decades, MVE has set the standard in cryogenic storage, and with Condition Monitoring Solutions, our dewars now evolve into intelligent, connected assets that safeguard research and patient materials, ensure compliance with regulatory standards, and optimize operations with actionable insights, empowering users with greater confidence and control than ever before.

MVE's condition monitoring solution continuously tracks critical environmental factors, including temperature, humidity, shock, orientation, acceleration, light, and location, that can impact 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.

Now available on large-capacity dewars. Condition Monitoring now extends beyond vapor shippers to the MVE XC 47/11 and Doble 47 aluminum dewars, with the datalogger built into the cork and cover. Upgrade kits bring the same capability to 47L dewars already in the field.



CryoBeacon



SmartTag



XC 47/11



Doble 47

Features & Benefits

Features:

- Dashboard & reporting tools
- Shipment & site manager
- Multi-channel alerts

Key Features:

- Near real-time or On-Demand Monitoring: SmartTag (5G LTE) or CryoBeacon (BLE)
- Multi-Sensor Capability: Temp (-200°C), humidity, shock, acceleration, light, orientation, geo-location
- Near real-time alerts: Email, app, browser
- Centralized Visibility: Secure MVECloud platform (FDA 21 CFR Part 11 compliant)
- Transportation Ready: Built for global supply chains, airline approved
- Available on vapor shippers plus XC 47/11 and Doble 47 dewars

Benefits:

- Mitigate sample loss with proactive alerts
- Compliance and digital record-keeping
- Improves efficiency with automated data capture
- Optimizes supply chain and logistics

Product Comparison

Device	Monitoring Type	Connectivity	Sensors	Battery Life	Ideal Use Case
CryoBeacon	On-Demand	BLE/QR Scan	Temp, humidity	1 year	Long-term storage, global shipments, periodic checks
SmartTag	Near Real-Time	5G LTE CAT M1	Temp, orientation, shock, light, acceleration, GPS	Up to 120 days; Rechargeable with Micro-USB	Global shipments, near real-time oversight

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Available Platforms

Platform	Primary Use	CryoBeacon	SmartTag	Upgrade Kit
MVE Vapor Shippers (4/2V, 4/3V)	Vapor shipment of samples	✓	✓	
MVE XC 47/11 (NEW)	Large-capacity liquid storage	✓	✓	✓
MVE Doble 47 (NEW)	Vapor shipment and liquid storage	✓	✓	✓

On XC 47/11 and Doble 47 dewars, the datalogger is built into the cork and cover and can be charged and read without removal. See the individual product cut sheets for capacities and dimensions.

Introducing the MVECloud

MVECloud offers a secure, centralized platform for accessing all condition monitoring data at any time, from everywhere. Whether samples are in storage or in transit, users can log in through a browser-based portal or mobile app to view near real-time status, historical trends, and complete digital records. The system delivers multi-channel alerts via email, app, text or web notifications, ensuring that critical updates are never missed. Fully FDA 21 CFR Part 11 compliant, MVECloud not only safeguards data integrity but also streamlines compliance with audit-ready reporting tools, ensuring seamless adherence to regulations.

By putting information at your fingertips, MVECloud empowers teams to make faster, more informed decisions and maintain complete confidence in the chain of custody across global operations.

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

Multi-Dewar Operations

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

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

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

Intended Use & Indication for Use of Cryogenic Storage and/or Transport

LIFE SCIENCE INTENDED USE STATEMENT

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.

STORAGE AND TRANSPORT

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

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