

## Application Brief

# Cryogenic Sample Tracking



### Industry

Healthcare  
Life sciences  
Pharmaceutical  
Vaccines

### Products

INTact Label  
TMX3000 series ribbon  
PM43  
PC43

### Region

North America

### Typical Applications

Sample tracking through cryogenic processing and storage

### Customer Benefits

- Robust traceability through harsh cryogenic processing and storage
- Temperature resistance as low as -196F (-127C)
- Durable, high contrast print for consistent scanning performance
- On-demand generation of high quality labels
- Reduced total cost of ownership with free printhead replacement program when Intermec media and fixed printers are used together

### Industry Need

Modern life sciences commonly require long term preservation of biological material; cryogenic processing and storage provides a means to this end. With a large quantity of small samples in storage, accurate tracking is critical. Barcoded labels (with linear or 2D symbols) are the preferred method, but the extreme environmental stresses can cause failure with standard media.

Cryogenic conditions have become commonplace in multiple applications, ranging from pharmaceutical processing to lyophilization of vaccines. Cryopreservation of tissues and cell suspensions in small vials provides its own set of challenges, requiring conformability to small diameter surfaces and adhesion to low surface energy plastics such as polypropylene and polyethylene. Increasingly common cryogenic shipping of vaccines, tissues, and medicines in liquid nitrogen with temperatures as low as -112°F /-80°C now subjects a greater range of barcoded items to these stresses.

### Intermec Solution

Intermec INTact labels deliver reliable performance through the wide range of conditions commonly encountered in cryogenic tracking applications. The aggressive adhesive develops a strong bond with polypropylene and polyethylene vials as well as less challenging plastics, glass, and steel. The highly flexible facesheet provides excellent conformability to small diameter 1 mL vials, ensuring that labels do not flag or peel even after multiple freeze and thaw cycles. The thin profile of these labels ensures compatibility with standard storage racks and automated processing.

Printed with the Intermec TMX3000 series ribbon, bar codes and human readable text have excellent abrasion durability, providing superior readability through extensive manual and automated handling and centrifugation. The rugged label system offers excellent moisture resistance for water bath processing. Printed images survive typical contact with common lab solvents and cryoprotectants such as DMSO (dimethyl sulfoxide).

### Media Solutions for Cryogenic Labeling

Application	Material	Durability	Temp. Range	Leading Stock Label Configurations (Desktop Printers)	Leading Stock Ribbons (Desktop Printers)
Cryogenic Container Labeling	INTact Label	Excellent; multiple freeze-thaw cycle and chemical exposure resistant	25F minimum application, -112 to 200F service	1.5x1" (E27010), 1.125x.625" (E27011)	TMX3000 series: 2.36x10,800", 1" core (13632111), 2.5x3588", 1/2" core (13042504)

## Printer Recommendation

PM43 Mid Range Printer [Profile](#)

- **Ready** – Fastest to deploy. Seamlessly fits any environment.
  - Large color multi-lingual tamper proof touch-screen or icon user interface
  - No touch configuration capabilities
  - Only CCX & WiFi certified fixed printers with standard IPv6 implementation
- **Reliable** – Maximize uptime. Built from 40 years of printing innovations. 3rd generation platform.
  - Precision Print for consistent bar code printing with pin point accuracy
  - Multilingual Web page loaded on every printer ensures easy device monitoring
  - Strong metal structure
- **Perform** – Increase productivity and process efficiencies.
  - Fastest throughput in its class
  - Powerful programmable capability with ability to directly connect peripherals
  - Most connectivity options in the market



PC43t Desktop Printer [Profile](#)

- **Intuitive** – *Super Easy to Install & Use*
  - 10-language LCD or Icon graphics user interface maximizes uptime
  - One hand media loading for trouble-free use
  - Fastest throughput in its class at 8 ips
  - Quick configuration with USB stick device
- **Flexible** – *Fits your business needs today & tomorrow*
  - User installable connectivity upgrades and accessories for scalability
  - Leading command languages for seamless deployment
  - Modular IT-friendly design speeds up deployment and support
- **Smart** – *Keeps you informed & productive*
  - Remote status updates with Intermec tools minimize downtime
  - Programmable with ability to directly add keyboard or scale improves efficiency



## The Intermec Advantage

In mission-critical life science tracking applications, the labeling system must operate flawlessly. Intermec printers and media are optimized to deliver superior performance when used together. Our rigorous testing and co-engineering ensures consistently high print quality, proven label and tag performance in demanding real-world environments, and maximum print head service life for reduced downtime.

When it comes to deploying a complete cryogenic bar code labeling solution, Intermec is the smart choice. Intermec printers and media are complemented by the Industry's only complete line of integrated solutions and services, including rugged mobile computers, RFID systems, and advanced scanning technology. Intermec products and services are used by customers worldwide to improve the productivity, quality and responsiveness of their business operations.



## Printhead Replacement Program

Intermec will provide no cost replacement printheads, as failures occur due to normal wear and tear, to those customers who use Intermec Media Products exclusively with their Intermec direct thermal and thermal transfer fixed printers. For full details, click [here](#).



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