



# Cryopreservation and Cold Chain



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# CYTO SAVER Controlled-Rate Freezer

Reliable, Safe, and Efficient Freezing Without Liquid Nitrogen

Freeze your valuable samples down at controlled rates to ultra-low temperatures without the hassle and expense of liquid nitrogen or dry ice. Get feedback on the temperature of your samples in real time and with intuitive temperature reports. Cut down on downtime between freeze cycles to maximize your sample freezing throughput.



## Liquid Nitrogen-Free

Freeze cryovials and blood bags without having to resupply or handle hazardous liquid nitrogen, and without the risk of LN<sub>2</sub>-borne mycoplasma contamination.

## Effortless Control

Program and save your desired freezing pattern and generate temperature reports with the built-in touch panel, giving you complete control and visibility throughout your cryopreservation.

## Efficient Workflow

Minimize downtime after freezing with the CytoSAVER's built-in heater, warming it back up to starting temperature in minutes to optimize your freezing.

Achieve consistent and efficient cryopreservation down to -80 °C to ensure the integrity and viability of your stem cells, immune cells, blood samples, and vaccines with the compact CytoSAVER Controlled-Rate Freezer, the cryopreservation expert's partner in research.

The CytoSAVER is great for cGMP applications. Ask for CytoSAVER models that comply with FDA Title 21, CFR Part 11. IQ/OQ and validation are available upon request as well.





## No liquid nitrogen, no dry ice

The hassle and cost of handling and resupplying hazardous materials for cryopreservation are a thing of the past. The CytoSAVER uses innovative Stirling coolers to contact-freeze your samples down to ultra-low temperatures.

## Programmable freeze patterns

With its easy-to-use touch screen, you can set your CytoSAVER to freeze samples anywhere from room temperature to  $-80^{\circ}\text{C}$ . Freeze rates can be as slow as  $0.1^{\circ}\text{C}$  per minute, and up to  $3^{\circ}\text{C}$  per minute. Include hold steps in the freeze cycle to let cells nucleate.

## Intuitive user interface

Track the temperature of your samples as you freeze them with the CytoSAVER's temperature reporting using plate and sample temperature probes. Export temperature logs to your external memory drive as a PDF graph or as CSV data points.

## Versatility and flexibility

Freeze tissue, cells, and cultures in cryovials, blood bags, or both at the same time in the CytoSAVER's customizable freezing chamber. The vial rack accessories are great for freezing 81 or 171 cryovials of 2 mL capacity at once.

## Cost and space saving

With its compact design, the CytoSAVER fits on a standard benchtop and doesn't need a constant supply of expensive liquid nitrogen or dry ice. The convenient handle at the top (FZ-2100 and FZ-2200 only) also make it easy to carry.

## Mycoplasma-free peace of mind

Cryopreserve biological samples in a sterile environment without the risk of LN<sub>2</sub>-borne mycoplasma contamination with the CytoSAVER, ideal for clean rooms and isolators.

## Optimized workflow

Along with its high capacity, the CytoSAVER also has a built-in heater designed to return its freezing chamber to starting temperature, getting it ready for the next freeze cycle for quick turnaround.



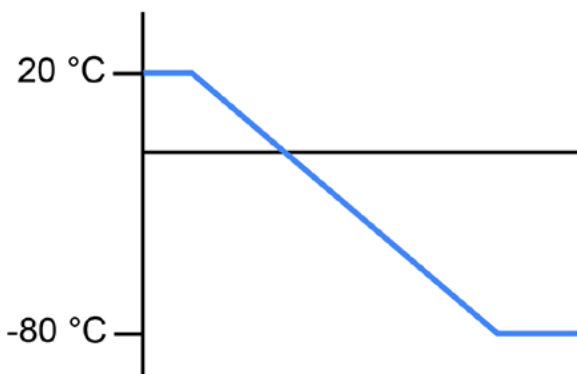
## Specifications

	Medium CytoSAVER	Medium CytoSAVER (cGMP)	Large CytoSAVER	Large CytoSAVER (cGMP)
Model #	FZ-2100	FZ-2200	FZ-3100	FZ-3200
2 mL cryovial capacity	81		171	
250 mL blood bag capacity	~2		~4	
Customizable vial rack?	Yes			
Freezing chamber internal dimensions (cm) W x L x H	17.4 x 13.2 x 6.5		30.0 x 13.2 x 5.8	
External dimensions (cm) W x L x H	47.3 x 33.0 x 45.5		51.0 x 42.0 x 58.0	
Weight (kg)	17		30	
Lower limit temperature (°C)	-80			
Freeze rate (°C / min)	min. -0.1, max. -3			
AC power supply	100-240 V, 50/60 Hz			
Power consumption (W)	max. 150		max. 300	
FDA Title 21 compliant?	No	Yes	No	Yes
IQ/OQ and validation?	No	Yes	No	Yes

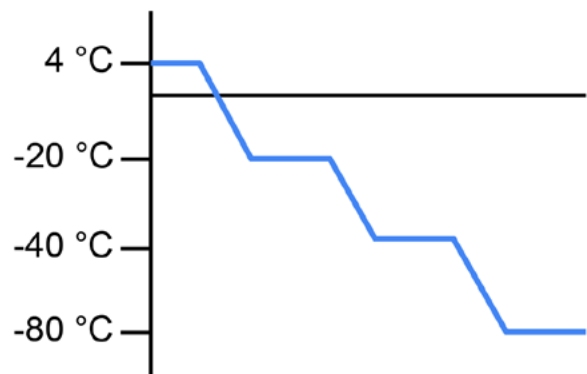
Note: The CytoSAVER is not intended for long term sample storage.

### Example Freeze Pattern - Try these freeze patterns for your samples

standard freezing pattern, -1 °C / min



freezing with hold steps, -3 °C / min





## Accessories

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### Medium cryovial rack

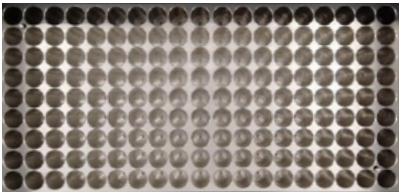
FB-2000

Capacity: 81 x 2 mL cryovials

Compatibility: FZ-2100, FZ-2200

Customizable to your cryopreservation specifications, including cryovial capacity and size, simultaneous freezing with other types of containers, etc.

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### Large cryovial rack

FB-3000

Capacity: 171 x 2 mL cryovials

Compatibility: FZ-3100, FZ-3200

Customizable to your cryopreservation specifications, including cryovial capacity and size, simultaneous freezing with other types of containers, etc.

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### IQ/OQ and validation

FO-0001

Compatibility: FZ-2200, FZ-3200

Compliance with FDA Title 21, CFR Part 11 for cGMP applications. The CytoSAVER will be validated using calibrated instrumentation, including thermometers, timers, etc.

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# CryoTrack Frozen Sample Transport Series

## -60°C Anytime, Anywhere

The reliable, safe, and convenient CryoTrack Series keeps your valuable frozen samples at stable, ultra-low temperatures during transport or shipping with cutting-edge freeze packs without the need for liquid nitrogen, dry ice, or electricity.

### Reliable Transport

Ensure your samples stay at a stable -60 °C for 12+ hours without needing liquid nitrogen, dry ice, or electricity

### Safe Handling

Transport samples without handling hazardous materials, minimizing contamination risks and maximizing viability

### Adaptable Configuration

Customize your sample transportation for your specific needs, from cryovials to bags to bottles and anything in between



**CryoTrack Porter**



**CryoTrack Carrier**



**CryoTrack Station**

The CryoTrack Series come in three great sizes: the Porter, Carrier, and Station are perfect for your sample transport needs. Add on extra freeze packs that will keep ultra-low temperatures for hours, or use the handy cooling blocks to make frozen cryovial and bottle transport a breeze.



## STEP 1: CUSTOMIZE

Configure the CryoTrack to fit your sample transport needs.



## STEP 2: LOAD

Store any kind of sample from cryovial racks to bags and bottles.



## STEP 3: GO!

Transport your samples long distance at  $-60^{\circ}\text{C}$  for 12+ hours.



### Long-lasting ultra-low temperatures

With its vacuum-insulation and cutting-edge phase change material freeze packs, the CryoTrack keeps frozen samples at ultra-low temperatures for hours without electricity, dry ice, or liquid nitrogen. Maintain  $-60^{\circ}\text{C}$  for 5+ hours with the CryoTrack Porter, 12+ hours with the CryoTrack Carrier, and 18+ hours with the CryoTrack Station.

### Adaptability and flexibility

Configurable freeze packs and vacuum insulation material keep your samples frozen in the CryoTrack Series. Use the frames in your CryoTrack Station to customize the inner chamber to fit your specific sample containers, like cooling blocks, cryovial boxes, serum bottles, and cryobags.

### Convenience and ease of use

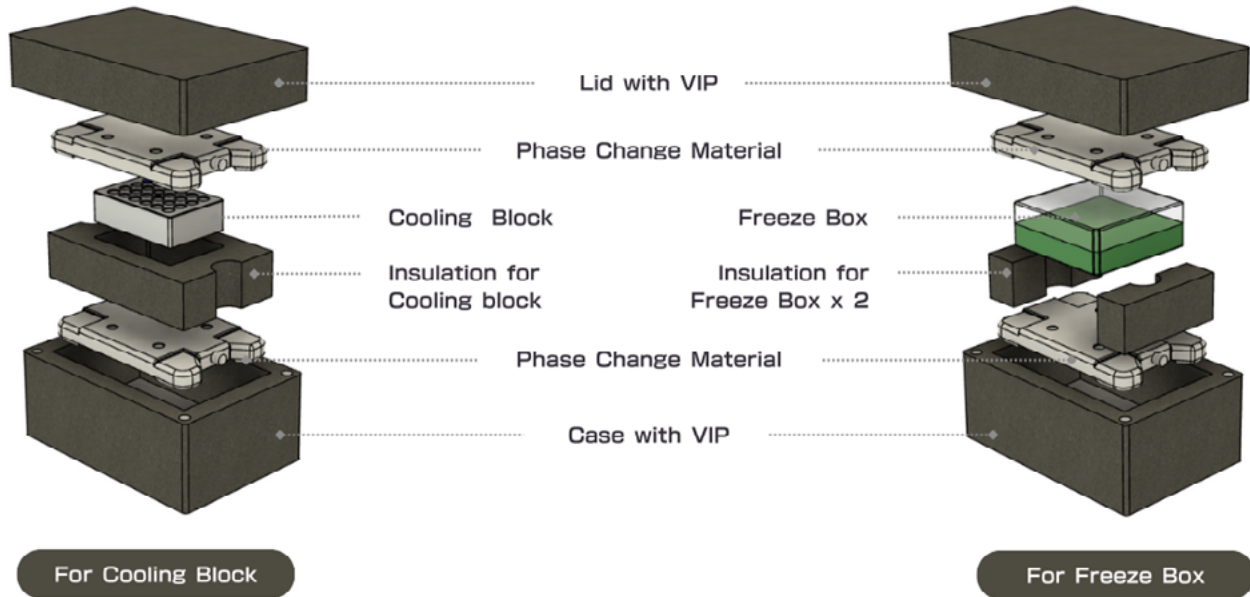
The CryoTrack Series feature magnetic lids for easy sample access, and fit easily in standard luggage for long distance travel. The CryoTrack Carrier also has a window to help you keep track of sample temperatures with your logger (not included).





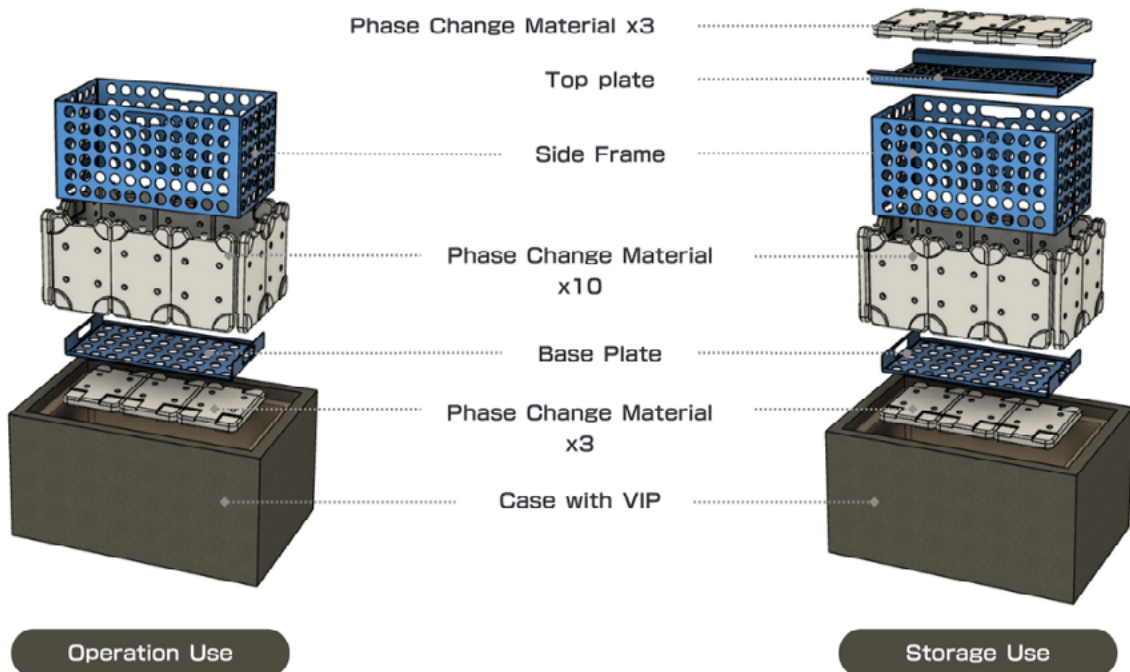
# Configurations

## CryoTrack Porter



VIP: Vacuum Insulation Panel

## CryoTrack Station



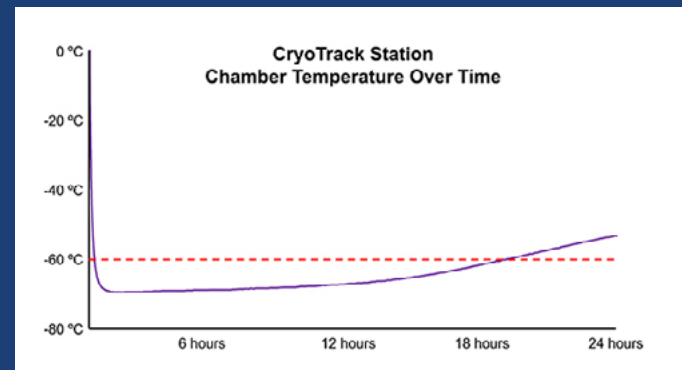
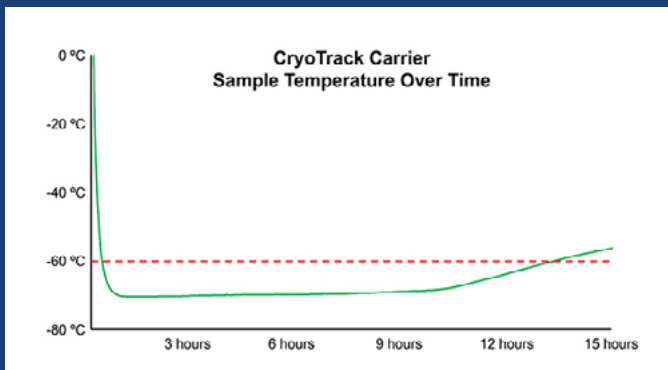
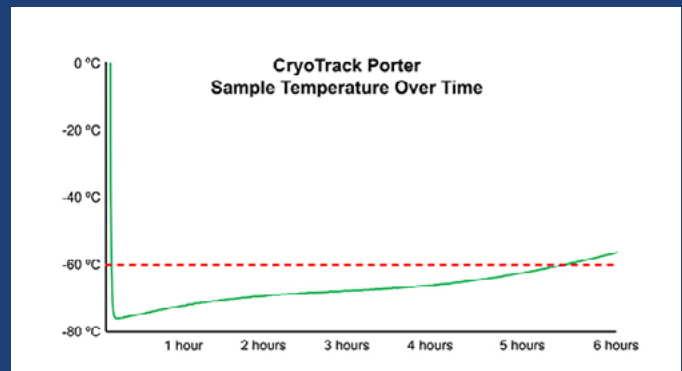


## Specifications

	CryoTrack Porter	CryoTrack Carrier	CryoTrack Station
<b>Model #</b>	ET-CTP1	ET-CTC1	ET-CTS1
<b>Freeze pack capacity</b>	2	6	16
<b>-60 °C maintenance (hours)</b>	5+	12+	18+
<b>Internal dimensions (cm) W x L x H</b>	22.5 x 14.0 x 10.8	22.5 x 20.0 x 15.0	39.0 x 20.0 x 12.0
<b>External dimensions (cm) W x L x H</b>	28.0 x 19.0 x 16.0	32.5 x 30.0 x 27.0	60.0 x 41.0 x 28.0
<b>Empty weight (kg)</b>	0.4	3.8	8.8
<b>Magnetic lid?</b>	Yes		
<b>Temperature logger window?</b>	No	Yes	No
<b>Chamber frame and plates?</b>	No	No	Yes
<b>Shoulder strap?</b>	No	Yes	Yes

## Temperature Graphs

Keep your samples at ultra-low temperatures for hours without liquid nitrogen, dry ice, or electricity. The insulation and freeze packs of the CryoTrack Porter, Carrier, and Station will maintain -60 °C or below for over 5, 12, and 18 hours, respectively.



# Accessories

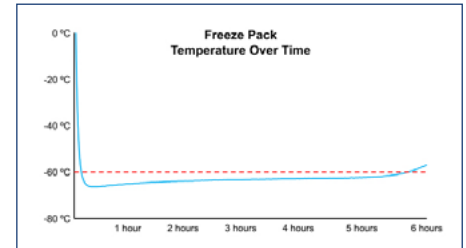


## Freeze pack

CV-70

Compatibility: all CryoTrack models

Made of PATHTHERMO Phase Change Material, these freeze packs can be frozen in your ULT freezer and will maintain -60 °C for 2 hours (with one pack), or for over 5 hours (with two packs).



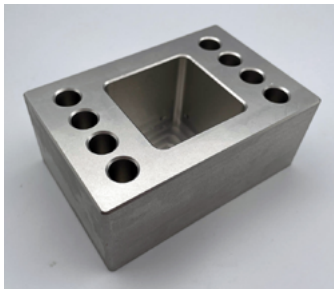
## Cryovial cooling block

ET-SB24

Capacity: 24 x 2 mL cryovials

Compatibility: all CryoTrack models

Cool and transport up to 24 cryovials of 2 mL capacity in this SBS-standard block without having to handle frozen vials individually.



## Cryovial and bottle cooling block

ET-SB1-8

Capacity: 8 x 2 mL cryovials + 1 x 125 mL bottle

Compatibility: all CryoTrack models

Cool and transport up to 8 cryovials of 2 mL capacity and 1 bottle of 125 mL capacity in this SBS-standard block without having to handle frozen vials and bottles individually.



## Cooling block grip

ET-SBBK

Compatibility: cryovial cooling block

Handle the cryovial cooling block safely with this grip, to make your frozen sample transport a breeze.



**Strex USA**

**[www.strexcell.com](http://www.strexcell.com)**

**Telephone:** +1 (866) 844-4374

**Email:** [info@strexcell.com](mailto:info@strexcell.com)

**Address:** 10060 Carroll Canyon Rd  
Suite 100  
San Diego, CA, USA, 92131

**Strex Japan**

**[www.strex.co.jp](http://www.strex.co.jp)**

**Telephone:** +81 6-6131-9602

**Address:**  
1-8-34 Oyodo, Kita-ku  
Osaka, Japan  
531-0076