

# STANDARDIZED CELL CRYOPRESERVATION

With the Integration of Eco-Friendly Solutions

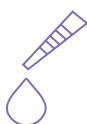
Cryopreservation is the use of low temperatures to preserve structurally intact living cells to avoid loss by contamination, to minimize genetic change in continuous cell lines and to avoid transformation in finite lines.

**It is critical to employ standardized procedures that minimize risk of variability and contamination.**

## Cell Cryopreservation Workflow

Highlighting temperature-sensitive areas susceptible to variability and contamination:

### Prep



#### Ice-Cooling

Ice cannot be used in the hood and is a source of contamination and variability



### Freeze



#### Solvent-based Freezing

Solvent-based containers can introduce variability, require ongoing solvent usage and disposal



### Transport



#### Dry Ice & LN<sub>2</sub>

Lack of hand portable transport solutions that ensure stable temperature control



### Store



#### Cryostorage Boxes

Lid and base can be separated, labels mixed up, white / beige makes it difficult to identify quickly



### Manage



#### Untracked Samples

Samples with unknown locations and temperature lack research viability



## Sources of Variability



## PREP



Cooling Workstation, Single Capacity system is a versatile ice-free cooling alternative to ice buckets and gel-filled coolers. Cool, freeze or transport samples without worry of contamination or temperature variation.

- 0-4°C cooling for 10 hours open, 16 hours closed
- SAVES WATER - eliminates need for ice production, potentially saving thousands of gallons of water per year
- Samples stay organized, dry and at the same temperature
- Sanitize with bleach or alcohol
- Ideal for ice-free cooling of cryoprotectant and cell suspensions in the hood
- Optional freezing core enables <-20°C bench top or hood freezing

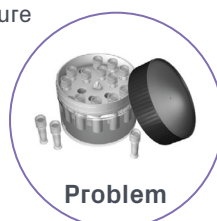


## FREEZE



Controlled-rate alcoholfree cell freezing container provides a highly reproducible -1°C/minute freezing rate when placed in a -80°C freezer. No alcohol or fluids required. The insulative outer housing and thermo-conductive solid state core ensure consistent heat removal to all vials throughout the freezing period. Cell Freezing containers are unbreakable, open easily when frozen, and are not cold to the touch when frozen – no “frosty” fingers. Proven for use with stem cells, primary cells and cell lines.

- Eco-friendly; eliminates up to 12L of isopropanol per unit per year
- Controlled -1°C/minute freeze rate in -80°C freezer
- Equal or better cell viability compared to isopropanol-based containers
- Well-to-well uniformity



## TRANSPORT

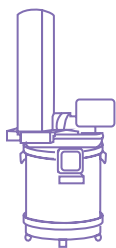


CryoPod Carrier addresses unmet needs in cryogenic sample transport and handling around the laboratory, campus or town.

CryoPod Carrier provides safe, reliable and portable <-150°C cryogenic transport for biospecimens for over 3 hours. The instrument displays temperature, date and time, and features audible and visual alarms as well as logging capability. The carrier integrates into an optional automated filling station, ensuring safer handling and replenishing the LN<sub>2</sub> charge in less than 15 minutes.

- 3L of LN<sub>2</sub> provides over 3 hours of <-150°C cooling
- Hand-portable, weighs <20lbs
- No direct contact with LN<sub>2</sub>
- Holds one full cryobox, or 2-3 bag cassettes
- Optional automated filling station





### STORE



Hinged cryo storage boxes are water-resistant, laminated sample storage boxes with a patented hinged lid for lasting durability and archival integrity. Formats available for freezer and cryogenic storage. Six bright colors enable quick identification in frosty freezers, minimizing strain on freezer compressor after door is closed.

- Hinged lid keeps base and lid together
- Laminated coating and plastic dividers provide durable storage
- 9x9 and 10x10 array available
- 2" or 3.5" boxes for 1-5 mL tubes
- 6 bright colors for quick identification and in/out of freezers



**Problem**

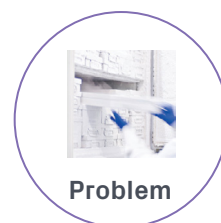


### MANAGE



FreezerPro® is an intuitive, fast, reliable and secure solution which enables users to know precisely where a laboratory sample is located even before opening the freezer door. It provides laboratories with a secure web based application for managing samples.

An off the shelf solution FreezerPro has no expensive setup or implementation costs and with FreezerPro cloud, customers are able to access information via a web browser from anywhere in the world, at any time.



**Problem**

### Compliance

- FDA 21 CFR Parts 11, 21, 58, 210, 211, 820
- cGLP/cGMP (Good Laboratory Practice and Good Manufacturing Practice) Section 508 Accessibility Guidelines
- HIPAA Accountability Act of 1996
- HIPAA Patient Safety and Quality Improvement Act of 2005 (Patient Safety Act)

## Ordering Information

Thermoconductive Tube Racks for Cryo or FACS Tubes	
BCS-126	Thermoconductive Tube Rack for 15 Cryo or FACS Tubes
BCS-534	Thermoconductive Tube Rack for 24 Cryo or FACS Tubes
BCS-138	Thermoconductive Tube Rack for 30 Cryo or FACS Tubes
BCS-105	Thermoconductive Tube Rack for 45 Cryo or FACS Tubes

Thermoconductive Tube Racks for 15mL, 50mL and 250mL Centrifuge Tubes	
BCS-153	Thermoconductive Tube Rack for 9 × 15mL Centrifuge Tubes
BCS-154	Thermoconductive Tube Rack for for 4 × 50mL Centrifuge Tubes

Thermoconductive Tube Racks for Cell Therapy Injectable Ampules	
BCS-266	Thermoconductive Tube Rack for 12 × 2mL Injectable Cell Therapy Ampules
BCS-265	Thermoconductive Tube Rack for 12 × 10mL Injectable Cell Therapy Ampules

Thermoconductive Sink automation-friendly plate modules	
BCS-536	Thermoconductive Sink for use with Flat Bottom Plates
BCS-537	Thermoconductive Sink for use with one 96-well U-bottom Plate

CryoPod™ Carrier liquid nitrogen-based < -150°C portable carrier	
243354-001	CryoPod Carrier
252888-002	CryoPod Carrier lid, green
252888-005	CryoPod Carrier lid, purple
252888-004	CryoPod Carrier lid, pink
252888-001	CryoPod Carrier lid, orange
252888-003	CryoPod Carrier lid, grey

Hinged CryoBoxes 2-inch, 81-place adjustable plastic grid	
BCS-206	CryoBoxes, white; 5 per case
BCS-206B	CryoBoxes, blue; 5 per case
BCS-206G	CryoBoxes, green; 5 per case
BCS-206O	CryoBoxes, orange; 5 per case
BCS-206P	CryoBoxes, purple; 5 per case
BCS-206PK	CryoBoxes, pink; 5 per case
BCS-206MC	CryoBoxes, multi-color; 5 per case
BCS-207	CryoBoxes, white; 50 per case
BCS-207B	CryoBoxes, blue; 50 per case
BCS-207G	CryoBoxes, green; 50 per case
BCS-207O	CryoBoxes, orange; 50 per case
BCS-207P	CryoBoxes, purple; 50 per case
BCS-207PK	CryoBoxes, pink; 50 per case
BCS-207MC	CryoBoxes, multi-color; 50 per case

Hinged CryoBoxes 2-inch, 81-place adjustable plastic grid with LN2 drain holes	
BCS-217G	CryoBoxes, green
BCS-217P	CryoBoxes, purple
BCS-221G	CryoBoxes, green
BCS-221P	CryoBoxes, purple

Hinged CryoBoxes 2-inch, 100-place plastic insert	
BCS-209G	CryoBoxes, green
BCS-209P	CryoBoxes, purple
BCS-220G	CryoBoxes, green
BCS-220P	CryoBoxes, purple

Hinged CryoBoxes 3.5-inch, 81-place adjustable plastic grid	
BCS-215G	CryoBoxes, green
BCS-215P	CryoBoxes, purple
BCS-219G	CryoBoxes, green
BCS-219P	CryoBoxes, purple

1.0ml - 5ml 1D-coded Cryo Tube, Internal Thread	
BCS-2510	1ml 1D-coded Cryo Tube, Internal Thread, self-standing, 500 tubes per case
BCS-2511	2ml 1D-coded Cryo Tube, Internal Thread, self-standing, 500 tubes per case
BCS-2512	2ml 1D-coded Cryo Tube, Internal Thread, round-bottom, 500 tubes per case
BCS-2513	4ml 1D-coded Cryo Tube, Internal Thread, round-bottom, 500 tubes per case
BCS-2514	4ml 1D-coded Cryo Tube, Internal Thread, self-standing, 500 tubes per case
BCS-2515	5ml 1D-coded Cryo Tube, Internal Thread, round-bottom, 500 tubes per case
BCS-2516	5ml 1D-coded Cryo Tube, Internal Thread, self-standing, 500 tubes per case

1.0ml - 5ml 1D-coded Cryo Tube, External Thread	
BCS-2517	1ml 1D-coded Cryo Tube, Internal Thread, self-standing, 500 tubes per case
BCS-2501	2ml 1D-coded Cryo Tube, External Thread, round-bottom, 500 tubes per case
BCS-2502	2ml 1D-coded Cryo Tube, External Thread, self-standing, 500 tubes per case
BCS-2503	3ml 1D-coded Cryo Tube, External Thread, self-standing, 500 tubes per case
BCS-2504	4ml 1D-coded Cryo Tube, External Thread, self-standing, 500 tubes per case
BCS-2505	5ml 1D-coded Cryo Tube, External Thread, self-standing, 500 tubes per case

Accessories	
BCS-213MC	Cryo Tube Grippers
BCS-222	Cryo Tube Locking Racks

Cooling Workstation, Single Capacity ice-free cooling systems	
BCS-504	Cooling Workstation Open Platform, Single Capacity purple
BCS-502	Cooling Workstation, Single Capacity purple
BCS-502G	Cooling Workstation, Single Capacity green
BCS-502O	Cooling Workstation, Single Capacity orange
BCS-502PK	Cooling Workstation, Single Capacity pink
BCS-503	Cooling Workstation, Double Capacity purple
BCS-503G	Cooling Workstation, Double Capacity green
BCS-503O	Cooling Workstation, Double Capacity orange
BCS-503PK	Cooling Workstation, Double Capacity pink
BCS-575	Cooling Workstation System, pre-assembled for use with 24 cryo tubes

Alcohol-free, controlled-rate cell freezing containers	
BCS-405	Cell Freezing Containers for 12 × 1mL or 2mL Cryo Tubes purple
BCS-405G	Cell Freezing Containers for 12 × 1mL or 2mL Cryo Tubes green
BCS-405O	Cell Freezing Containers for 12 × 1mL or 2mL Cryo Tubes orange
BCS-405PK	Cell Freezing Containers for 12 × 1mL or 2mL Cryo Tubes pink
BCS-170	Cell Freezing Containers for 30 × 1mL or 2mL Cryo Tubes purple
BCS-170G	Cell Freezing Containers for 30 × 1mL or 2mL Cryo Tubes orange
BCS-170O	Cell Freezing Containers for 30 × 1mL or 2mL Cryo Tubes green
BCS-170PK	Cell Freezing Containers for 30 × 1mL or 2mL Cryo Tubes pink
BCS-406	Cell Freezing Containers for 12 × 3.5mL to 5mL Cryo Tubes purple
BCS-172	Cell Freezing Containers for 12 × 2mL Injectable Cell Therapy Ampules purple
BCS-262	Cell Freezing Containers for 6 × 10mL Injectable Cell Therapy Ampules purple
BCS-3105	Cell Freezing Container Filler Vials, 6 × 2mL
BCS-3106	Cell Freezing Container Filler Vials, 6 × 5mL
BCS-3107	Cell Freezing Container Filler Vials, 6 × 1mL

