

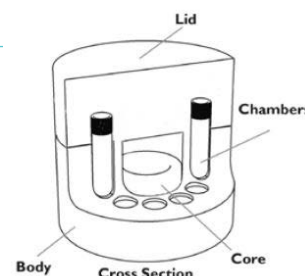
# Cell Freezing Containers



## Controlled-rate cell freezing container for 1.0 mL or 2.0 mL cryogenic vials

### Quick Start

- The 12 chambers and cryogenic vials should be dry to avoid tubes sticking upon freezing.
- Make sure the core (black ring) is at room temperature and seated in the bottom of the central cavity.
- Place sample vials containing 1.0 mL of cell suspension in each well. Each well should contain a filled vial. If the freezing batch is fewer than 12 vials, fill each empty well with a CoolLab Cell Freezing Container Filler Vials (2ml vial, part number BCS-3105) or other vial that contains equivalent volumes of freezing media.



*Note: Cell suspensions can be inserted into a room temperature cell freezing container and successfully preserved. For optimal results, the cell freezing container should be at the same temperature as your cell suspensions.*

- Check that the tubes slide in and out freely.
- Fully seat the lid on the cell freezing container.
- Place the cell freezing container upright into a  $-80^{\circ}\text{C}$  freezer or dry ice locker. Ensure that there is at least one inch of free space clearance around the cell freezing container.
- Freeze for four hours before transferring the samples to archive storage.

### Transferring Frozen Samples to Archive Storage

- Prepare an insulated pan or container with a one inch (2.5cm) layer of pulverized or pellet dry ice.
- Remove cell freezing container from the freezer and gently remove the lid using a gentle twisting and rocking motion
- Vial tops will be exposed once the lid is removed and the vials should be quickly extracted and placed onto the dry ice

### Special Notes

- Always use dry ice to transfer cryogenic vials containing cells to permanent storage to avoid temperature rise and cell damage. Cryogenic vial contents can rise from  $-80^{\circ}\text{C}$  to over  $-50^{\circ}\text{C}$  in less than one minute if exposed to room temperature air.
- It is strongly recommended that all frozen cell cultures be checked for viability before the stock culture is terminated.



# Cell Freezing Containers

## Recycling the Cell Freezing Container to Room Temperature

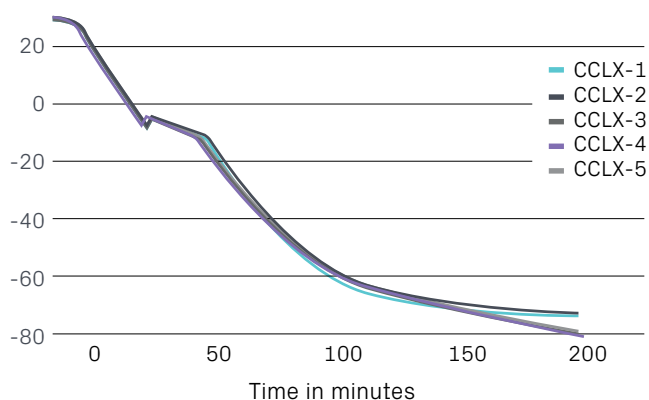
The cell freezing container is ready to freeze again as soon as the foam body and core (black ring) are at room temperature. To rapidly recycle the cell freezing container to room temperature, remove the center solid core ring. The cell freezing body and lid will return to room temperature in 10 to 15 minutes. Check that all chambers are dry. Dry the core ring before re-inserting into the central chamber.

## About Cell Freezing

The cell freezing container, in combination with a  $-80^{\circ}\text{C}$  freezer or dry ice locker, will provide the freezing rate of  $-1^{\circ}\text{C}$  per minute that is ideal for cryo-preservation of most cultured cell lines. The cell freezing container design uses a combination of insulation foam, radial symmetry, and a heat transfer core to regulate heat loss rather than using a large thermal mass (alcohol-based freezing container). As a result, freezing profiles are extremely consistent from one run to the next. Also, because of this low thermal mass, the cell freezing container will not cause a rise in local freezer temperature and will protect nearby samples already stored in the freezer. Low thermal mass also means the cell freezing container will rapidly return to room temperature for another freezing cycle (see fast recycle instructions above).

## Cell Freezing Container Performance

A temperature probe was placed into a 2.0 mL cryogenic vial containing 1ml of cryopreservative and the tube was inserted into a cell freezing container sitting at room temperature. The cell freezing container was then placed directly into a  $-80^{\circ}\text{C}$  freezer and the temperature rate and profile were observed over a 3 hour period. This experiment was repeated 5 consecutive times and temperature profiles were recorded.



*Conclusion: Cell Freezing container showed identical cooling profiles and phase transition over five consecutive freeze cycles.*

# Cell Freezing Containers



## Troubleshooting

Problem	Solution
Vials do not freely fit in the chambers	The Cell Freezing Container is designed to fit standard screw-top 1.0 mL and 2.0 mL cryogenic vials up to 13mm in diameter and up to 55mm in height. Check that flag style labels, if used, will not bind and hinder insertion or removal.
Vials are stuck in Cell Freezing Container after freezing	It is likely moisture was in the vial chambers or on the sample vial prior to freezing. Remove the core (black ring) and tap the Cell Freezing Container to dislodge vials.
The lid does not fully seat	Ensure that sample tubes are fully seated in the chamber. The maximum height of the tube is 55mm.

## Ordering Information

Item No	Description
BCS-405	Cell Freezing Container purple
BCS-405G	Cell Freezing Container green
BCS-405O	Cell Freezing Container orange
BCS-405PK	Cell Freezing Container pink

## Care and Cleaning

The cell freezing container is constructed of closed cell cross-linked polyethylene foam and a solid thermo-conductive core. The cell freezing container is compatible with prolonged cryogenic temperature exposure. The foam may be cleaned by water and mild soap. Rinse and dry thoroughly. The cell freezing container is resistant to alcohols and 10% bleach solutions. Do not autoclave. Maximum temperature exposure: 60°C. Avoid prolonged exposure to UV light sources.