

## Ultra-Low Temperature/Cryogenic Freezers

### 1. Definition:

- a. Ultra-low temperature/cryogenic freezers are designed to preserve biological samples at stable temperatures from -80°C down to -150°C.

### 2. Responsibility:

- a. Managers, Supervisors, or Principal Investigators shall ensure all users are trained properly, and that proper PPE is available.

### 3. Precaution:

- a. Since the freezers operate at low temperatures, the potential hazards and safety risks for operators include:
  - Frostbite
  - Slipping on wet floor
  - Electrical shock

### 4. Training:

- a. Managers, Supervisors, and Principal Investigators shall ensure that workers receive training in the following:
  - Specific instructions on how to use equipment safely.
  - Functioning of the backup system (if applicable), and how to ensure it is working properly.
  - Materials that are and are not compatible with cryogenics.
  - Use and care of personal protective equipment (PPE).
  - Good housekeeping practices.
- b. Before using the -150 freezer, new users must be trained by a Panasonic/ESBE service technician or by a previously trained and experienced user in TBEP. Contact [admin.tbep@utoronto.ca](mailto:admin.tbep@utoronto.ca) to arrange a training session.

### 5. Personal Protective Equipment:

- a. Loose fitting cryogen rated gloves should be used when handling materials in an ultra-low temperature/cryogenic freezer. They are also appropriate for other cryogen handling tasks.
- b. Closed toe shoes, a non-porous lab coat, and long pants must be worn.

### 6. Ultra-Low Temperature/Cryogenic Freezer Use:

- a. All samples/boxes should be labeled with contents, lab/user's name, and date. **DO NOT** put samples in freezer in bags. Samples **MUST** be in boxes. Boxes must be in assigned freezer racks.
- b. Know where your samples are stored **before** opening the freezer door. You must work quickly as the temperature in the interior increases quickly. Return the box to the same location in the freezer when finished.
- c. Check the door gasket and be sure that it is free of ice buildup. If there is considerable ice build-up in the -150, report it to [admin.tbep@utoronto.ca](mailto:admin.tbep@utoronto.ca); if there is ice buildup in a -80 freezer, report it to your lab manager or PI.

- d. Quickly close all doors making sure outer latch is closed properly. **Be careful your fingers are clear from the doors in order to avoid injury.**
- e. Note that the freezer may vacuum the door closed, and it may take several minutes until you are able to re-open the door.
- f. In the case of melting frost/ice accumulating on the floor, place paper towels on floor to soak up water and affix a sign to the freezer warning of the potentially slippery floor. Water/frost/ice must be immediately cleaned from the area to avoid injury and potential electrical shock.
- g. If the -150 freezer is in alarm, it must be immediately reported to [admin.tbep@utoronto.ca](mailto:admin.tbep@utoronto.ca) during working hours, or to MaRS Tenant Services at 416-673-8200. If a -80 freezer is in alarm, it must be reported to your lab manager/PI. Note that all ultra-low temperature and cryogenic freezers are monitored through the Rees monitoring system.