

How to Properly Defrost Your Research Freezer

1. Plan for 2 days of freezer downtime during this process.
 - Never move a freezer to a non-research space (e.g., balcony, corridor, office, etc.) for defrosting.
2. Before thawing, identify hazardous materials stored in the freezer. Follow the steps below for radioactive, biohazardous, and hazardous materials.

Radioactive material:

- If the freezer has been used to store radioactive material, collect some ice and test the sample with a liquid scintillation counter before relocating any freezer contents.
- If the melted ice registers greater than 3 times background (using tap water as your control), collect the ice as radioactive waste and label it for pickup by EH&S. If the freezer is contaminated, decontaminate it accordingly.
- See the Radiation Safety Manual for guidance, or contact the [Health Physicist](#) for your building.

Biohazardous material:

- If the freezer has been used to store biohazardous material, collect the ice and add 1 part bleach to 9 parts melted ice.
- Allow 20 minutes of contact time before pouring the melted ice down the drain (preferably in a fume hood).

Hazardous chemicals:

- Wipe down the unit if contamination is suspected or visible contamination is present.

3. Remove the contents of the freezer. Evaluate what to save and what to eliminate.
4. Unplug the freezer in the morning. This allows you to monitor runoff throughout the day.
 - Never use sharp objects to chip at the ice. Freezer walls are easily punctured by sharp objects, allowing coolant to escape and resulting in expensive repairs or replacement costs.
 - Never allow liquid to run directly onto floors creating a slip hazard, or down any outside drain (a potential regulatory violation).
5. Establish a wick and reservoir system to manage the melting ice:
 - Place a piece of bench paper (paper side down, plastic side up) inside the freezer, on the lower level and lead it into a large autoclave pan.
 - Surround the freezer and autoclave pan with paper towels or bench paper.
 - Manage contaminated ice and liquid according to instructions in step 2.
6. Clean the freezer inside and out with a 10% bleach solution (required if the unit was used for biohazard storage). Clean dirt and dust off the exterior coils, if you can access them, to extend the life of the freezer and save energy.
7. Plug in the freezer and wait for the desired temperature to be reached.

Questions? Contact the EH&S [Research Assistance Program](#) specialist for your building.