



Standard Operating Procedure: Freezer Store Maintenance

Document History

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1. Background

- This is an SOP for use in University of Sheffield Medical school bio repository describes the daily, monthly and yearly maintenance schedule for the RHH Freezer stores.
- All maintenance regimes should be recorded
- Maintenance records will form part of the quality management audits

2. Reagent Preparation

The detergent for cleaning should be made up following the manufacturer's instructions

3. Quality Assurance/ Control

- All freezers should be PAT tested. If the PAT testing sticker is out of date contact Steven Haynes to arrange for testing of the unit(s).
- The freezers should be operated between 5°C and 40°C. Failure to do so could result in malfunction of the freezers. If the temperature of the biorepository is outside of this temperature range contact Steven Haynes on X 59650 or Bradley's refrigeration on 0114 236 9971.
- At least 10cm should be left around each unit to allow adequate ventilation of the units.

4. Freezer Temperature trend monitoring:

The Tutela system will be used Bi-monthly to review temperature trends for freezers, observing if there is a trend indicating freezer failure i.e Increase in temperature over time. Copies of Tutela graphs will be labelled (freezers Ref), person reviewing and dated. Electronic copies will then held on file for future reference.

If a trend is observed:

Increase in temperature

1. Review freezer maintenance to ensure filters are cleaned.
2. Move to Weekly monitoring of temperature trend.
3. Freezer service to be arranged.

Decrease in temperature

1. Move to Weekly monitoring of temperature trend.
2. Freezer service to be arranged.

For the holding freezers with manual temperature monitoring daily records of temperatures will be taken and stored in an Excel spreadsheet. This will automatically update a graph so the trends can be observed overtime.

Where a trend is observed the same actions listed above will be followed.

5. Daily TEMPERATURE CHECK:

- Ensure the temperature of each unit is at the required level as best practice when entering the freezer store. The freezers and ambient temperatures are recorded via the Tutela monitoring system automatically.
- If the temperature is outside of expected range (the alarm will be sounding to indicate this, unless it has been muted) perform the following checks before calling an engineer:
 - Check when the freezer was last accessed using the record sheet on the freezer door. Prolonged opening of the freezer door will cause the temperature to rise and the alarm to sound. This is not a problem and the correct temperature will be obtained if the freezer door is kept closed.
 - Ensure the unit is plugged in and the power to the unit is functioning. If there is no power contact Steven Haynes on x59650.
 - See if the freezer is over filled. If this is the case reduce the load of the freezer.
 - If the ambient temperature is outside of range (status 1 warning message will be displayed) check the air conditioning unit is functioning correctly. If this is the case contact Steven Haynes.
 - The latch on the inner or outer door to the unit is not closed completely. If ice is causing the doors not to close properly see the monthly checks section below on how to correct this.
 - Check if the air intake vent is blocked. If it is remove the obstruction.
 - Check the condenser filter to see if it is blocked. See the monthly checks section below on how to correct this.
 - The inner door is not installed correctly. See the monthly checks section below on how to correct this.
 - The set temperature is incorrect (freezer alarm will not be sounding in this instance). Set correct temperature.
- If the above checks do not highlight the cause of the temperature change then an engineer should be called.
- The Ambient temperature of the facility should be checked and recorded on the sheet. Reading from three sites within the facility will be recorded. If temperatures is above 30°C then contact Steven Haynes.

Status Messages and Warning lights

- The freezer unit will monitor its running status and display any errors in the form of status messages. These messages indicate a

deteriorating freezer status which is likely to lead to freezer failure. The status light will be lit in this situation but no alarm will sound.

- Status message 1. Ambient temperature outside of range. This indicates a failure of the room's air conditioning unit and Steven Haynes should be contacted.
- Status message 2. Low voltage to freezer. The units should have a dedicated power source to prevent this message being displayed.
- Status message 3. Notice of overload condition. This is likely to happen when a large amount of material is stored. Check the ambient temperature, voltage and sealing of outer and inner doors. If all of these look OK then reduce the amount of material stored in that unit, otherwise cooling performance will be decreased.
- Any warning lights should be recorded on the sheet kept on the door of the freezer.

6. Weekly

Cleaning the facility

- The floor should be swept and mopped, the cleaning solution should be made up following the manufactures instructions.
- Record on the facility maintenance sheet.

7. Monthly

Cleaning of the Cabinets

- 1) Use a dry cloth to wipe off dirt from the outside and inside of the freezer.
- 2) Use diluted neutral dishwashing detergent if necessary, wipe detergent off with a damp cloth then wipe with a dry cloth.
- 3) Never pour water onto the unit.
- 4) Record on sheet kept on the door of the freezer.

Cleaning of the condenser filter

- The unit is fitted with a filter check light on the control panel. Clean the filter when the lamp lights. Clean the filter once a month even if the light is not lit.
- Open the grille covering the filter by pulling it towards you. This is situated at the bottom left hand corner of the freezer.
- Take out the condenser filter.
- Using the Vacuum cleaner provide clean the filter. If necessary wash the filter in water and dry before replacing.
- Replace filter and grille.
- Check that the filter check light is off if it had previously been illuminated.
- Record on sheet kept on the door of the freezer.

Defrosting the inner wall of the Freezer

- Frost is liable to build up at the upper portion of the freezer and on the inner doors. Excessive frost could cause a poor seal between the door gasket and freezer causing poor cooling.
- DO NOT use any sharp tools for removing frost.
- Transfer freezer contents to back up freezer.
- Turn off power to freezer.
- Open outer and inner doors. Remove inner door by lifting it up off its mountings.
- Allow frost to thaw and wipe resulting water up with a dry cloth.
- Switch freezer back on and allowed to reach desired temperature before replacing the contents.
- Record on sheet kept on the door of the freezer.

8. Annually

- CO2 monitor calibrated
- Air conditioning units serviced bi annually (estates responsibility)

8. Associated Documents

	Document	Document Reference
1	Freezer record	BIO:FORM:02
2	Facility maintenance	BIO:FORM:03
3	Facility Temperature record	BIO:FORM:04
4		
5		
6		
7		