UMassAmherst | Environmental Health & Safety

Cold Room Maintenance

Cold rooms are an essential component of many biomedical research laboratories, and are used for temperature-sensitive storage and incubation. Cold rooms often have high humidity conditions coupled with lower temperatures (condensation). These rooms need regular maintenance to avoid the growth of mold.

Mold spores are naturally occurring and are found outdoors and indoors. Mold needs 3 conditions to grow: a moisture source, the right temperature range and an appropriate food source. Look for signs of water damage (e.g. water stains, peeling paint) and of high humidity (e.g. condensation on surfaces, rusty cans). Mold often appears as small dark (brown or black) spots in the early stages but some types of mold are white in color.

Procedure:

1. Maintain the relative humidity to < 50% if possible. Turn OFF any unnecessary humidification. Consider installing a fan to increase air circulation in the interior
2. Do not use volatile or flammable materials in the cold room as the air is usually recirculated and not vented to the exterior. Fans in cold rooms are generally not explosion proof.
3. Remove any unnecessary sources of water (e.g. containers of water that are not used anymore). Clean up all spills promptly.
4. Report any leaks, water intrusion, etc.
5. Ensure that the door is shut tightly to prevent water condensation inside the cold room.
6. Access to the cold room should be minimized in summer months (e.g. planning work so as to reduce the number of in/out trips, nominating a single person access where feasible, etc.).
7. For cold rooms that require more frequent access, consider installing a plastic curtain near the door to reduce air mixing when the door is open.
8. Consider using a refrigerator for more frequently used items and restocking it when needed.

9. Avoid storing paper, books, cardboard, textiles, or other porous materials inside the cold room. Store files in plastic bins.
10. Avoid items from being in contact with the walls (e.g. leave a 1 inch gap). Avoid storing items directly on the floor.
11. If paper (e.g. Kim Wipes) must be stored inside the cold room, place them in a re-sealable plastic container.
12. Avoid using wooden furniture (e.g. shelves) in cold rooms. Use non-porous materials with a smooth surface (e.g. metal shelves). Also consider the use of wire shelving to promote air circulation. Plastic shelving units can be scrubbed clean of mold with soap and water but some plastic shelving units have a pitted design which make it difficult to scrub clean.
13. Routinely wipe down surfaces (e.g. walls, containers, shelving units, equipment, bench tops, etc.) with soap and water to prevent mold growth. If there is mold present, contact your property manager.

14. **Cautions & Considerations**

No  X

Yes  ✓

If you see mold growth or water issues:

- Report your concerns to the principal investigator (PI)
- Your PI (or designee) will then contact the Solutions Center (413-545-6401)

For urgent water intrusion episodes (e.g. flood, plumbing leaks, backed up sewers, etc.), call 413-545-6401 for immediate assistance.

Resources

- Biosafety Manual

- BMBL 5th Edition
- University of Toronto