**Standard Operating Procedure**

**Cold Rooms and Walk-in Freezer Operation and Maintenance**

Print a copy and keep with your
*Chemical Hygiene Plan* and/or *Lab Safety Resources Binder*
**Effective Date:**

|  |  |
| --- | --- |
| **Department:**  | Click here to enter text |
| **Date SOP was approved:** | Click here to enter a date. |
| **Department/Unit Head:** | Click here to enter text. |
| **Environmental Health and Safety Review:** | Initials?. |
|  |  |
| **Emergency Contact:** | Click here to enter text. |
| **Phone:** | Click here to enter text. |
|  |

**Table 1. Department/Group cold room assignments.**

|  |  |  |
| --- | --- | --- |
| Room | Responsible Person | Set Temperature (°C) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

**Type of SOP:** **X** Process ☐Hazardous Chemical ☐Equipment

1. **Purpose**

This document provides instructions on the use and maintenance of cold rooms and walk-in freezers in the Click here to enter text building. It serves to ensure that workers recognize and manage associated hazards and risks involved. It also provides a training document for workers.

**2. Procedure/Scope:**

1. Contact facilities services to set the temperature, never change the temperature on your own.

2. If the room has an alarm, work with the facilities alarm shop to set up a temperature range for the alarm. Typically, the alarms are not audible, but go to public safety who contacts the lab user. If public safety calls regarding the alarm, you need to visually check the room within 48 hrs and contact facilities if needed.

3. Maintain the relative humidity at < 50% if possible. Turn OFF any unnecessary humidification. Consider installing a fan to increase air circulation in the interior.

4. 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. Be aware that gases such as liquid nitrogen are asphyxiants, and minimize evaporation of such gases while working.

5. Remove any unnecessary sources of water (e.g. containers of water that are not used anymore). Clean up all spills promptly by following the spill response information in section

6. Report any leaks or water intrusion.

7. Ensure that the door is shut tightly to prevent water condensation inside the cold room.

8. 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.).

9. 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.

10. Consider using a refrigerator for frequently used items and restocking when needed.

11. Avoid storing paper, books, cardboard, textiles, or other porous materials inside the cold room, as mold will grow on these materials over time. Store files in plastic bins.

12. Avoid items from being in contact with the walls (e.g. leave a 1 inch gap). Avoid storing items directly on the floor.

13. If paper (e.g. kimwipes) must be stored inside the cold room, place it in a re-sealable plastic container.

14. 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.

15. Routinely wipe down surfaces (e.g. walls, containers, shelving units, equipment, bench tops, etc.) with soap and water to prevent mold growth. If mold is present, contact the person responsible for the space (see Table 1). Contact EHS for recommendations on how to clean up mold.

**3. Physical & Chemical Hazards**

Cold rooms do not have ventilation systems; therefore, time spent in a cold room should be limited. Fresh air only enters the room when the door is opened and closed. Therefore, exposure to hazardous materials due to spills or vaporization poses occupants potential health and safety hazards.

**4. Safety Data Sheet (SDS) Location**

Online SDS can be accessed at (<https://oregonstate.scishield.com/> .

**5. Personal Protective Equipment (PPE)**

For handling tools and cold/frozen materials, cold-resistant and/or waterproof gloves are recommended. Eye protection is required when handling chemicals such as liquid nitrogen. Closed-toed shoes are required at all times.

**6. First Aid Procedures**

If an accident happens the following documents must be completed:

* Online OSU HR Advocate Public Incident Reporting Form within 24 hours of the incident
* If the employee’s incident resulted in the need for medical treatment, have the employee complete the worker section of the SAIF 801 Form and fax to risk management at 541-737-4855 within 24 hours.

**If inhaled**

*Move to fresh air. If the person is not breathing, give artificial respiration. Avoid mouth to mouth contact. Call 911 from a phone. Call EHS at 541-737-2273 after emergency services have been contacted to report the incident.*

**In case of skin contact**

*Immediately (within seconds) flush affected area for at least 15 minutes. Remove all contaminated clothing. Call 911 immediately. Call EH&S at 541-737-2273.*

**In case of eye contact**

Use eye wash to flush eyes for 15 minutes. Call 911. Follow safety instruction for further assistance: <http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/eyewash_and_safety_shower_si.pdf>

**If ingested**

Do not induce vomiting. Contact 911 and/or poison control center if swallowed: 1(800)222-1222

**OSU Chemical Spill Safety Instruction**: <http://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/spill_response-chemicals_si.019.pdf>

**General Guidelines**

**For spills less than 1 gallon in size, low hazard chemicals:**

Preparation: Ensure employees have adequate Personal Protective Equipment and spill control materials before attempting to clean up a spill

1. Assess the magnitude of the spill and the associated hazards (broken glass, toxic fumes, risk of fire, etc.).

2. If the hazards can be safely mitigated with available personal protective equipment (PPE), do so. This includes informing co-workers of the spill, removing ignition sources, and moving equipment that may be damaged by the spilled chemicals. (Note: If the spill is more than 1 gallon of liquid or 1 pound of solid, contact Public Safety at 541-737-7000 and ask them to notify EH&S.)

3. Once all hazards have been assessed, put on appropriate PPE (respiratory protection, goggles, body protection, gloves, impervious shoes/boots, etc.).

4. Apply the Pig Pads to the spill and give the pads time to absorb the chemical.

5. Use gloves and cardboard to move the used Pig Pads to a garbage bag.

6. Seal the garbage bag with a zip tie and label the bag with a Hazardous Waste Label.

7. Place the garbage bag in secondary containment (a cardboard box or plastic tote/bin) labeled “Hazardous Waste.” Place the box in a location in the laboratory where EH&S personnel will easily find it.

8. Request a Hazardous Waste Pickup (<http://oregonstate.edu/ehs/waste>).

9. Replenish you spill kit’s contents immediately.

**For spills greater than 1 gallon in size, high hazard chemicals:**

1. In general, if a chemical spill is greater than 1 gallon in volume or is a particularly hazardous material (strong acid or base, carcinogen, highly reactive chemical, etc.), call Public Safety (541-737-7000), and tell them to contact the on-call EH&S personnel to respond to the spill.

2. Provide the following information:

o Your name and contact phone number

o Location of the spill (Building and room number)

o Approximate volume of spilled liquid

o Name of chemical

3. Do not attempt to clean up large and/or hazardous chemical spills.

4. Notify all other workers who could be affected by the spill and vacate the laboratory/floor/building, particularly if the chemical produces hazardous fumes or poses other potential health hazards.

5. Wait at the building entrance for EH&S personnel.

6. Serve as a point of contact and provide information about the spill, as requested by EH&S personnel.