

Fire Prevention

Fire prevention is the best way to fight fires. Fire prevention is everyone's responsibility. If you notice a fire hazard report it to your manager immediately. To ensure and promote a safe workplace, each and every employee should adhere to the following fire prevention measures.

General Hazards

- Keep all hallways, aisles and corridors free from obstructions
- Ensure that all fire doors remain closed at all times. Doors should never be propped open.
- Smoking is a major cause of fire related deaths. Many fires are caused by careless smoking practices.
- Avoid placing combustible materials directly in contact with electrical outlets, or electrical panels.
- Fire sprinkler heads are not meant to be used as hangers, or points to fasten objects. A minimum clearance of 18" should be maintained from all sprinkler heads.

Electrical Hazards

- Disconnect all electrical appliances with heating elements after each use, or at the end of the workday.
- Electrical wiring that is defective, frayed, or cracked must be replaced.
- Extension cords are designed for temporary use only. If they are to be used, they should be free from damage and protected from physical damage. Never run extension cords under mats or carpets.
- If a circuit breaker consistently "trips" discontinue using the device that is causing the circuit to trip. Only a certified electrician should assess and repair problems in the electrical distribution system.
- Circuit breaker panels shall not be covered or obstructed by stored material.

Storage Areas

- Storage areas should be kept clean and free of debris.
- Material should not be stored near an electrical outlet.
- Electrical equipment and devices should not be operated, or connected to an electrical source in a storage room.
- Service rooms should not be used for storage.

Flammable and Combustible Liquids

Due to some of the inherent hazards in a lab environment, additional fire safety measures must be observed at all times. Flammable liquids, compressed gases, oxidizers, and a lengthy list of other chemicals can prove to be deadly in the event of a laboratory fire. The best defense against these hazards is prevention and safe operating procedures.

Flammable Storage Regulations:

The Ontario Fire Code includes regulations for storage and handling of flammable and combustible liquids. Please observe the following regulations within your laboratory:

- Chemicals should **NEVER** be stored in alphabetical order without consideration for chemical compatibilities. This system may contribute to the probability of incompatible

materials being stored next to one another (e.g., butadiene next to bromine or chlorine). Incompatible reagents should not be stored next to each other.

- Flammable liquids may be stored in containers of up to 5L in volume. Metal containers (ULC approved) of up to 25L are also acceptable.
- Approved glass or plastic containers (those the liquid was shipped in) of up to 5L in size are permitted ONLY if metal containers would cause a chemical reaction or would affect the liquid's purity. Otherwise, glass or plastic containers may not be used for volumes greater than 1L.
- The maximum volume of flammable AND combustible liquids permitted in any given laboratory is 300L; of which only 50L may be flammable, (this means you can have up to 50L of flammable liquids in the "open lab" area). Storage of quantities in excess of this within labs MUST be within approved metal "flammable liquids" cabinets.
- Flammable liquid storage cabinets may contain up to 500L of flammable AND combustible liquids, of which 250L may be flammable.

Other Requirements:

- ALL storage containers containing flammables MUST be labelled with a conspicuous flammable symbol or wording
- Flammable storage cabinets MUST be labelled to indicate that the cabinet contains flammable materials, and that open flame must be kept away
- Storage outside of the cabinet should be limited to materials used in the current process.
- The vent cap on chemical storage cabinets should not be removed unless the cabinet is attached to an approved ventilation system.
- If a cabinet is connected to a ventilation system, the connection must have either a thermally actuated damper or sufficient insulation on the vent piping to avoid compromising the fire protection ability of the cabinet.
- Glass containers should be stored on the bottom shelf of storage cabinets.
- When dispensing flammable liquids, use proper bonding and grounding techniques (in the case of non-conductive containers, other measures to minimize static buildup must be taken)
- All refrigerators, freezers or other cooling units must be labeled with appropriate hazard signs to indicate whether it is suitable for storing hazardous chemicals. Label chemical hazard refrigerators with the sign "For Chemical Storage Only. No Food or Drink Allowed."
- If radioactive materials are to be stored, a refrigerator must be clearly labeled "Caution, Radioactive Material. No Food or Beverages May Be Stored in This Unit."
- The containers placed in the refrigerator should be completely sealed or capped, securely placed, and labeled. Avoid capping materials with aluminum foil, parafilm, corks, and glass stoppers.
- Refrigerators should be frost free to prevent water drainage.

For more information contact:

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