Lab Coat Guidelines

1. Introduction

Making sure that the University is a safe and healthy workplace is the right and responsibility of everyone working at the University. Furthermore, the Ontario Occupational Health and Safety Act require employers and supervisors to 'take every precaution reasonable in the circumstances for the protection of a worker'. The Act requires supervisors to ensure that a worker 'uses or wears the equipment, protective devices or clothing that the worker's employer requires to be used or worn.'

Lab coats are protective equipment that must be worn whenever and wherever hazardous materials are being used in the laboratory including chemicals, biological materials, and radioactive materials. Laboratory coats are intended to protect against minor splashes or spills, and to minimize contamination of street clothing with materials used in the laboratory. Laboratory coats must be made of material suitable for the work environment, the materials handled and the tasks performed.

2. Application

This document applies to any University of Toronto employees, students, Postdoctoral Fellows, visitors, and volunteers that enter a University of Toronto wet lab, where their activities in the lab put them at risk of chemical, biological or radiological contamination.

3. Definitions

Lab User: Any individual that assigned to a lab in order to conduct laboratory activities, or to supervise other lab users.

Lab Visitor: Any individual in the lab who is not a Lab User.

Personal Protective Equipment (PPE): Equipment or clothing that is intended to protect the wearer from specific hazards.

Wet Lab: A Wet Lab is any lab where chemical, biological or radioactive materials are used.

4. Responsibilities

4.1 Directors, Department Heads

It is the responsibility of Directors and Department Heads to ensure employees are aware of these guidelines.

4.2 Principal Investigators (PI) and Lab Managers

Principal Investigators and Lab Managers must determine applicable personal protective equipment (PPE) requirements based on health and safety hazards in the laboratory. The Office of EHS can assist with evaluating hazards and PPE requirements.

Any University of Toronto PI that supervises wet lab space are responsible for:

a) ensuring that any employees or students they supervise receive appropriate laboratory safety training which includes a component on PPE, receive specific instructions and procedures related to their lab environment;

b) conducting local risk assessments to determine when and where lab users and lab visitors are at risk of physical contact exposure, and the protective equipment that would be required;

c) advising lab users of the existence of any potential or actual danger to the health or safety; and

d) ensuring that a lab user works in the manner and with required PPE, measures and procedures required.

4.3 Employees and Student Lab Users or Lab Visitors

It is the responsibility of any University of Toronto lab users or lab visitors to adhere to the procedural requirements specified within their lab environment. In addition lab users shall:

1) Use or wear lab coats and any protective devices or clothing required to be used or worn;
2) Report to his or her supervisor the absence of or defect in any equipment or protective device of which the user is aware and which may endanger himself, herself or another lab user.

5. Lab Coat

A lab coat must:

a) Be appropriate for the materials in use and activities in labs. Select the coat/gown based on hazards used in the laboratory. For example, a fire resistant coat is recommended for work with pyrophoric or flammable material;

b) Fit properly;

c) Be properly fastened ideally with snaps;

d) Have sleeves that properly cover the arms to the wrist (Short sleeved lab coats are not permitted for wet lab use);

e) Be removed when leaving the wet lab (with the exception of situations where there is a need to carry materials through a hallway to another working lab).

Notes

- If there is a hazard from lab coat sleeves becoming entangled / catching on equipment, lab coats with knitted/elasticised cuffs may be purchased and should be in accordance to specific machine guarding safety.
- A lab coat should never be rolled up to expose any portions of the hand or arm that is not already protected by an appropriate glove.

5.1 Choosing the right lab coat

Lab coats are offered in a variety of fabric and blend and are not suitable for all activities. Lab coats are laboratory environment specific and could also be experiment specific such as using pyrophoric materials.

1) Synthetic/Cotton Blends: 100% Polyester, 80/20, 65/35 and 40/60 polyester/cotton blend lab coats are the most common lab coats and are good for clinical settings and labs handling biological materials. They are the most combustible and are not considered appropriate for working with flammables should never be used while working with pyrophoric materials. 100% polyester and 80/20 blend lab coats are **NOT recommended for chemical laboratories**, however65/35 and 40/60 polyester/cotton lab coats are generally suitable for chemical research laboratories.
2) 100% Cotton: comfortable, superior to synthetic blends for fire-resistance, and are a good affordable compromise for chemical safety than the more expensive Fire Resistant lab coats. However, these are less resistant than blends and are degraded by acids. 100% cotton is the **standard undergraduate lab coat**.
3) Flame Resistant treated lab coats: These more costly lab coats are better for labs with significant fire hazard, with an understanding of the limitations for flame resistance. Generally will not lose flame resistance with laundering over typical use life, specific manufacturer recommendations must be followed.
4) Dupont Nomex®**:** These flame resistant lab coats are more expensive, but good for lab environments where there is a risk of arc flash or flash fire, and recommended for working with pyrophoric materials.

5.2 Lab Coat Cleaning and Disposal

5.2.1 General Lab Coat Cleaning

Lab coats should be washed according to lab activities. Nomex® and Fire Resistant lab are not compatible with bleach.

It is recommended to:

1) Have a dedicated on-site facility; or
2) Off-site by a contractor who was informed of potential hazards.

Note: If no washing option is available and if allowed by a local risk assessment, lab coats should be double bagged for home transportation and laundered separately.

5.2.2 Chemical: Cleaning and Disposal

Contaminated lab coats should be discarded following hazardous waste disposal and not washed if contaminated by:

1) Strong acids or concentrated corrosives;
2) Materials that pass through Nitrile gloves (e.g. organometallics like methyl mercury); or
3) Greater than 250 mL of:
    a) Carcinogens;

b) Teratogens;

c) Toxic materials with an LD50<50mg/kg.

If the spill does not meet any of the above conditions a coat may be washed and reused.

5.2.3 Biological: Cleaning and Disposal

Where a known or suspect contamination/spill from ANY biological agent occurs (regardless of Risk Group Assessment Level), any contaminated clothing and the lab coat must be decontaminated by autoclave or treated with an effective decontaminant before laundering.

1) Lab coats should not be autoclaved if they are additionally contaminated with:

   a) Chemicals; or

   b) Radioactive material.

5.2.4 Radiation: Cleaning and Disposal

If a spill on the lab coat involves radioactive material, inform the Radiation Safety Officer (RSO) immediately, put the lab coat in a sealed bag a give it to the RSO directly.

6. Lab Coat Availability

Lab coats are offered in a variety of fabric and blend. Lab user should choose the appropriate one according to laboratory activities and in consultation with the laboratory supervisor, or departmental policy. Lab coats are available at:

1) The University of Toronto Bookstores at the St. George, Scarborough and Mississauga campuses;
2) The University of Toronto Chemical Stores;
3) The University of Toronto Medical Stores, and;
4) Other laboratory suppliers.