



Faculté des sciences et de génie
Département de génie chimique

SAFETY RULES AND GUIDELINES FOR RESEARCH LABORATORIES

December 2017

In an emergency, call **911** (on internal phones)

Introduction

The federal *Hazardous Products Act* and the provincial *Occupational Health and Safety Legislation* include principles for the safe use of hazardous materials.

At Laval University, three committees are responsible to meet these laws and regulations:

- The Radioprotection Committee;
- The Chemical Safety Committee;
- The Biohazard Safety Committee.

In accordance with the laws, these committees have an obligation to inform users of potential risks while working with controlled substances. In particular, the *Chemical Safety Committee* runs the WHMIS (**W**orkplace **H**azardous **M**aterials **I**nformation **S**ystem) program, which requires:

- Proper labeling of controlled substances;
- Material safety data sheets for all chemicals in the laboratory;
- User training.

This committee also monitors the safe and sensible use of chemical products and controls the disposal of waste chemicals.

In the Faculty of Science and Engineering, WHMIS training is mandatory for all people who work in paid positions in laboratories.

To complement and support the efforts that are already underway, this document provides rules and guidelines for safe working conditions in laboratories within the Department of Chemical Engineering. Guidelines either complement or spell out rules that are summarized here.

Disciplinary measures

The following disciplinary measures will be applied in cases of repetitively not wearing mandatory personal protective equipment and/or repetitively not following safety rules:

- 1st offense to the research professor for follow-up with student/research personnel
- 2nd offense to the research professor for action plan to address the issue
- 3rd offense to the research professor and to the Health and Safety Director

If requested by research professors, the department technician will conduct special laboratory inspections.

RULES	GUIDELINES
<p>Student must assist in MANDATORY safety trainings and meetings.</p>	
<p>Access to laboratories is limited to authorized students and personnel only.</p>	<p>Family members (children, relatives) are not permitted in laboratories unless authorized in writing by the Department Head.</p>
<p>You must not work alone in the laboratory.</p>	<p>Let someone nearby, who has the ability to respond rapidly, know that you are in the laboratory in case of an accident.</p> <p>After regular hours (between 5pm and 7am), seek supervisor's approval and notify a relative of your work schedule and area.</p> <p>In the case of an emergency or accident, take reasonable measures in the safest manner possible, and then call 911 on internal phones or 418-656-5555 on other phones.</p>
<p>In the laboratory,</p> <ul style="list-style-type: none"> a) It is mandatory to wear safety glasses/overglasses, a lab coat (worn closed), closed shoes and long pants. b) Contact lenses are PERMITTED with safety glasses but discourage when working with volatile substances. c) Laboratory doors must remain closed at all times. 	<p>In the laboratory,</p> <ul style="list-style-type: none"> • The lab coat (preferably white, 100% cotton) must be properly button-up (with snap buttons) and in good repair. • For people wearing prescription glasses, safety overglasses are mandatory. • Open-toe shoes, sandals, short pants and capris are FORBIDDEN. • Long hair must be tied back.

RULES

GUIDELINES

- Before using any chemicals, read the MSDS to:
 - Understand and identify hazards and possible risks of its use, wear the recommended specific protective equipment like face shield, apron, chemical resistant gloves and any other protective equipment.
 - Plan your use of the equipment and space in the lab.
- Check that the fume hood is working properly and keep the sash down whenever possible. Work 6 inches inside the fume hood. Keep only the required equipment under the fume hood.
- When entering the laboratory, first check that the eye safety shower is working properly (minimum once per day).
- Substances that are toxic, corrosive, explosive, volatile, or emit vapours or particles must be handled under the fume hood only.
- Always take reasonable safety precautions for all procedures in the laboratory.
- Before you begin work in a new laboratory, make yourself familiar with the safety equipment and its location, including safety showers, eye wash station, fire blanket, fire extinguisher, telephone, and first aid kit.
- Do not behave in a way that will distract, alarm, or annoy your colleagues in the laboratory.

RESEARCH LABORATORIES

RULES	GUIDELINES
<p>It is forbidden to eat, drink or to store food in laboratories.</p>	<p>It is forbidden to use reagents (ex. NaCl, glucose) or glassware for personal use.</p>
<p>Coats, boots and bags must be left outside the laboratory.</p>	<p>The work surface must remain CLEAN AND UNCLUTTERED.</p> <p>Use the MINIMUM amount possible of chemicals for each experiment.</p> <p>Thoroughly clean all work surfaces and instruments at the end of the day and each time that you work with dangerous chemicals.</p> <p>PUT AWAY all equipment that is not in use.</p>
<p>IMMEDIATELY REPORT all accidents and spills to the Security Department by dialing 911 on internal phones or 418-656-5555 on other phones.</p>	<p>All broken and defective items must be reported to the supervisor or to an appropriate specialist (the machine shop, electronics, or to repair services by dialing 7000). You must not modify the electronic equipment, electrical circuits, or electrical appliances.</p> <p>Report accidents and spills to your supervisor or the department head.</p> <p>In an emergency or accident, take reasonable measures, and call 911 on internal phones or 418-656-5555 on other phones.</p>
<p>All waste must be disposed of in appropriate WASTE CONTAINERS.</p>	<p>Place all broken glass in GLASS BINS.</p> <p>All needles, sharp objects (blades) must be disposed of in BIOHAZARDS BINS (yellow).</p> <p>All used chemicals must be disposed of in the PROPER CHEMICAL WASTE CONTAINERS AND PROPERLY IDENTIFIED (halogen and nonhalogen solvents, acids, bases, and solids).</p>

RULES	GUIDELINES
	DO NOT LEAVE chemicals in the glassware after complete use. RINSE with the appropriate solvent and throw all residues in the appropriate chemical waste container.
It is FORBIDDEN to pipette by mouth .	
Cellular phones and headphones are forbidden in laboratories.	
All gas cylinders , regardless of their size, MUST BE SECURELY FASTENED , maximum 2 per chain.	INSPECT and SECURELY FASTENED all gas and water hoses. Always move gas cylinders with a cart, cylinders must be chained to the cart.
All containers that hold chemicals or biohazard material must be LABELLED .	Labels on chemical or biohazard containers must include: <ul style="list-style-type: none">• the name of the product or its chemical formula (not an abbreviation);• user's name or initials;• appropriate warning such as FLAMMABLE, CORROSIVE, ACID, BASE, TOXIC, etc.;• date of purchase and/or use.

RULES	GUIDELINES
<p>Lab set-ups that are left unsupervised must be IDENTIFIED with the experimenter's name.</p>	<p>Unsupervised lab set-ups must also be identified with:</p> <ul style="list-style-type: none"> • the user's name or supervisor, and a telephone number in case of an emergency; • the contents of the lab set-up or explanations of the experiment in progress; • special warning such as FLAMMABLE, CORROSIVE, ACID, BASE, TOXIC, etc. • start date and estimated end date of the experiment. <p>Once the experiment is finished, all the equipment must be put away and turned off and countertops must be cleaned. Glassware must be RINSED. Before leaving the laboratory, all equipment must be OFF or CLOSED or PAUSED.</p> <p>WASH your hands frequently.</p> <p>REMOVE protective gloves and WASH your hands before you leave the laboratory and each time you handle chemicals or put on gloves.</p> <p>Leave your lab coat in the laboratory near the door or in your office.</p> <p>REMOVE your lab coat before you enter a food-handling area or handle food.</p>
<p>Chemicals must always be transported safely.</p>	<p>Use a stable trolley fitted with raised sides that are high enough to contain any spills. This will help to prevent slips and falls.</p> <p>Transport volatiles in hermetically sealed containers to prevent vapors or odours emissions or particulates.</p>

RULES	GUIDELINES
	<p>Always use the elevator when transporting chemicals and do not accept passengers. It is strictly forbidden to use stairs.</p>
	<p>Have your lab coat washed as soon as it gets dirty.</p> <p>When leaving the laboratory, make sure everything is secured, washed, put away and that lab doors are LOCKED.</p>



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I have read and understood the Safety Rules and Guidelines for Research Laboratories and I agree to comply with these rules.

Name (last, first) _____

Signature _____

Date _____

Research Professor _____

**Please sign this form and return it to the Department Administrative
(room PLT-3554A).**