Laboratory safety and chemical hygiene

The chemical hygiene plan, written to the elements of 29 CFR 1910.1450(e) and to the Ontario rules that apply (the Occupational Health and Safety Act, Reg. 833, WHMIS under Reg. 860, Reg. 347 for waste), the waste plan and the exposure and spill response: the hazards of every reagent and hot surface the procedures name, the protective equipment by task, the peptides as particularly hazardous substances, and the facts only the owner can supply, each marked.

Not yet approved

No approval of this revision is on file. This plan states the controls the procedures already require and marks every fact the owner has not supplied; it takes effect when a named reviewer approves it and the chemical hygiene officer is named.

Document		Laboratory	
Number	SAF-01	Name	Cupel Laboratories
Revision	1, first issue	Address	2599 Speakman Dr Mississauga, ON L5K 1B1
Status	Not yet approved		
Effective	Not yet in effect; takes effect when approved	Country	Canada
		Not on file	Not yet published: legal entity, postal address, telephone and country
Applies to	Every person and every procedure in the laboratory	Web	cupel.ca
Supersedes	Nothing; first issue	Email	help@cupel.ca
Fingerprint	ef14 1eef 4f05 02d9		

1 Purpose

This document is the laboratory's chemical hygiene plan, its waste plan and its exposure and spill response. The laboratory is in Ontario, so the rules that bind it are the Occupational Health and Safety Act and its regulations (Reg. 833 for exposure limits, Reg. 851 for the workplace, Reg. 860 for WHMIS), the Ontario Fire Code and Reg. 347 for waste. Ontario prescribes no chemical hygiene plan by that name, so the plan is written to the elements of the best-known model, 29 CFR 1910.1450(e), adopted as good practice: the laboratory uses hazardous chemicals on a laboratory scale, by one or two people, in procedures that are not part of a production process. The Safety section of each procedure (SOP-01 to SOP-06) is the standard operating procedure for the hazards of that work; this document holds what is common to all of them, the hazards of each substance in one table, the protective equipment by task, the waste streams, and what is done when something goes wrong.

The laboratory's own safety data sheet file, for the lot of each reagent actually bought, governs over every classification stated here. The classes in section 4 are those supplier safety data sheets state for the laboratory grades; where suppliers differ, the sheet in the file is the one to read.

2 Responsibilities

Role	Responsibility
Chemical hygiene officer	Keeps this plan, the safety data sheet file, the exposure log and the training records; approves the operations of section 5; reviews the plan each year; is told of every exposure and spill the same day. Named: not yet supplied (data.json safety.chemical_hygiene_officer).
Every person in the laboratory	Reads this document and the procedures' Safety sections before first work; wears what section 6 says; stops and records an exposure or a spill; may decline the open-powder steps under section 5.
The approver of this document	A named reviewer (org.people); none is named yet, so the document is not in effect.

Named: Timothy Ian Benedicto, Medical Laboratory Technician; Roxanne Manlapaz, Laboratory Technician.

3 Owner facts this document waits on

Nothing below is invented. Each fact is printed where the plan needs it, as “not yet supplied” until the owner sets it.

Fact	data.json key proposed	Status
The premises: building, room, its classification for flammable-liquid storage (Ontario Fire Code, O. Reg. 213/07, Division B, Part 4) and its ventilation rate	facility.premises	not yet supplied
The fume hood and the ventilated balance enclosure: installation, certification vendor, last certification date and face velocity	facility.hoods	not yet supplied
Nitrogen for the LC–MS and the Karl Fischer oven: cylinders or a generator; the cylinder store	facility.gas_supply	not yet supplied
The eyewash and safety shower: location, within 10 s of the trifluoroacetic acid and methanol work; the weekly test record	facility.eyewash	not yet supplied
The listed flammable-liquid cabinet and the acid cabinet	facility.flammables_cabinet	not yet supplied
The chemical hygiene officer, by name (one of org.people)	safety.chemical_hygiene_officer	not yet supplied
The occupational-health provider: name and telephone	safety.occupational_health_provider	not yet supplied
The nearest emergency department and the building’s emergency contact	safety.emergency_contacts	not yet supplied
The hazardous-waste contractor, the generator’s registration number in the Hazardous Waste Program Registry (or the small-quantity exemption relied on), the pick-up frequency, and the contractor’s profile for each stream (including the destruction of retained vials)	safety.waste_contractor	not yet supplied
Where the safety data sheets are kept (binder or system)	safety.sds_location	not yet supplied
Where the spill kit is	safety.spill_kit_location	not yet supplied
The Karl Fischer reagent family bought: halogen-free, or ketone-type with chloroform	safety.kf_reagent	not yet supplied
Whether a depyrogenation oven exists or certified pyrogen-free consumables replace it	safety.depyrogenation	not yet supplied
Whether formic acid is used at all (LC–MS mobile phases)	safety.formic_acid	not yet supplied
Who holds the exposure and medical records	safety.records_holder	not yet supplied
The policy for a person who is pregnant or planning to be, written into the plan	safety.pregnancy_policy	not yet supplied

Each key is proposed, not yet in data.json; lab/launch_facts.py lists the owner’s facts and can take these up. Until a fact is set the plan prints “not yet supplied” beside it and the element that needs it stays an owner fact.

4 Hazards and controls, by substance

The reagents and the equipment the procedures name. GHS hazard classes are given as supplier safety data sheets state them, with the H statements; the laboratory’s own safety data sheet file governs. Waste streams are those of section 7.

Hazards and controls, by substance, continued

Substance or source, where used	GHS hazard classes as supplier safety data sheets state them	Controls	Waste
Acetonitrile (mobile phase B: Acetonitrile, 0.1% trifluoroacetic acid; column storage; the fourth-rinse solvent of Semaglutide, tirzepatide and retatrutide)	Flam. Liq. 2 (H225); Acute Tox. 4 oral, dermal and inhalation (H302, H312, H332); Eye Irrit. 2 (H319). Ontario OEL 20 ppm TWA (Reg. 833). Metabolised to cyanide: symptoms of a large exposure are delayed by hours.	The 1 L mobile-phase preparation and every 4 L bottle transfer in the fume hood; bottles capped, in the flammables cabinet; nitrile gloves are a splash barrier only (minutes to breakthrough on immersion), changed at once when wetted; laminate (EVOH) gloves for any clean-up larger than a splash; HPLC waste in a closed container with a vented cap and the solvent lines through the cap, never an open funnel; no hot plate or the depyrogenation oven in the same hood or bench run.	(a) non-halogenated solvent
Trifluoroacetic acid (neat, for the mobile phases; 0.1% in every HPLC solution: Water, 0.1% trifluoroacetic acid)	Skin Corr. 1A (H314); Acute Tox. 4 inhalation (H332); Aquatic Chronic 3 (H412). Volatile and fuming.	The neat acid dispensed only in the hood, from a 1 mL ampoule where one is available; chemical splash goggles (not safety glasses) and butyl or neoprene gloves for the neat acid (nitrile breaks through quickly); stored in the acid cabinet away from bases; the 0.1% solutions (pH about 2) need safety glasses and nitrile only. Eye contact: 15 min at the eyewash, then medical attention.	(a), labelled acidic organic waste
Formic acid (only if adopted for the LC–MS mobile phases: not yet supplied (data.json safety.formic_acid))	Skin Corr. 1A (H314); Flam. Liq. 3 (H226); acute inhalation toxicity as the supplier states it (H331 or H332 by concentration). Concentrated formic acid decomposes slowly to carbon monoxide in a sealed bottle and pressurises it.	Open slowly in the hood; store below 25 °C with a vented cap where the supplier provides one; goggles and butyl or neoprene gloves for the neat acid.	(a), labelled acidic organic waste
Methanol (the Karl Fischer anolyte's solvent; vial rinses; the W2 rinse; column storage)	Flam. Liq. 2 (H225); Acute Tox. 3 oral, dermal and inhalation (H301, H311, H331); STOT SE 1 (H370: the optic nerve). Ontario OEL 200 ppm TWA, 250 ppm STEL (Reg. 833). Absorbed through the skin.	Anolyte changes and rinses in the hood or through the cell's closed waste line; nitrile is a short-term splash barrier, changed at once when wetted; flammables cabinet.	(a) non-halogenated solvent
Karl Fischer reagents (coulometric anolyte and, for a diaphragm cell, the catholyte; the water standard); the family bought: not yet supplied (data.json safety.kf_reagent)	A methanol-based anolyte: Flam. Liq. 2 (H225), Acute Tox. 3 (H301, H311, H331), STOT SE 1 (H370), with iodine, sulfur dioxide and a base (imidazole or an amine) that stain and irritate the skin and eyes (H315, H319 as stated). A ketone-type reagent carries chloroform: Carc. 2 (H351), STOT RE 2 (H373), Acute Tox. 4 (H302), Skin Irrit. 2 (H315), Eye Irrit. 2 (H319). Contact with acid releases sulfur dioxide.	The cell kept closed; the reagent changed with ventilation that keeps the vapour from the face; an acetate or trifluoroacetate salt in the oven can acidify the cell: the cell's exhaust ventilated; the SDS of the reagent actually bought read before first use; iodine stains and burns treated as chemical burns.	(a) if halogen-free; (b) halogenated if the reagent carries chloroform
LAL reagents (the lysate, a horseshoe-crab blood product, buffered, sometimes with a preservative) and the control standard endotoxin (purified E. coli lipopolysaccharide)	Not classified under GHS in most supplier SDS; the lysate is not infectious. The endotoxin is pyrogenic and inflammatory by injection or through broken skin or a mucous membrane, and not a hazard on intact gloved skin. The p-nitroaniline the chromogenic substrate releases is a dye at microgram amounts.	Gloves; cuts covered; never aspirate by mouth; a spill of control standard endotoxin wiped with water, then 70% ethanol; used plates and tips sealed in a bag; no autoclave needed.	(c), or as the contractor's profile says

Hazards and controls, by substance, continued

Tris (10 mM Tris, pH 7.8, LAL grade, the medium for Semaglutide, tirzepatide and retatrutide)	Not classified, or Skin Irrit. 2 (H315), Eye Irrit. 2 (H319) and STOT SE 3 (H335) as the supplier states for the solid.	Weighed with gloves and safety glasses; the solid kept from the eyes; aqueous Tris with no peptide may go to drain.	(e) to drain without peptide; (c) with peptide
Ethanol, 70% (the wipe for stoppers, spills and the oven's surroundings)	Flam. Liq. 2 (H225); Eye Irrit. 2 (H319).	The wipe bottle kept away from the depyrogenation oven and the Karl Fischer oven; capped.	(a), or evaporated wipes to (c)
Compressed nitrogen (the LC–MS drying and nebuliser gas, 5–15 L/min; the Karl Fischer oven's carrier gas): not yet supplied (data.json facility.gas_supply)	Press. Gas, compressed (H280). A simple asphyxiant: not a GHS health class, and the hazard that matters in a small room.	Cylinders chained upright, regulator fitted, cap on when moved, moved on a trolley, leak-tested with the supplier's method (CGA P-1; the Ontario Fire Code); the room's air changes and the cylinder size decide whether an oxygen monitor is required (owner fact: facility.premises); a generator brings compressor noise and its own maintenance.	none; an empty cylinder is returned
Depyrogenation oven at 250 °C (SOP-04): not yet supplied (data.json safety.depyrogenation)	A hot surface, not a substance: burns are the certain injury if the rule is not written.	Loads in metal racks or foil, never plastics; heat-resistant gauntlets; the door opened only below 60 °C (the cycle record shows the temperature); a hot sign on the door; the oven away from flammable solvents and the 70% ethanol bottle; the validated cycle (USP <1228.1>, endotoxin indicators) and its chart or logger record kept.	none
Karl Fischer oven and its transfer needle (SOP-05)	A hot surface: the block and the needle run at the method temperature (110–150 °C for this scope, up to 250 °C or more for a cleaning cycle); a vial pulled after a run is hot; a crimped vial heated with a wet septum can pressurise.	Tongs and a cooling rack; no re-crimping of a hot vial; the heated zone marked; the carrier-gas rules above, or the drying train's molecular sieve changed on schedule and recorded.	none
The electrospray source (SOP-03)	A hot surface and high voltage, not a substance: about 3.5 kV and 300–500 °C at the source; the housing stays hot for minutes after standby.	Opened or cleaned only in standby, as the manual requires; the divert-valve line into the closed waste; calibrant solutions handled as the solvents they are made in.	(a) for the divert line
Sharps: the venting needle through a stopper (SOP-05, SOP-06), the Karl Fischer glass syringe and its needle, the decrimper's cut shells, broken vials	A needle wetted with a 2 mg/mL stock carries about 2 µg of peptide per µL of film: a stick is a parenteral dose, the route these peptides are designed for.	A puncture-resistant sharps container meeting CSA Z316.6 at the balance and at the titrator; no recapping; one-handed technique; a needle never left in a stopper unattended (the rack marked); the decrimper taken out of service when it cuts the shell.	(d) sharps
Peptides of unknown potency (every sample and every reference standard; open powder only at the standard's weighing, SOP-06; stocks at 2 mg/mL)	No safety data sheet arrives with a vendor's vial. Everything in scope is a parenteral drug or drug candidate; several are active at 100–500 µg subcutaneously, the GLP-1 class at 0.25–2.4 mg a week. Expected effects of an exposure: nausea, vomiting, flushing, headache, a change in blood pressure (bremelanotide), hypoglycaemia in a person on insulin or a sulfonylurea (the GLP-1 class); the GLP-1 agonists and the melanocortins are contraindicated or unstudied in pregnancy. Where a manufacturer's SDS exists for a marketed peptide, its exposure limit is in the low µg/m³ range; no limit is claimed here.	Section 5: the particularly hazardous substances provisions.	(c) peptide-contaminated solid; (d) sharps

Hazards and controls, by substance, continued

Mobile phases as data.json names them: A, Water, 0.1% trifluoroacetic acid; B, Acetonitrile, 0.1% trifluoroacetic acid. The dissolution medium is LAL reagent water, or 10 mM Tris, pH 7.8, LAL grade for Semaglutide, tirzepatide and retatrutide.

5 Peptides of unknown potency: the particularly hazardous substances provisions

Every sample is a potent, biologically active substance of unconfirmed identity until its report says otherwise, and arrives with no safety data sheet. The peptides and the reproductive concern of the GLP-1 class are placed under 29 CFR 1910.1450(e)(3)(viii).

- Designated area: the ventilated balance enclosure and the fume hood. The one open-powder step the methods share, the reference standard's weighing (at least 10 mg, within 30 s of opening, SOP-06), is done in the enclosure or a hood with a draft shield; a sample's powder is never open: the vial is vented, decrimped and dissolved by mass in its own glass (SOP-06). No respirator programme is needed while the enclosure exists.
- Containment: double nitrile gloves for every stock at 2 mg/mL, the outer pair changed after any wetting; safety glasses; a laboratory coat with knit cuffs; no food, drink, cosmetics or contact-lens handling in the laboratory; hands washed on leaving.
- Decontamination: a spill of solution or powder is wet-wiped (water, then 70% ethanol), never dry; the bench paper changed after any wetting.
- Waste removal: everything that touched a peptide to stream (c); every needle, syringe, cut shell and broken vial to (d).
- Sharps and needle sticks: the venting needle stays in a stopper only for the minutes the procedure states and never unattended; no recapping; one-handed technique; the sharps container within reach at the balance and the titrator. A stick with a needle wetted with a stock is treated as a parenteral dose: bleed, wash, medical evaluation the same day (section 8).
- Prior approval by the chemical hygiene officer: the first use of a new peptide class; any heating of a peptide above 25 °C outside the Karl Fischer oven; any work with more than 100 mg of a peptide open.
- A person who is pregnant or planning to be tells the chemical hygiene officer and may decline the open-powder steps; the written policy is an owner fact (not yet supplied (data.json safety.pregnancy_policy)).

6 Protective equipment by task, and gloves by chemical

Task by task

Task	Eyes	Hands	Body	Where, and the rule
Receipt: opening the box (SOP-01)	Safety glasses	Nitrile, single	Laboratory coat, knit cuffs	Bench covered with absorbent, plastic-backed paper
Weighing the reference standard, open powder (SOP-06)	Safety glasses	Nitrile, double; outer pair changed after any wetting	Laboratory coat, knit cuffs	The ventilated balance enclosure or a hood with a draft shield; within 30 s of opening
Venting, decrimping and dissolving a vial; handling a stock (SOP-05, SOP-06)	Safety glasses	Nitrile, double	Laboratory coat, knit cuffs	Under the hood for venting; the sharps container at the balance
Dispensing neat trifluoroacetic acid or formic acid (SOP-02)	Chemical splash goggles	Butyl or neoprene	Laboratory coat; an apron for a bottle transfer	The fume hood; the eyewash within 10 s
Mobile-phase preparation (1 L) and 4 L bottle transfers (SOP-02)	Safety glasses	Nitrile, changed at once when wetted	Laboratory coat	The fume hood
Karl Fischer reagent change; vial rinsing with methanol (SOP-05)	Safety glasses	Nitrile, changed at once when wetted	Laboratory coat	The hood or the cell's closed waste line
Loading and unloading the depyrogenation oven (SOP-04)	Safety glasses	Heat-resistant gauntlets	Laboratory coat	The door opened only below 60 °C

Protective equipment by task, and gloves by chemical, continued

LAL plate work (SOP-04)	Safety glasses	Nitrile, powder-free (for the assay as much as for the hands)	Laboratory coat	No talking over open tubes or the plate
Spill clean-up beyond a splash	Chemical splash goggles	Laminate (EVOH) over nitrile	Laboratory coat; an apron	Section 8

Glove compatibility

Chemical	Nitrile	Butyl or neoprene	Laminate (EVOH)
Acetonitrile	Splash only: minutes to breakthrough on immersion; change at once when wetted	Splash only	Yes, for clean-up
Trifluoroacetic acid, neat	No: breaks through quickly	Yes	Yes
Trifluoroacetic acid, 0.1% in water or acetonitrile	Yes	Not needed	Not needed
Formic acid, concentrated	No	Yes	Yes
Methanol and the Karl Fischer anolyte	Short-term splash only; change at once when wetted	Yes	Yes
Chloroform (a ketone-type Karl Fischer reagent)	No	No	Yes
Peptide stocks in water or Tris	Yes, double for stocks	Not needed	Not needed
Control standard endotoxin, lysate, Tris, 70% ethanol	Yes	Not needed	Not needed

Breakthrough times are the glove manufacturer's for the glove bought; this table says which material is a barrier and which is only a splash guard. A glove that is wetted with a solvent is changed, never wiped.

7 Waste streams

Stream	What goes in	Container and label	Where
(a) Non-halogenated organic solvent waste	HPLC effluent (acetonitrile, water, trifluoroacetic acid), methanol rinses, spent Karl Fischer anolyte when halogen-free, the divert line, triple-rinse rinsate	Closed container with a vented cap, grounded if metal; labelled "Hazardous Waste" with the contents and their percentages and the accumulation start date	At the HPLC and the titrator
(b) Halogenated organic waste	Only if a chloroform-containing Karl Fischer reagent is used (owner fact: safety.kf_reagent)	As (a), its own container, labelled halogenated	At the titrator
(c) Peptide-contaminated solid waste	Gloves, wipes, tubes, vials, stoppers, septa, retained vials for destruction (unopened, never crushed; SOP-01), LAL plates and tips if the contractor so profiles them	A rigid, lined container, closed except when adding; labelled	At the balance and the LAL bench
(d) Sharps	Venting needles, the Karl Fischer syringe needle, cut crimp shells, broken vials	A puncture-resistant sharps container meeting CSA Z316.6	At the balance and the titrator
(e) Aqueous Tris or LAL reagent water with no peptide	To drain; anything with peptide to (c) or absorbed into (c)	No container	The sink
(f) Empty reagent bottles	Triple-rinsed, the rinsate to (a), the label defaced	Ordinary recycling once rinsed	The flammables cabinet until rinsed

- Accumulation: each container at or near the point of generation and under the operator's control, closed except when waste is added, with a WHMIS workplace label (Reg. 860) naming its contents and the start date.
- Generator registration: under Reg. 347 the laboratory registers as a hazardous waste generator in the Hazardous Waste Program Registry unless its monthly quantity falls within the small-quantity exemption, which is to be confirmed against the regulation and the contractor's profile, not assumed. Waste leaves only with a registered carrier, under a manifest and the Transportation of Dangerous Goods Regulations. The registration number, the contractor, the manifest holder and the pick-up frequency are owner facts: not yet supplied (data.json safety.waste_contractor).
- Destruction of retained vials (SOP-01): unopened vials in stream (c) with the count on the manifest; whether they travel as pharmaceutical waste is the contractor's profile.

8 Exposure and spill response

This section is also printed on one page at the bench.

First aid by route

- Skin: remove wetted gloves and clothing; wash 15 min with soap and water. A solvent on the skin is washed, never wiped with more solvent.
- Eye: 15 min at the eyewash, the lids held open; then medical attention, for any acid or solvent and for any peptide solution.
- Needle stick or a cut on a wetted sharp: let it bleed, wash with soap and water, then medical evaluation the same day with the analyte's name, the concentration of the stock and this document and the method in hand; the peptide is a parenteral drug and the dose on a needle is a dose.
- Inhalation of powder or vapour: fresh air; medical evaluation for a peptide powder, for acetonitrile (symptoms delayed by hours) and for methanol.
- Ingestion: do not induce vomiting; call the Ontario Poison Centre; medical attention.
- Every exposure is recorded in the exposure log and as nonconforming work under SOP-08, and reported to the chemical hygiene officer the same day.

Who is called, in what order

- Life-threatening: 911, then the building's emergency contact (not yet supplied (data.json safety.emergency_contacts)).
- A poisoning or an exposure that is not life-threatening: the Ontario Poison Centre, 1-800-268-9017.
- Medical evaluation after any exposure: the occupational-health provider (not yet supplied (data.json safety.occupational_health_provider)), else the nearest emergency department.
- Then the chemical hygiene officer (not yet supplied (data.json safety.chemical_hygiene_officer)), who records it.
- What to bring: this document, the procedure, the worksheet, the analyte's name, the nominal concentration and the safety data sheet of any reagent involved.

Spills

- The spill kit (absorbent, wipes, water and 70% ethanol wash bottles, sealable bags, forceps, a sharps container, goggles, laminate gloves) is at: not yet supplied (data.json safety.spill_kit_location).
- A peptide solution or powder: never dry-brushed or blown; covered with a wipe wetted with water, lifted into a bag, the area wiped twice with water and then with 70% ethanol; everything to stream (c); broken glass with forceps to (d).
- A solvent or acid, a drop to about 50 mL: the analyst, with the kit, in the hood's draught where possible; the absorbent to (c).
- More than a 1 L bottle of acetonitrile or methanol, or any bottle of neat trifluoroacetic or formic acid: leave, close the door, call the building's emergency contact, and do not re-enter until the vapour is cleared.
- Every spill beyond a drop is recorded as nonconforming work (SOP-08).

9 The chemical hygiene plan's elements, each marked present or waiting on an owner fact

The elements of the plan (the model of 29 CFR 1910.1450(e))

Element	Where it is met	Status
(e)(3)(i) Standard operating procedures for the safety and health aspects of each hazardous chemical	The Safety section of each procedure (SOP-01 to SOP-06) and section 4 of this document	Present

The chemical hygiene plan's elements, each marked present or waiting on an owner fact, continued

(e)(3)(ii) Criteria the laboratory uses to decide control measures	Section 4 (controls by substance), section 6 (the matrix and the glove table): the hood for every neat acid and every litre of solvent, the enclosure for open powder, gloves by chemical, double gloves for stocks	Present
(e)(3)(iii) That fume hoods and protective equipment function, and the measures that ensure it	Face velocity 0.4–0.6 m/s (80–120 ft/min), certified annually against CSA Z316.5; the flow monitor read daily on WS-02; the enclosure running during the standard's weighing	Owner fact: not yet supplied
(e)(3)(iv) Employee information and training	Section 10: at first assignment and when a new hazard is introduced; the competence matrix of the bench review	Present as a rule; the trainer and the records are owner facts
(e)(3)(v) Operations that need prior approval	Section 5: the first use of a new peptide class; heating a peptide above 25 °C outside the Karl Fischer oven; more than 100 mg of a peptide open	Present
(e)(3)(vi) Medical consultation and examination	Section 8: after an exposure or when symptoms appear, by the occupational-health provider	Owner fact: not yet supplied
(e)(3)(vii) Designation of a chemical hygiene officer	Named below; in a two-person laboratory one of the two	Owner fact: not yet supplied
(e)(3)(viii) Additional protection for particularly hazardous substances	Section 5: the peptides of unknown potency and the reproductive concern of the GLP-1 class; a designated area, containment, decontamination, waste removal	Present
(e)(4) Annual review and update	Section 11: reviewed each year and at every new hazard; the fingerprint records the text reviewed	Present as a rule

The programmes that support it

Programme	Where it is met	Status
WHMIS 2015: the Hazardous Products Regulations and R.R.O. 1990, Reg. 860	The safety data sheet for every chemical, lysate and control standard endotoxin included; GHS labels on every secondary container (the solution label of the worksheets plus the hazard words)	Owner fact: not yet supplied
PPE hazard assessment, OHSA s. 25(2)(h) and Reg. 851	Section 6, written and certified by the chemical hygiene officer when named	Owner fact: not yet supplied
Eyewash and safety shower, Reg. 851; ANSI Z358.1	Within 10 s of the trifluoroacetic acid and methanol work; activated weekly (WS-02)	Owner fact: not yet supplied
First aid, R.R.O. 1990, Reg. 1101 (First Aid Requirements)	A first-aid station and kit, a person trained in first aid on each shift, and the kit's inspection record	Owner fact: not yet supplied
Flammable-liquid storage, Ontario Fire Code (O. Reg. 213/07), Division B, Part 4	A listed cabinet; the quantity limit for the room	Owner fact: not yet supplied
Compressed gases, CGA P-1; the Ontario Fire Code	Section 4, the nitrogen row	Owner fact: not yet supplied
Fire safety plan, Ontario Fire Code (O. Reg. 213/07), Division B, Section 2.8	Section 8 and the building's plan	Owner fact: not yet supplied
Respiratory protection, CSA Z94.4	Not required while the ventilated enclosure exists for the one open-powder step; a respirator would bring medical clearance and fit testing with it	Owner fact: not yet supplied
Exposure records, OHSA (Ontario) and Reg. 833	Kept by the holder named below	Owner fact: not yet supplied

10 Training

- Before first work, and again when a new hazard is introduced: this document, the procedures' Safety sections, the location of the safety data sheets, the signs of exposure for the solvents, the acids and the peptides, the exposure and spill response, and the waste plan.
- The competence matrix of the bench review (CRITIQUE_BENCH section 5) is the training record's shape: one file per person with the revision trained on, the date, the trainer and the evidence. The trainer and the holder of the records are owner facts (safety.records_holder: not yet supplied (data.json safety.records_holder)).

11 Review

This document is reviewed each year and at every new hazard, reagent, instrument or room; the fingerprint in the control block records the text reviewed, and a change is approved as a new revision (SOP-07). An injury or an exposure is itself nonconforming work (SOP-08) and triggers a review of the section concerned.

12 Records

- This document and its revisions, with the approval record (data.json documents).
- The safety data sheet file (owner fact: safety.sds_location).
- The exposure log, the spill records and the nonconformities they raise (lab/records/capa.jsonl through SOP-08).
- The training records and the competence matrix, per person.
- The daily hood, enclosure and eyewash checks on WS-02; the hood certification; the oven cycle records.
- The waste manifests and the contractor's profiles.

13 Revision history

Revision	Change	Approval
1	First issue.	Not yet approved

The fingerprint in the control block is the SHA-256 of this document's text as composed, first 16 hex digits. A change in any controlled source changes it; a copy whose fingerprint differs from the approved one is not the approved text, and a change is approved as a new revision.

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The current revision of every laboratory document is the one published at cupel.ca/methods. A printed copy is uncontrolled: compare its fingerprint with the published one.

Current revisions

End of document