Version 1.0, November 2026

Wet Lab Signs

Sixteen signs and nine tools for a safe, clean, shared molecular biology lab

S01 Did you balance the centrifuge?
S02 Are the chemical cabinets closed?
S03 Is the gel box closed?
S04 Did you check the freezer temperature?
S05 Is this pipette set yours?
S06 Did you clean your bench?
S07 Is a waste container full?
S08 Did you close the drawers?
S09 Never add bleach to kit waste.
S10 Is your face shield on?
S11 Never seal dry ice or liquid nitrogen.
S12 Are your gloves off?
S13 No food or drink in this lab.
S14 Is it labeled?
S15 Are you working one way?
S16 Did you use the last of it?

Denis Jacob Machado
Phyloinformatics Lab, Department of Bioinformatics and Genomics
University of North Carolina at Charlotte
phyloinformatics.com

Free to copy, adapt, and share under the Creative Commons Attribution 4.0 International license (CC BY 4.0).

How to use this book

A shared wet lab works when everyone follows the same small habits. This book puts those habits where people need them: on the centrifuge, the freezer door, the chemical cabinets, and the bench. It holds 16 signs and 9 tools. Each sign asks one question or states one rule, gives the steps, and explains why the rule exists. Each tool is a log, a roster, a checklist, or a set of tags that turns a habit into a record.

Two kinds of signs

⚠ WARNING

An orange header marks a hazard that can injure someone right away: a rotor, a power supply, a cabinet of flammables, ultraviolet light, or a cryogen.

NOTICE

A navy header marks a practice that protects samples, equipment, and colleagues: clean benches, labeled tubes, closed drawers, and honest logs.

The header colors follow the logic of the ANSI Z535 safety signs. These signs add to the hazard signs and labels your institution requires. They do not replace them.

Print and post

Print the pages you need on US letter paper at actual size (100%). Color works best, but every page also reads in grayscale. Laminate the signs or slip them into sheet protectors, and post each one at eye level where the action happens. The contents table on the next page suggests a spot for each sign. Print the tools on plain paper, replace them when they fill up, and keep the finished sheets in a binder.

Make it yours

Blank lines on the signs, the tools, and the emergency boxes take a phone number, a room, or a name. Write them in by hand, or fill them in once in `settings.tex` and recompile. The same file holds the acceptable temperature ranges for the freezers and refrigerators. Match those ranges to your own procedures.

Your institution's rules come first

These signs summarize common practice in molecular biology labs. Your institution's environmental health and safety office, the safety data sheet for each chemical, and the manual for each instrument set the rules. Where they differ from a sign in this book, follow them. The sources behind each sign are listed at the end of the book.

Share it

The book is free to copy, adapt, and share under the Creative Commons Attribution 4.0 International license (CC BY 4.0). Please credit it as: Jacob Machado, D. 2026. Wet Lab Signs: Sixteen signs and nine tools for a safe, clean, shared molecular biology lab. Version 1.0. Phyloinformatics Lab, University of North Carolina at Charlotte. phyloinformatics.com.

Contents

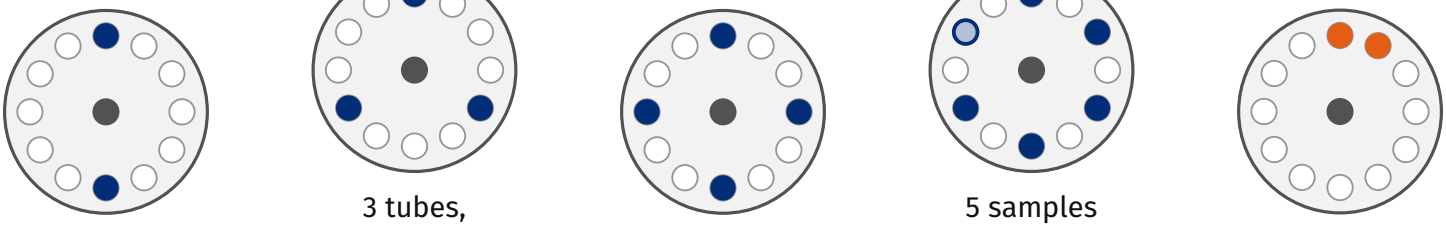
Code	Sign or tool	Post it	Page
S01	Did you balance the centrifuge?	On every centrifuge	4
S02	Are the chemical cabinets closed?	On the flammables and corrosives cabinets	5
S03	Is the gel box closed?	At the electrophoresis station	6
S04	Did you check the freezer temperature?	On each freezer and refrigerator, with log T02	7
S05	Is this pipette set yours?	Above the pipette stands, with roster T03	8
S06	Did you clean your bench?	Above each bench	9
S07	Is a waste container full?	Above the waste area, with log T04	10
S08	Did you close the drawers?	On drawer banks and cabinets	11
S09	Never add bleach to kit waste.	At the extraction bench and the waste area	12
S10	Is your face shield on?	At the UV transilluminator or gel imager	13
S11	Never seal dry ice or liquid nitrogen.	Near dewars, the dry ice cooler, and the ultra-low freezer	14
S12	Are your gloves off?	On the lab door, the phone, and the computers	15
S13	No food or drink in this lab.	On the outside of the lab door	16
S14	Is it labeled?	On shared refrigerators, freezers, and shelves	17
S15	Are you working one way?	At the PCR setup area	18
S16	Did you use the last of it?	Above the reagent shelf, with list T07	19
T01	Emergency information	By the lab door and the phone	20
T02	Temperature log	On each freezer and refrigerator, one sheet a month	21
T03	Pipette set roster	Near the pipette stands	22
T04	Waste log	At the waste area	23
T05	Weekly lab duties	On the lab notice board	24
T06	Equipment booking sheet	On each shared instrument	25
T07	Restock list	At the reagent shelf	26
T08	Last person out	On the inside of the lab door	27
T09	Equipment and sample tags	Cut out and tape where needed	28

S, sign. T, tool. Orange codes on the cover mark WARNING signs. The sources behind each sign are listed at the end of the book.

⚠ WARNING

Did you balance the centrifuge?

Load tubes of equal mass in opposite positions. Check before every run.



2 tubes | 3 tubes, evenly spaced | 4 tubes | 5 samples plus 1 blank | **Not balanced**

Patterns for a 12-place rotor. Dark circles are samples. The light circle is a blank tube of water with the same mass.

1. Match volumes in small tubes. Weigh large tubes in opposite pairs.
2. Odd number of samples? Add a water blank of the same mass.
3. Close the rotor lid and the centrifuge lid before you press start.
4. Stay until the rotor reaches full speed. If the centrifuge shakes or sounds wrong, stop it at once.
5. Wait for the rotor to stop completely before you open the lid.

Why it matters. An unbalanced rotor can tear itself apart at full speed. Rotor failures have driven rotors through centrifuge housings and moved whole centrifuges with enough force to break through walls. Balancing takes seconds.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

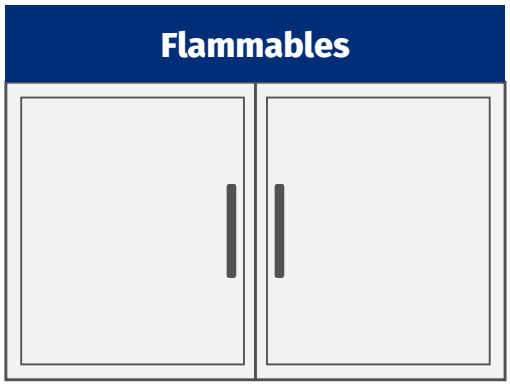
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

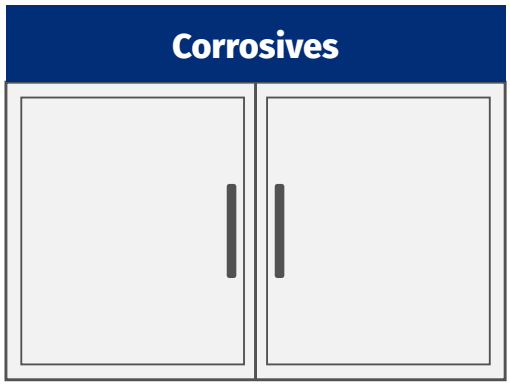
⚠ WARNING

Are the chemical cabinets closed?

Keep both cabinets shut and latched at all times.



Ethanol, isopropanol, methanol, acetone



Hydrochloric and sulfuric acids, sodium hydroxide

Keep oxidizers away from flammables, and keep bleach away from acids and ammonia.

1. Close the door as soon as you take out or return a bottle.
2. Never prop a door open or block a self-closing door.
3. Return each bottle to its own cabinet and its own spill tray. Keep acids and bases in separate trays.
4. Tell the PI about any door that does not latch.

Why it matters. A flammables cabinet is built to keep its contents below 163 °C (325 °F) for 10 minutes in a fire. It does that only with the doors shut. A closed corrosives cabinet keeps acid and base fumes away from metal shelves and from your lungs.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

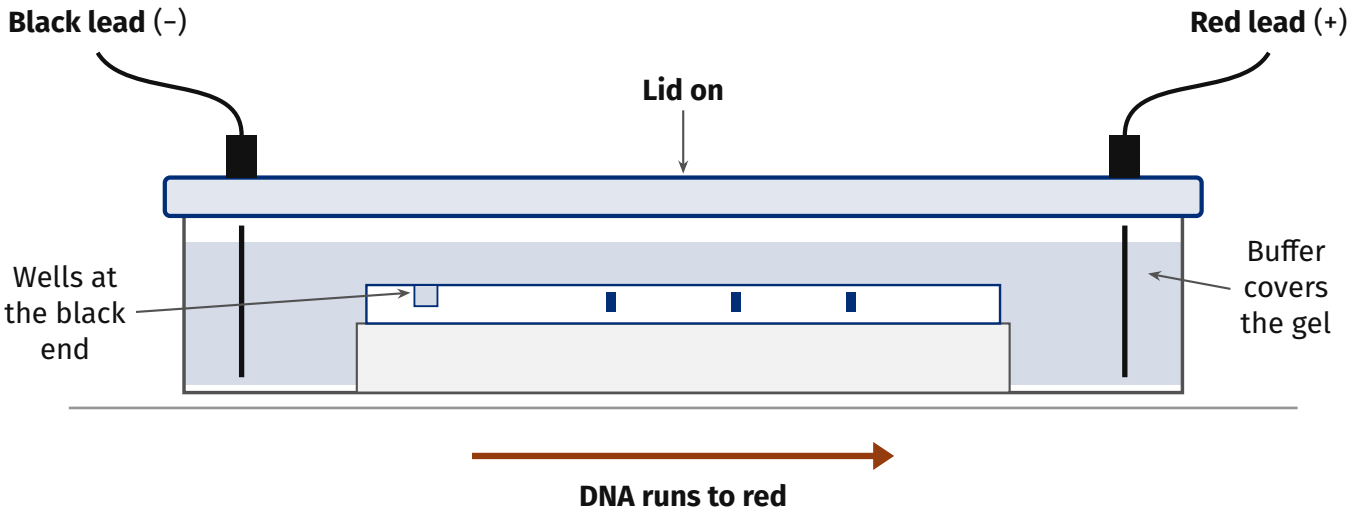
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

⚠ WARNING

Is the gel box closed?

Keep the lid on whenever the box holds buffer, and always while it runs.



1. Load the gel and close the lid. Then connect the leads and switch on.
2. Black lead to black, red lead to red. Load the wells at the black end.
3. Switch off and unplug the leads before you open the lid.
4. Keep the box on a dry bench, away from other people's samples.
5. Treat the buffer as stained. Wear gloves to handle it.

Why it matters. An open gel box spreads stain and DNA. Drips carry them to benches, pipettes, and other people's samples, where a trace of PCR product can ruin a PCR. The lid keeps the buffer, the stain, and the DNA inside the box. It also keeps fingers out of buffer that runs at 50 to 200 volts, enough for a lethal shock.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

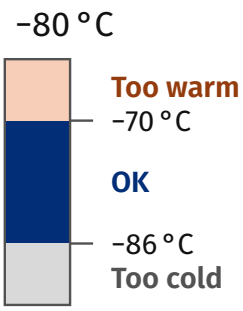
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

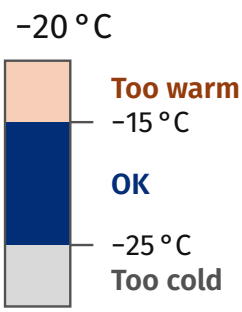
NOTICE

Did you check the freezer temperature?

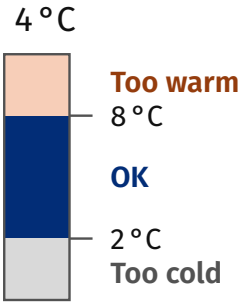
Read every freezer and refrigerator once a day. Write the reading on the log.



Ultra-low freezer



Freezer



Refrigerator

1. Read the display at the same time each day. Log it on T02.
2. Out of range? Tell the PI right away and keep the door shut.
3. Know which box you need before you open the door. An open door warms the whole unit.
4. Close the door firmly and check that it latches. Brush frost off the seal.
5. If a freezer fails, the samples go to: _____

Why it matters. Freezers rarely fail without warning. A daily reading shows a slow warming trend while there is still time to move the samples. Without it, years of samples can thaw in an afternoon.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

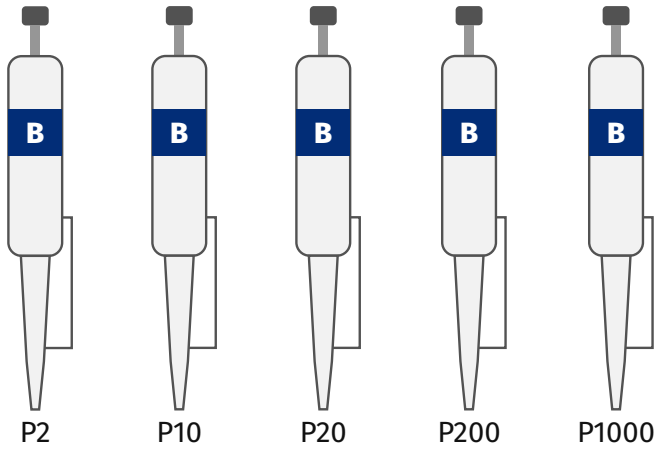
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Is this pipette set yours?

Use only the set assigned to you. Ask the owner before you borrow a pipette.



Set B belongs to

_____

Every pipette carries the letter of its set. The roster (T03) lists each set and its owner.

1. Find your set on the roster. Use only pipettes that carry your letter.
2. Need a volume your set lacks? Ask the owner, and return the pipette clean the same day.
3. Eject the tip, set the dial to the maximum volume, and store the pipette upright in the stand.
4. Never turn the dial past its range. Never lay a pipette down with liquid in the tip.
5. Dropped a pipette? Tell the owner. It needs a calibration check.

Why it matters. A pipette carries traces of every sample it touched. A borrowed pipette can carry a colleague's DNA into your reactions, or yours into theirs. It can also lose its calibration, and the owner will not know why the next experiment failed.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Did you clean your bench?

Clean it before you start and after you finish. Leave it ready for the next person.

Clear
Return reagents. Discard tubes, tips, and used gloves.

→

Bleach
Wipe with fresh 10% bleach. Leave it wet for 10 minutes.

→

Rinse
Wipe with 70% ethanol or water to remove the bleach.

→

Check
Equipment off. Waste capped. A label on anything you leave.

1. Make 10% bleach fresh each day: 1 part household bleach to 9 parts water. Write the date on the bottle.
2. Wipe the shared equipment you used, too: racks, the vortex, and the centrifuge lid.
3. Report spills you cannot clean to the PI right away.
4. Never pour bleach into extraction kit waste (S09).

Why it matters. Ethanol at 70% kills many microbes but leaves DNA intact. Fresh 10% bleach destroys DNA and RNA. The rinse after the bleach removes residue that inhibits PCR and corrodes metal.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Is a waste container full?

Tell the PI before any waste leaves this lab.

Waste	Container	When it is full
Needles, blades, and other sharps	Rigid sharps container	Close it at the fill line, about three-quarters full
Broken glass and glass pipettes	Lined glass disposal box	Seal the box and label it
Cultures, tissues, and contaminated plastics	Biohazard bag in a rigid bin	Close the bag. The PI arranges treatment
Solvents, stains, and kit waste	Capped, labeled waste bottle	The PI requests a chemical waste pickup
Paper and clean packaging	Ordinary trash bin	Custodial staff empty it

Where your institution's waste rules differ, follow them.

1. Tell the PI as soon as a container reaches its fill line.
2. Write it on the waste log (T04): the date, the waste, and your name.
3. Never overfill a container or press waste down by hand.
4. Never carry lab waste to a hallway bin or a dumpster yourself.

Why it matters. Each kind of waste leaves the building by its own route, under its own rules. The PI arranges chemical pickups and biohazard treatment. A bag in the wrong bin can injure a custodian and bring a fine to the whole department.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

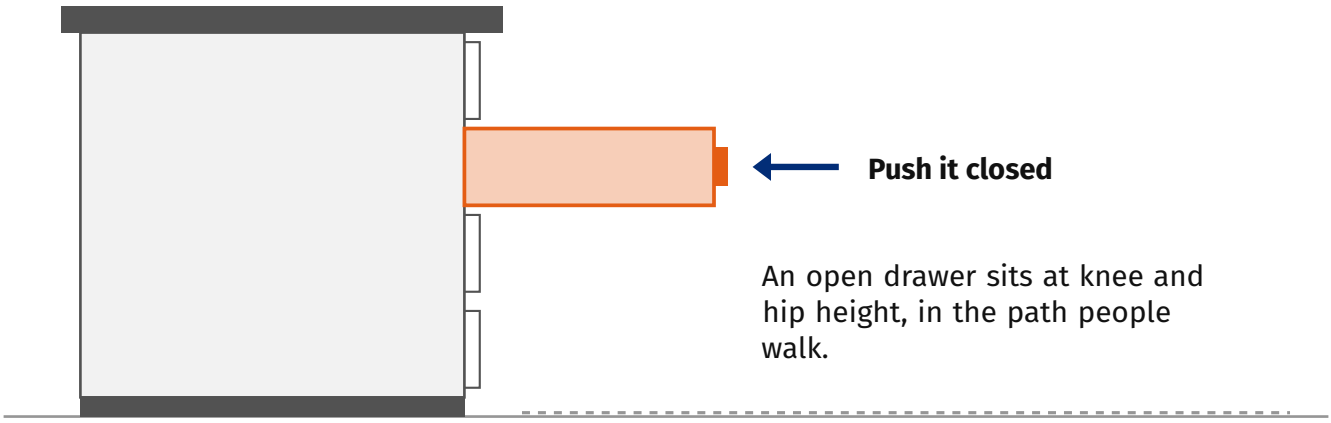
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Did you close the drawers?

Close every drawer and cabinet door when you step away, even for a minute.



1. Take what you need, then close the drawer right away.
2. Put supplies back in the drawer they came from.
3. Keep drawers loaded low enough to close without force.
4. Found a drawer open? Close it, even if it is not yours.

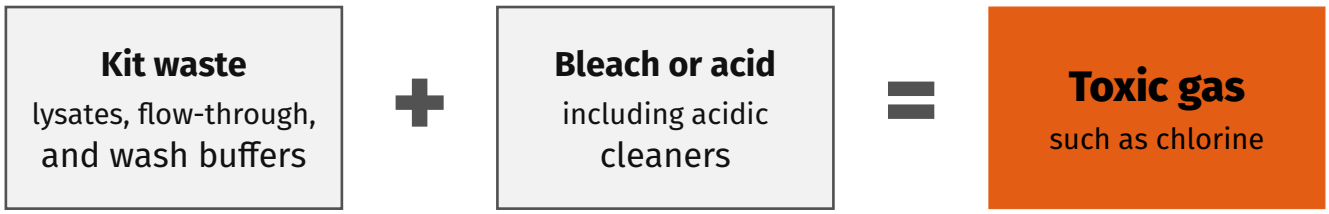
Why it matters. An open drawer sits right in the path of someone who carries glassware, a gel, or a box of samples on dry ice. Closed drawers also keep dust and aerosols off the shared supplies inside.

Wet Lab Signs, version 1.0. CC BY 4.0.

⚠ WARNING

Never add bleach to kit waste.

Guanidine salts in DNA and RNA extraction kits react with bleach and acids and release toxic gas.



1. Check the kit handbook or safety data sheet for guanidine thiocyanate or guanidine hydrochloride.
2. Collect kit waste in its own capped bottle labeled “Guanidine waste: no bleach.”
3. Keep bleach and acids out of that bottle. Ask the PI for a chemical waste pickup when it is full.
4. Spilled lysate? Wipe it with detergent and water first. Use bleach only after that, if the sample needs disinfection.

Why it matters. Guanidine salts make silica column extraction work. Mixed with bleach they form highly reactive compounds, and labs have released chlorine gas this way. Phenol reagents such as TRIzol also contain a guanidine salt.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

⚠ WARNING

Is your face shield on?

Put it on before you switch on the UV light. A transilluminator burns eyes and skin in seconds.

Shield on
UV face shield, gloves, and a lab coat that covers your wrists.

→

Door closed
Close the imager door or lower the UV cover.

→

UV on
Work fast. Plan your cuts before the light comes on.

→

UV off
Switch it off the moment you finish.

1. Never look at the lamp without the face shield, even for a moment.
2. Keep the time under the light short. Damage adds up with every second.
3. Wipe the glass after you finish. Discard gel pieces as the lab's stain rules require.
4. Treat every gel as stained. Wear gloves to touch gels, trays, and the imager.

Why it matters. Ultraviolet light from a transilluminator damages the cornea and skin within seconds. The pain starts hours later, long after the damage. Ethidium bromide is a mutagen, and the safer stains still call for gloves.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

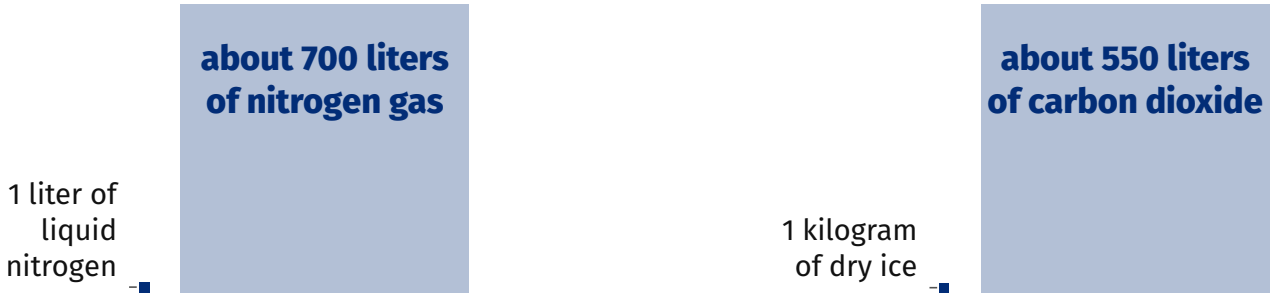
Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

⚠ WARNING

Never seal dry ice or liquid nitrogen.

Both turn into gas fast. A closed container can burst, and the gas pushes the oxygen out of a small room.



Small square: the solid or liquid. Large square: the gas it becomes at room temperature, to scale by area.

1. Keep dry ice in foam boxes and liquid nitrogen in dewars with loose lids.
2. Never put either one in a screw-cap tube, a sealed bag, or a closed jar.
3. Wear cryogenic gloves and a face shield to pour liquid nitrogen. Use tongs or a scoop for dry ice.
4. Never ride an elevator with a dewar or dry ice. Send it alone.
5. Never store either one in a cold room, a closet, or a car.

Why it matters. In a closed elevator or a cold room, the gas can make you pass out with no warning. A sealed tube or jar can burst and throw shards. Both are cold enough to burn skin on contact.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Are your gloves off?

Take your gloves off before you touch doors, phones, keyboards, and light switches.

Gloves on

Samples and reagents
Gels, stains, and buffers
Waste containers
Lab equipment
Spills

Gloves off

Door handles
Phones, keyboards, and mice
Light switches
Elevators and hallways
Your face and hair

1. Change gloves when they touch your face, your hair, or your phone.
2. Never wear lab gloves outside the lab.
3. Carrying something and need a door? Take off one glove, or ask a colleague.
4. Wash your hands when you take your gloves off and before you leave.

Why it matters. Gloves protect you only while they stay on the work. A gloved hand on a door handle passes stain, solvent, or DNA to the next bare hand. That hand may belong to someone who never works at a bench.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

No food or drink in this lab.

Eat, drink, and store food outside this room.

1. Leave water bottles, coffee, and snacks outside the lab door.
2. Never store food or drink in a lab refrigerator or freezer, even sealed.
3. No gum, cosmetics, or lip balm in the lab, and no handling of contact lenses.
4. Wash your hands before you leave the lab and before you eat.

Eat and drink here instead:

_____

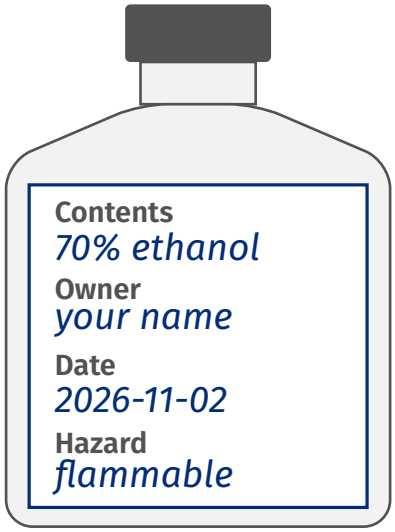
Why it matters. Benches, gloves, and lab air carry stains, solvents, and microbes you cannot see. A cup on the bench collects them, and then you swallow them. This rule follows the standard practices of the CDC and NIH biosafety manual.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Is it labeled?

Every tube, bottle, box, and bag in a shared space carries a label.



Four things on every label: contents, owner, date, and hazard.

Write the date as year, month, day. Everyone reads 2026-11-02 the same way.

1. Label everything you leave in a shared space, even for one night.
2. Name the hazard of every chemical: flammable, corrosive, toxic, or oxidizer.
3. Use a solvent-proof marker or printed labels. Ethanol wipes off ordinary ink.
4. Label the side of each tube as well as the cap. Caps get swapped.
5. Unlabeled items go to the PI, who decides whether to keep them.

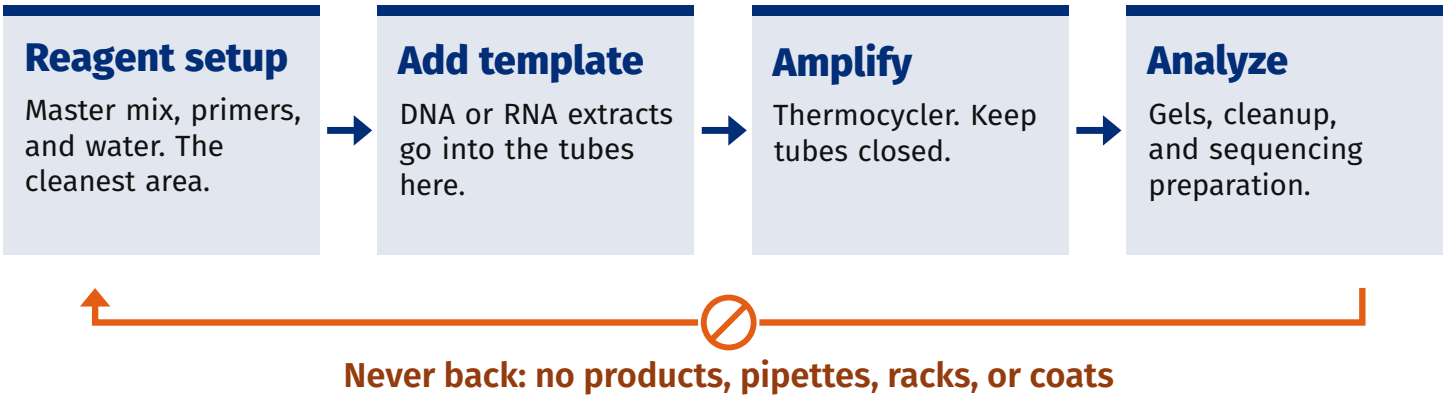
Why it matters. Nobody can use, move, or clean up a container whose contents are unknown. A clear label protects your samples from the person who cleans the refrigerator. It also protects that person from your chemicals.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Are you working one way?

Move from clean to amplified. Never carry PCR products back to the setup area.



1. Keep separate pipettes, racks, and lab coats for the setup area.
2. Use filter tips for every PCR setup.
3. Change gloves each time you move forward to the next area.
4. After you handle PCR products, stay out of the setup area for the rest of the day.
5. Clean the setup area with fresh 10% bleach before and after you work.

Why it matters. One PCR makes billions of copies of its target. A droplet too small to see can contaminate every reaction that follows, and the negative controls will show it. A one-way workflow keeps the products away from the next setup.

Wet Lab Signs, version 1.0. CC BY 4.0.

NOTICE

Did you use the last of it?

Write it on the restock list when a supply runs low, not when it runs out.

1. Write the item, the vendor, and the catalog number on the restock list (T07).
2. Refill the tip box you emptied. Replace the glove box you finished.
3. Return shared reagents to their place right after you use them.
4. Aliquot stock solutions. Never put a used tip into a stock bottle.
5. Write the date on every bottle when you open it.

Running low means:

the last box of tips in the drawer, the last sleeve of tubes, the last two boxes of gloves, or a stock bottle a quarter full.

Why it matters. A shared lab runs on supplies that someone else needs tomorrow morning. The person who notices first saves everyone a lost day, and the PI can order before the shelf is empty.

In case of emergency

Contact the PI: _____

Phone _____ **Email** _____

No answer? Contact: _____

Anyone hurt or in danger? Call 911 first.

Wet Lab Signs, version 1.0. CC BY 4.0.

Emergency information

T01

Fill in every line. Post it by the lab door and the phone. Check it each semester.

In an emergency, call 911

Tell the dispatcher the building and the room: _____

People to call

	Name	Phone	Email
Principal investigator (PI)			
Lab manager			
Second PI in this lab			
Department lab manager			
Police, emergency			
Police, non-emergency			
Environmental health and safety			
Biosafety officer			

Where to find

Eyewash	
Safety shower	
Fire extinguisher	
Fire alarm pull station	
Spill kit	
First aid kit	
Safety data sheets	
Exit and meeting point	

If someone is hurt

1. Call 911 for a fire, a serious injury, or a spill you cannot contain.
2. Chemical in the eyes or on the skin? Flush with water for 15 minutes at the eyewash or the shower. Remove contaminated clothing.
3. Tell the PI the same day. Report every injury and every spill to environmental health and safety.

Wet Lab Signs, version 1.0. CC BY 4.0.

Temperature log

T02

Use one sheet per freezer or refrigerator each month. Read the display at the same time each day. If the reading falls outside the range, tell the PI right away and write what you did (S04).

Unit _____ **Location** _____

Month and year _____ **Acceptable range** _____ to _____ °C

Day	Time	Reading (°C)	In range (Y or N)	Initials	If out of range: who you told and what you did
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

Wet Lab Signs, version 1.0. CC BY 4.0.

Pipette set roster

T03

List every pipette set, its owner, and where it lives. Mark each pipette with its set letter. Use only your own set, and ask the owner before you borrow (S05).

Set	Owner	Pipettes in the set	Stand location	Last calibrated	Next due

Wet Lab Signs, version 1.0. CC BY 4.0.

Waste log

T04

Write an entry as soon as a waste container reaches its fill line. Tell the PI the same day. The PI initials the entry and arranges the pickup or treatment (S07).

Date	Waste	Container and amount	Your name	PI told (initials)	Removed on

Wet Lab Signs, version 1.0. CC BY 4.0.

Weekly lab duties

T05

Each week one person runs these five checks, ticks each box, and initials the row. Keep the finished sheet. It records the weekly eyewash test.

Eyewash flushed	Run the eyewash until the water runs clear and check that both nozzles spray.
Surfaces wiped	Door handles, phones, keyboards, light switches, and shared benches.
Waste checked	No container past its fill line. Full containers are on the waste log (T04).
Supplies restocked	Tips, tubes, gloves, and paper towels. Low items are on the restock list (T07).
Logs reviewed	Every temperature log (T02) has a reading for each day of the week.

Week of	Name	Eyewash flushed	Surfaces wiped	Waste checked	Supplies restocked	Logs reviewed	Initials

Wet Lab Signs, version 1.0. CC BY 4.0.

Equipment booking sheet

T06

Book shared instruments here before you use them. Cancel a booking you no longer need so a colleague can take the slot.

Equipment _____ **Location** _____

Date	Start	End	Name	Phone or email	Notes

Wet Lab Signs, version 1.0. CC BY 4.0.

Restock list

T07

Write an item here when it runs low, not when it runs out. The person who orders writes the date and initials in the last column (S16).

Item	Vendor and catalog number	Requested by	Date	Ordered on (initials)

Wet Lab Signs, version 1.0. CC BY 4.0.

Last person out

T08

The last person to leave the lab checks every line before locking the door.

- ☐ Power supplies off. Gel boxes closed.
- ☐ UV lamps off at the transilluminator and in the hoods.
- ☐ Heat blocks, water baths, and hot plates off, unless a tag says a run is in progress.
- ☐ Gas valves and burners closed.
- ☐ Water taps closed.
- ☐ Freezer and refrigerator doors closed and latched.
- ☐ Chemical cabinets closed. Drawers closed.
- ☐ Benches clear and clean.
- ☐ Waste containers capped.
- ☐ Computers logged out.
- ☐ Lights off. Door locked.

Something you cannot fix? Call the PI before you leave: _____

Wet Lab Signs, version 1.0. CC BY 4.0.

Equipment and sample tags

T09

Cut along the dashed lines. Tape a tag to the instrument, the box, or the shelf. Remove it as soon as it no longer applies.

IN USE

Please do not move or switch off.

Name

_____

Phone or email

_____

In use until (date and time)

_____

RUN IN PROGRESS

Do not open, unplug, or switch off.

Name and phone

_____

Started

_____

Ends

_____

OUT OF ORDER

Do not use. The PI knows.

Problem

_____

Reported by and date

_____

Reported to

_____

DO NOT DISCARD

These samples belong to someone.

Owner and phone

_____

Contents

_____

Keep until

_____

Wet Lab Signs, version 1.0. CC BY 4.0.

Sources

These sources support the signs and tools in this book. Web addresses were accessed in November 2026. Gas volumes on sign S11 come from the ideal gas law at 20 °C and 1 atmosphere.

All signs

Occupational Safety and Health Administration. 29 CFR 1910.1450, Occupational exposure to hazardous chemicals in laboratories.
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1450

National Research Council. 2011. Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards, updated version. National Academies Press.
https://doi.org/10.17226/12654

Centers for Disease Control and Prevention and National Institutes of Health. 2020. Biosafety in Microbiological and Biomedical Laboratories, 6th edition. Also the source for S12 and S13.
https://www.cdc.gov/labs/bmbl/

American National Standards Institute. ANSI Z535.2, Environmental and facility safety signs. The model for the WARNING and NOTICE headers.
https://www.ansi.org

S01 Centrifuge balance

Queen's University Environmental Health and Safety. Centrifuges: safety and operation (SOP Biosafety 12).
https://www.queensu.ca/risk/sites/rsswww/files/uploaded_files/EHS/SOPs/Biosafety/SOP-Biosafety-12-Centrifuges%20Safety%20and%20Operation%20V2.pdf

University of California, Riverside, Environmental Health and Safety. Centrifuge safety guidance.
https://ehs.ucr.edu/media/4136/download

University of Georgia, Department of Food Science and Technology. Centrifuge selection and use.
https://foodscience.caes.uga.edu/content/dam/caes-subsite/food-science/documents/centrifuge-selection-and-use-december-2015.pdf

S02 Chemical cabinets

Occupational Safety and Health Administration. 29 CFR 1910.106(d)(3), Design and construction of storage cabinets.
https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.106

The University of Texas at Austin Environmental Health and Safety. Chemical storage cabinets.
https://ehs.utexas.edu/working-safely/chemical-safety/chemical-storage-cabinets

Boston University Environmental Health and Safety. Chemical segregation and storage chart.
https://www.bu.edu/ehs/files/2011/03/Chemical-Segregation-and-Storage-Chart.pdf

S03 Gel box and S10 UV light

University of Oregon Safety and Risk Services. Electrophoresis.
https://safety.uoregon.edu/electrophoresis

University of Regina Health, Safety and Wellness. Guidelines for the safe use of electrophoresis equipment.
https://www.uregina.ca/health-safety/assets/documents/forms-procedures/equipment/guidelines-safe-use-electrophoresis.docx

Princeton University Environmental Health and Safety. Ultraviolet light safety in the laboratory.
https://ehs.princeton.edu/sites/g/files/toruqf5671/files/media_files/Ultraviolet%20Light%20Safety%20in%20the%20Laboratory.pdf

Stanford University Environmental Health and Safety. Ultraviolet (UV) light.
https://ehs.stanford.edu/topic/radiation-safety/ultraviolet-uv-light

S04 Freezer temperatures and T02 Temperature log

Thermo Fisher Scientific. Technical note on external monitoring of ultra-low temperature freezers.
https://assets.thermofisher.com/TFS-Assets/LPD/Product-Information/ULT-External-Monitoring-TNULTEXTMONITOR-EN.pdf

Griffith University. Ultra-low freezer use and maintenance guideline.
https://www.griffith.edu.au/__data/assets/pdf_file/0015/1142421/Ultralow-Freezer-Use-and-Maintenance-Guideline_Nov2020.pdf

S05 Pipette sets

INTEGRA Biosciences, in The Scientist. Guidance to ensure pipette longevity and accuracy.
https://www.the-scientist.com/integra-s-guidance-to-ensure-pipette-longevity-and-accuracy-69517

Microlit. How to store pipettes to ensure longevity.
https://www.microlit.com/faqs/how-to-store-microlit-pipettes-properly-to-ensure-longevity/

S06 Bench cleaning and S15 PCR workflow

World Health Organization, Global Malaria Programme. Dos and don’ts for molecular testing.
https://www.who.int/teams/global-malaria-programme/case-management/diagnosis/nucleic-acid-amplification-based-diagnostics/dos-and-don-ts-for-molecular-testing

Columbia University Environmental Health and Safety. Recommendations for reducing nucleic acid contamination.
https:
//research.columbia.edu/sites/default/files/content/EHS/COVID-19/RecommendationsForReducingNucleicAcidContamination.pdf

S07 Waste and T04 Waste log

Virginia Commonwealth University Safety and Risk Management. Sharps disposal.
https://healthsafety.vcu.edu/labs--research/waste-management/sharps-disposal

UNC Charlotte Environmental Health and Safety. Hazardous and universal waste.
https://safety.charlotte.edu/services/laboratory-research-safety/hazardous-universal-waste

S09 Extraction kit waste

QIAGEN. RNeasy MinElute Cleanup Handbook, safety information on guanidine salts and bleach.
https://archive.jgi.doe.gov/wp-content/uploads/sites/8/2014/02/Qiagen_RNeasy_MinElute_Cleanup_Handbook.pdf

Harvard University Environmental Health and Safety. Guanidine salts and bleach.
https://www.ehs.harvard.edu/node/8230

Boston University Environmental Health and Safety. Take safety precautions when using RNA extraction kits.
https://www.bu.edu/ehs/2017/11/09/take-safety-precautions-when-using-rna-extraction-kits/

University of California, Davis, Safety Services. Lessons learned: incompatible chemicals generate chlorine gas.
https://safetyservices.ucdavis.edu/node/5566

S11 Dry ice and liquid nitrogen

WorkSafe Victoria. Working with dry ice.
https://www.worksafe.vic.gov.au/safety-alerts/working-dry-ice

United States Department of Agriculture, Agricultural Research Service. Liquid nitrogen safety.
https://www.ars.usda.gov/northeast-area/docs/safety-health-and-environmental-training/liquid-nitrogen-safety/

Vancouver Coastal Health Research Institute. Liquid nitrogen hazards.
https://www.vchri.ca/sites/default/files/LiquidNitrogenHazards_23June2011.pdf

University of Ottawa. Safety sheet 21: cryogens.
https://uottawa.ca/about-us/sites/g/files/bhrskd336/files/2024-11/safety-sheet-21-cryogens.pdf

T01 Emergency information and T05 Weekly lab duties

Cornell University Environmental Health and Safety. Emergency eyewashes and safety showers, including weekly activation.
https://ehs.cornell.edu/book/export/html/1104

American National Standards Institute. ANSI Z358.1, Emergency eyewash and shower equipment.
https://www.ansi.org