

WSU CHEMISTRY LABORATORY SAFETY INSTRUCTIONS AND CONTRACT

Report all injuries to your laboratory instructor or TA as soon as possible.

LAB SAFETY GUIDELINES

- Chemical splash-proof goggles must be worn **AT ALL TIMES** in the lab except during pre-lab lectures or when indicated by the instructor. Only indirect-vented goggles marked as Z87.1 or Z87+ are acceptable.
- Be prepared for your work. Read all procedures thoroughly before attending lab.
- Gloves must be worn when instructed to do so. Some chemicals are highly corrosive or toxic.
- When instructed, make sure your work is carried out in the hood. Resulting fumes may be harmful to you and to your peers.
- Never work outside of the scheduled class period unless you have been given permission.
- Unauthorized experiments are not allowed.
- Read labels carefully!
- Do not bring food or drinks into the lab.
- Always wash your hands and gloves with soap and warm water after using chemicals and again before leaving lab.
- No horseplay is allowed.
- Coats should be left on the hooks provided inside the lab and bags should be placed out of the way.
- Know the locations and proper use of the fire extinguisher, safety shower, and eyewash station.
- Keep electrical cords away from water sources.
- Dispose of waste properly:
 - No chemical waste may be disposed of down the drain or in the trash unless specifically directed to do so.
 - Labeled waste collection containers will be available in the hood for each laboratory exercise.
 - Disposable/broken glassware should be placed in the glassware container.

CLOTHING

- Chemical splash-proof goggles must be worn **AT ALL TIMES** in the lab except during pre-lab lectures or when indicated by the instructor. Only indirect-vented goggles marked as Z87.1 or Z87+ are acceptable.
- Come to lab dressed appropriately. The following guidelines must be followed for your safety:
 - Hair must be pulled back away from the face.
 - Clothing must completely cover legs. Leggings or other items of tight clothing are not permitted as they do not provide a significant barrier between you and the chemicals with which you are working.
 - Shoes must completely cover the foot. No sandals are allowed.
- Contact lens wearers should be aware of potential risks.
- Tight jewelry, such as finger rings, which cannot be easily removed, should not be worn.
- When instructed to wear gloves, treat the gloves as you would your hands. Wash them frequently with soap.

HANDLING CHEMICALS

- Do not insert pipettes or medicine droppers into reagent bottles.
- Do not return unused chemicals or solutions to their bottles. Dispose of them in properly labeled waste containers.
- Make sure spatulas are clean and dry before using them to remove solid chemicals from reagent bottles.
- When preparing acid solutions, always pour the acid into the water.

CHEMICAL EXPOSURE AND INJURIES

- Report all injuries to your laboratory instructor or TA as soon as possible.
- If you are exposed to a chemical:
 - Eyes – use eye wash for at least 15 minutes
 - Skin – wash immediately in cold water for 10-15 minutes
 - Clothing – use safety shower, remove affected clothing.
- For acid/base spills:
 - On lab bench – neutralize acid with sodium bicarbonate (NaHCO_3), or base with boric acid (H_3BO_3), then sponge up with plenty of water.

All incidents involving chemical exposure will be documented by the laboratory instructor involved and/or campus security. Anyone needing to use the eyewash or safety shower will be required to seek follow-up medical attention.

BLOODBORNE PATHOGEN INFORMATION

Winona State University is required to comply with Occupational Safety and Health administration (OSHA) standards. It is important to extend appropriate precautionary measures to students as well as employees. This OSHA standard states that Winona State must respond to any incident on campus involving human blood and other potentially infectious materials as if the material is known to be infectious with a blood borne pathogen (HIV/AIDS, hepatitis B, hepatitis C, and others). This is referred to as Universal Precautions. Since visual confirmation of the presence of a blood borne pathogen is not possible, these types of precautions are necessary to protect all people on both campuses.

Therefore, should an accident in the lab involve human blood or other potentially infectious materials, please keep in mind:

- If you are bleeding, you **must** notify your lab instructor and/or TA. Fellow students in lab should avoid assisting in situations involving potentially infectious materials- the potential for others to be exposed to potentially infectious materials must be limited. Campus security is always available to assist if the situation warrants.
- If you are able, you will be asked to clean up any contaminated area involved. Again, this is to reduce the potential of others being exposed to potentially infectious materials.
- If you need assistance, security will be called. Be aware that they will put on gloves to protect themselves and you-please do not take this personally!
- Any area contaminated with potentially infectious materials has to be properly disinfected and all materials used to clean up the area have to be disposed of as infectious waste. No infectious waste can go into the regular trash.

As a general rule:

Use common sense- if you are not sure about procedures, chemicals, etc., ASK!

- If you are pregnant, contact your health care provider about possible risks associated with the chemicals used in the lab. You may wish to inform your lab instructor. Your instructor may inform you about possible alternative accommodations.

Please help keep our labs safe- if you observe any potential hazards, notify somebody.

LABORATORY AGREEMENT FORM

I have read the laboratory safety rules and agree to abide by them.

NAME _____

SIGNED _____ DATE _____

In the case of an emergency, it is important to act quickly and cautiously. In doing so, it is important to be fully aware of any pre-existing conditions or circumstances that may affect treatment.

In addition, other health conditions, such as prescription allergies or seizures, may exist that would make it difficult to administer proper emergency treatment. If such a case were to occur, it is important that the lab instructor be aware of such conditions.

The disclosure of any special circumstances/conditions that you may have is completely voluntary. However, if you would like to make the instructor aware of any of these situations, please indicate those that should be taken into consideration in an emergency.

Circumstance/condition

Normal treatment/action taken

I do do not normally wear contact lenses.

Some experiments may require distinguishing colors to observe results. In order to prepare for these experiments, it is beneficial to know if you have this condition. Please indicate this, if you are willing, by answering the following statement.

I do do not have difficulty distinguishing between different colors.



Infectious and Biohazardous Waste: Rules for Safe Handling in the Classroom

Products we use every day can be harmful to humans and the environment depending on their quantity, concentration, or physical, chemical or infectious condition when they are improperly treated, stored, transported, or disposed of, or otherwise managed inappropriately. The Minnesota Pollution Control Agency regulates the generation, storage and disposal of hazardous waste.

Waste is classified in state and federal law as “infectious / biohazardous” if it has potential to transmit disease. Infectious or biohazardous waste must be segregated from other wastes and go through a decontamination process before it is considered safe for routine handling as a solid waste. Hence, it is collected in special containers.

You are responsible for proper disposal of the infectious or biohazardous wastes you handle.

- 1 **Always** put the wastes in the designated and labeled infectious / biohazardous waste containers. Your instructor will show you the proper location in the laboratory or classroom for each type of waste generated.
- 2 **Never** dispose of hazardous waste using sinks or intentional evaporation or as regular trash. It is harmful for the environment – and against the law. All campus laboratories and classrooms must abide by strict Minnesota Pollution Control Agency and federal Environmental Protection Agency waste disposal requirements. You may be held liable for violations of applicable laws.
- 3 **Remember:** Simply because a waste is nonhazardous does not mean that it can go into a dumpster or in a drain. Other regulations may apply. Ask your instructor.

Examples of infectious or biohazardous waste

- Regulated body fluids
- Blood and blood products
- Amniotic, cerebrospinal, pericardial, peritoneal, pleural and synovial fluids
- Items dripping with body fluids
- Laboratory wastes (waste cultures and stocks)
- Infected research animal waste
- Sharps and pathology waste

Infectious or biohazardous wastes may be handled in laboratory courses or clinical courses such as these:

- Medical lab technology
- Nursing
- Phlebotomy technician
- Dental assistant
- Emergency medical practitioner

What happens to the waste after it is put in the labeled waste container?

Your classroom has containers specifically labeled for infectious / biohazardous waste. After the wastes are collected from the classroom, they are decontaminated, either by campus personnel or a contracted service provider. Eventually, they are disposed by an authorized and licensed waste disposal facility.

Additional Resources

Campus environmental health and safety officer is [Erin Paulson \(starting July 6\)](#).

Waste – health care industry:

Minnesota Pollution Control Agency

<http://www.pca.state.mn.us/industry/healthcare.html>

Managing waste from health care providers:

<http://www.pca.state.mn.us/publications/w-hw3-34.pdf>

Minnesota State Colleges and Universities Hazardous Waste Management Plan and additional resources:

<http://www.firecenter.mnscu.edu/ehs/environmental/documents/Appendix1toAnnexK.pdf>



Chemical Hazardous Waste: Rules for Safe Handling in the Classroom

Products we use every day can be harmful to humans and the environment depending on their quantity, concentration, or physical, chemical or infectious condition when improperly treated, stored, transported, or disposed of, or otherwise managed inappropriately. The Minnesota Pollution Control Agency regulates the generation, storage and disposal of hazardous waste.

You are responsible to properly handle the chemical wastes you generate:

- 1 **Always** put the wastes in the designated and labeled hazardous waste containers. Your instructor will show you the proper location in the laboratory or classroom for each type of waste generated.
- 2 **Never** mix one type of waste with another.
- 3 **Never** dispose of hazardous waste using sinks, intentional evaporation, or as regular trash. Those are harmful for the environment and against the law. All campus laboratories and classrooms must abide by strict Minnesota Pollution Control Agency and federal Environmental Protection Agency waste disposal requirements. You may be held liable for violations of applicable laws.
- 4 **Immediately report** any spills to the instructor.
- 5 **Remember**, simply because a waste is nonhazardous does not mean it may go into a dumpster or a drain. Other regulations may apply. Ask your instructor.

Hazardous waste includes many types of materials. They are categorized by state and federal laws. The categories are referred to as “lists.” Examples that may be found on campus or in a classroom include:

- Paint and thinners, some brake and carburetor cleaners, vapor degreasing and dry cleaning solvents, distillation bottoms, electroplating baths, sludges, related wastes and wastewater treatment sludges (F List).
- Specific industry process waste from wood preserving; manufacture of pesticides, inks and organic pigments; explosives; petroleum refining; and iron and steel industries (K List).
- Toxic chemical products or spill residues that are unused or unusable. Some types are defined as “acutely hazardous” because they can be fatal to humans, even in small doses (P List). Other wastes in this category, although harmful, are not as toxic as P-listed waste (U List).
- “Characteristic hazardous wastes” exhibit characteristics such as ignitability, corrosivity, reactivity or toxicity (wastes containing hazardous contaminants above maximum allowable concentrations) or lethality.

Hazardous wastes may be generated in laboratory courses or technical courses such as these:

- Biology
- Cosmetology

- 📖Chemistry
- 📖Diesel mechanics
- 📖Art
- 📖Industrial technology
- 📖Automotive technology
- 📖Marine power technology
- 📖Carpentry
- 📖Photographic imaging technology
- 📖Clinical laboratory science
- 📖Welding technology
- 📖Concrete mason

What hazardous wastes will I come in contact with in my academic program?

Your instructor will discuss specific hazardous wastes you may encounter in your class. Each type of hazardous waste is separately stored in a special container designed for that waste. Your classroom has containers for types of wastes you will generate in your academic program.

What happens to the waste after it is put in the labeled waste containers?

From the classroom, the hazardous wastes typically are transferred to a holding spot on campus such as the “satellite accumulation center” or “central disposal storage location”. Eventually, an authorized and licensed waste disposal facility will dispose of the waste. Each waste is separately disposed of in a way that prevents it from polluting the air, water and land.

Additional Resources

Campus environmental health and safety officer is Erin Paulson (starting July 6).

Campus lab chemical hygiene officer is _____.

Minnesota Pollution Control Agency
<http://www.pca.state.mn.us/waste/index.html>

Hazardous Waste Compliance Guide:
<http://www.pca.state.mn.us/publications/w-hw5-25.pdf>

Minnesota State Colleges and Universities Hazardous Waste Management Plan and additional resources:
<http://www.firecenter.mnscu.edu/ehs/environmental/documents/AppendixItoAnnexK.pdf>

Upon request, this publication is available in alternative formats by calling the Minnesota State Colleges & Universities Fire/EMS/Safety Center at: (651) 649-5454; or toll free number: (800) 311-3143; or TTY: (651) 282-2660.

The Minnesota State Colleges and Universities system is an Equal Opportunity employer and educator.