

# Darkroom Safety

## Reed College

### Introduction

We use darkrooms as a means of creating images that are sensitive to light in a way of exploring one's creativity. However, working in a darkroom exposes the occupants to many toxic chemicals in a short amount of time and continued exposure to these chemicals can be potentially hazardous to one's health. The following guidelines will ensure that you have a long and safe adventure in uncovering the many possibilities that are achievable in the realm of creativity.

### General Safety Rules

- Limit access to the darkroom. Only approved persons with safety training are permitted.
- Read the Safety Data Sheets (SDS) before working with a chemical.
- Always practice good housekeeping in order to keep the area safe from hazards
- Keep wet and dry working areas clearly separated.
- Do not store photo chemicals that can cause reactions, if mixed, near each other.
- **Always Add Acid** to water...Never add water to acid. (Remember "AAA").
- Use the least toxic chemicals available.
- Never store chemicals on the floor. Chemicals should be stored in locations that will minimize the chance of breakage and splashing.
- Do not eat, drink, or smoke in the darkroom.
- Keep the darkroom well ventilated.
- Always wear appropriate personal protective equipment (PPE) such as, gloves, goggles, and when appropriate, filtering face pieces.
- Always wash hands with soap and warm water after working with chemicals to avoid possible chemical exposure.
- Know how to use emergency equipment before an actual emergency.
- Keep a spill kit in the darkroom.
- Do not use paper towels or sawdust to clean up acid spills as this may cause a fire.



- Clean up all spills immediately to prevent slipping and falling and to reduce inhalation of chemical vapors.
- Many chemicals can be flammable. Keep them away from any source of heat or open flame to avoid a possible reaction or fire.
- Keep a fire extinguisher that is used for both chemical and electrical fires in the work area.
- Pregnant women should not be exposed to powdered developer or other hazardous chemicals.
- Label all containers.
- Keep all containers and trays closed or covered when not in use to prevent the release of toxic gases/vapors.
- Never wash any chemicals down the sink.

### Safety Equipment and Information

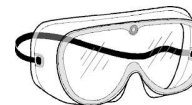
The following safety equipment should be in the darkroom before you begin any procedure:

- Fire Extinguisher
- Spill Kit(s)
- Safety goggles, enough for each person
- Tongs
- Nitrile, Neoprene gloves
- Filtering Face Piece
- Darkroom Safety Guidelines



### Eye Protection

All persons in the darkroom must wear safety goggles at all times, even when not performing a chemical operation.



### Gloves

Wear nitrile gloves at all times when working with or near chemicals. Do not use Latex gloves since they do not provide reliable protection and because many people have an allergy to them. Check to ensure there are no cracks or holes in gloves before each use. Before leaving the work area, remove gloves to prevent the spread of chemicals.



### Clothing

Clothing worn in the darkroom should offer protection against splashes and spills. Wear clothing that is easily removable in case of an accident. Wear aprons or lab coats in this

environment. Protect your feet with close-toed shoes. High-heeled shoes, sandals, open-toed shoes or shoes made of woven materials do not provide any protection. Shorts and miniskirts are also inappropriate when working near chemicals.

### Safety Data Sheets (SDSs)

Safety Data Sheets provide specific chemical safety information for the chemicals you are working with. As part of the Occupational Safety Health Act (OSHA) Hazard Communications standard, they must be available to any individual working with hazardous chemicals.

The regulations state that faculty, staff, and students “have both a need and a right to know the hazards and identities of the chemicals they are exposed to when working in any environment. They also need to know what protective measures are available to prevent adverse effects from occurring.”

SDSs contain the following information:

- Section 1: Chemical Identification
- Section 2: Hazard Identification
- Section 3: Composition/Information on Ingredients
- Section 4: First-Aid Measures
- Section 5: Fire-Fighting Measures
- Section 6: Accidental Release Measures
- Section 7: Handling and Storage
- Section 8: Exposure Controls/Personal Protection
- Section 9: Physical and Chemical Information
- Section 10: Stability and Reactivity Information
- Section 11: Toxicological Information
- Section 12: Ecological Information
- Section 13: Disposal Considerations
- Section 14: Transport Information
- Section 15: Regulatory Information
- Section 16: Other Information

## **Chemical Safety and Storage**

### Chemical Inventory

First, determine which chemicals are present in the darkroom. The chemical inventory should include the chemical name and approximate total quantity. Chemicals in large containers that are not used frequently can become contaminated or degrade. Make sure to keep the inventory current. Always

use older chemicals first.

### Appropriate Storage Practices

All chemicals must be stored properly. This includes proper labeling with the chemical name, hazards (health hazards, etc.), chemical description, and manufacturer information, and must be stored in compatible storage containers. Improperly stored containers can result in the following dangerous conditions:

- Release of potentially toxic vapors
- Degraded containers that allow chemicals to become contaminated
- Degraded containers that release vapors, which can affect the integrity of nearby containers
- Replace deteriorating labels before the chemical becomes an unknown.



Proper chemical storage includes the following practices:

- Label, initial, and date all chemicals when they arrive.
- Use older chemicals first.
- Chemicals must be stored separately.
- All containers must have lids on at all times (except when pouring).
- Chemicals should never be stored at or above eye level.
- All stored chemicals should have secondary containment.

### Mixing of Chemicals

- Read and follow all instructions and safety recommendations provided by the manufacturer.
- Follow mixing instructions precisely.
- If you have to mix powders, do so in a well-ventilated area with an exhaust fan. Always wear a filtering face piece (dust mask) when using powdered chemicals.
- Use the least toxic chemicals available.
- **Always Add Acid to water, NEVER water to acid.**



## Chemical Disposal

### Hazardous Waste Responsibility

As a chemical user, YOU must ensure the proper disposal of all hazardous waste you generate.

Various state and federal penalties can result from improper disposal of these wastes. Properly dispose of chemicals that can pose a present or potential hazard to human health or environment, which includes avoiding accidents and injuries to students, faculty, staff, and the campus community.

If you have any further questions as to what defines a “hazardous waste” or how to treat specific waste chemicals, contact the Environmental, Health, and Safety (EHS) department, 503-777-7788; ext. 7788

### Hazardous Waste Disposal Procedures

When chemicals are no longer in use, follow the steps below to properly dispose of chemicals:

- Be sure to clean up well after you work.
- Place spent chemicals into an appropriate container. (Empty bottles that the chemical was originally stored in are best.)
- **DO NOT MIX SPENT CHEMICALS.**
- Label the container as “hazardous waste” and include the chemical name and the date on the container.
- As soon as the waste container is full, send to the EHS Waste Room, Chem 211, for proper handling and disposal.
- Any questions regarding disposal procedures, contact the EHS Department.



## Emergency Spill Procedures

For **MINOR** spills (ones you can safely clean up by yourself without outside help & without risk of injury):

In the event of a spill involving the release of a type or quantity of a chemical that does not pose an immediate risk to health, and does not have the potential to become a major emergency within a short time period:

- Notify other darkroom personnel of the accident.
- Isolate the area. Close darkroom doors and

evacuate the immediate area if necessary.

- Remove all ignition sources
- Vent vapors to the outside of the building by opening windows and/or turning on a fume hood.
- Choose the appropriate PPE such as gloves, goggles, filtering face piece, lab coat, etc.
- Utilize the spill kit and spill guide.
- Confine and contain the spill with absorbent material.
- Collect the solid material into the dustpan and place into the 5-gallon bucket or other appropriate container.



In the event of a **MAJOR** chemical spill which involves ONE of the following situations:

- A large quantity of chemicals
- An unknown chemical
- A small quantity of a high hazard chemical
- An uncontrollable fire or reaction
- You need help to clean up the spill
- Serious personal injury

Follow the procedures below for handling a major spill:

- Evacuate the room, floor, and/or building as necessary and limit access to the area
- Report the spill to Community Safety at 503-788-6666; ext. 6666
- Stand by from a safe place until help arrives

When reporting a spill, you will need to provide the following information:

- Where the spill occurred (building and room number)
- The materials involved (SPEAK CLEARLY and SLOWLY)
- The amount spilled
- Any immediate actions you took
- How the spill occurred
- Who first observed the spill and at what time
- If there were any injuries that occurred
- A call back number (if available)

In case of these emergencies, you should be aware of what to do:

- Inhalation of chemicals

- Get person to fresh air, call 911, and seek medical attention.
- Ingestion of chemicals
  - Call Community Safety
  - Call Poison Control at 800-222-1222
    - Tell them what the person ingested
    - Follow their directions
    - Check the SDSs for a complete breakdown of any chemicals we use if Poison Control needs more data.
    - Do NOT induce vomiting unless Poison Control tells you to.
- Electrical Shock
  - If necessary, turn off power at the main switch in the fuse box.
  - Call 911 and seek medical attention immediately.
- Chemicals splashed into eyes
  - Immediately flood the eyes with water with cold water and continue to flood them for 15 minutes. Seek medical attention immediately.
- Chemicals splashed onto the skin
  - Immediately flood the skin with water until the chemical is washed away. Seek medical attention immediately if you sense you need it or if any change in skin condition occurs.

References:

- <http://web.wellesley.edu/Safety/Images/finaldarkroomposters.pdf>
- <http://ehs.iu.edu/docs/IUdarkroomsafety.pdf>
- [http://www.hawaii.edu/art/photography/206\\_handouts/206\\_Darkroom\\_Hazards.pdf](http://www.hawaii.edu/art/photography/206_handouts/206_Darkroom_Hazards.pdf)
- <http://www.uvm.edu/~artdept/photoweb/darkroom/safety/safety-practices-in-the-darkroom/>
- <http://www.hamilton.edu/documents/Art%20Photo%20Handbook%2013-14.pdf>