



Safe Handling of Chemicals

For Instructors and Student Lab
Assistants in the Science
Departments

In this training, you will learn ...

- How to use personal protective equipment
- Safe practices for handling chemicals in NMC labs
- Signs of overexposure to chemicals

Personal Protective Equipment (PPE)

- These are the approved styles of chemical splash goggles for use in NMC labs:



- Safety glasses *ARE NOT ADEQUATE*

Personal Protective Equipment (PPE)

- Chemical splash goggles
 - ❖ *Appropriate eye protection must always be worn by instructors, students, and visitors when chemicals are being used in lab activities.*
Chemical splash goggles must be worn any time chemicals, glassware or heat are used in the laboratory.
 - ❖ Students provide their own goggles in chemistry labs; traveling set provided for bio labs
 - ❖ Safety glasses are *NOT* enough protection when using chemicals!

Personal Protective Equipment (PPE)

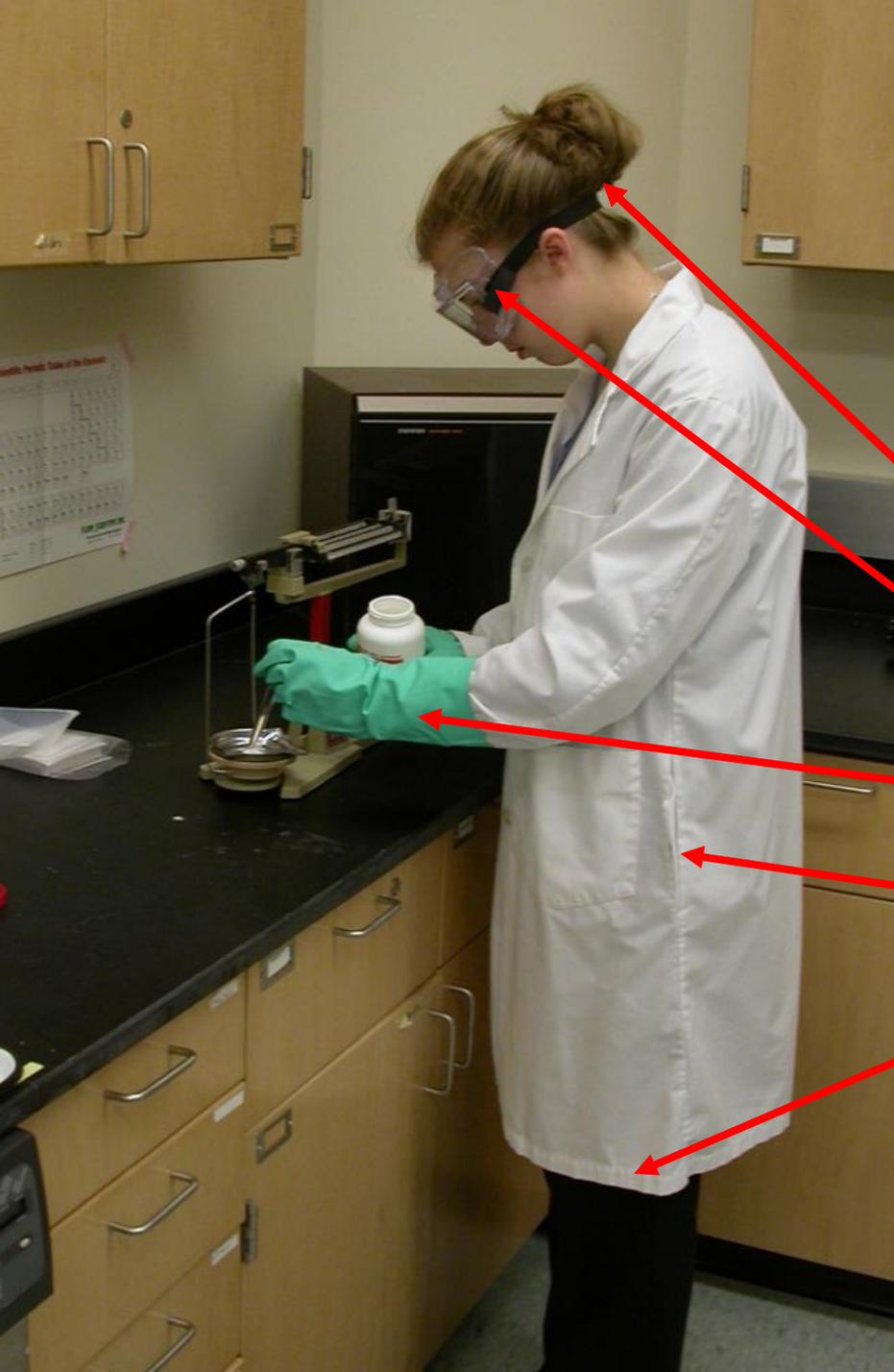
- Gloves
 - ❖ Wear gloves that offer protection for all hazards you may find in the lab.
 - ❖ Check for holes every time you wear your gloves.
 - ❖ Nitrile gloves are provided in each lab.

Personal Protective Equipment (PPE)

- Appropriate clothing
 - ❖ Do not wear open-toed shoes or sandals of any kind. Wear low-heeled shoes and always wear socks in the laboratory.
 - ❖ Do not wear shorts; wear long pants.
 - ❖ Do not wear loose or baggy clothing, especially long sleeves. Secure all loose clothing.
 - ❖ Aprons are provided in prep areas for use when working with hazardous chemicals.

The Well-dressed Lab Assistant

- ✓ Long hair tied back
- ✓ Splash goggles
- ✓ Chemical-resistant gloves
- ✓ Lab coat
- ✓ Long pants



Handling chemicals:

- Do not smell or taste chemicals. Waft odors to your nose by waving your hand.
- Avoid skin contact or inhalation of chemicals.
- Never use flammable liquids near any source of ignition, spark or open flame.
- Dispense concentrated acids and volatile chemicals in a fume hood.
- Review and follow Safety Rules for Students in the Chemical Hygiene Plan.

Handling chemicals:



- Use a pipetting device; *never* pipet by mouth!
- Always pour chemicals over a shallow pan to contain possible spills

Transporting chemicals



Pull carts over thresholds and on or off elevators, lifting the front wheels. Don't push!

Always use plastic or rubber bottle carriers or tubs if transporting acids or bases from one room to another.



Proper chemical storage ...

- Areas where hazardous chemicals are stored must be kept locked. Please lock storage areas after use.
- Store acids and bases separately.
- Store flammable chemicals in an appropriate cabinet.
- Only instructors, the Lab Manager, and trained lab assistants are authorized to enter chemical storage areas.

Common signs of overexposure to hazardous chemicals:

- Skin rashes or dermatitis
- Irritation to the eyes, nose, throat, upper respiratory tract, or skin
- Burns to the skin or eyes
- Fatigue, dizziness, headaches, lightheadedness, loss of coordination, insomnia, muscle or joint pain
- Persistent cough, wheezing, tightness of the chest, chest pain, difficulty breathing, shortness of breath
- Nausea, vomiting, abdominal pain
- The symptoms of overexposure to a particular chemical will be listed on the substance's MSDS.

If someone is exposed to a hazardous chemical:

- If you think it may be life-threatening, **CALL 911**
- Eye Contact: Promptly flush eyes with water for at least 15 minutes (until emergency personnel arrive).
- Skin Contact: Promptly flush the affected area with water and remove any contaminated clothing. If symptoms persist after washing, seek medical attention.
- Ingestion: Call 911 for advice

What else to do if someone is exposed:

- All accidents or near accidents (close calls) should be carefully analyzed with the results distributed to all who might benefit.
- Report any student emergency or incident requiring first aid to the Lab Manager and the Educational Services Office as soon as possible.
- The Lab Manager will maintain records of all lab accidents or incidents.

These chemicals DO NOT go in the trash or drain:

- Sulfur
- Organic solvents
- Solutions containing chromium, heavy metals, barium, silver
- *When in doubt, label the material in an appropriate container and notify the Lab Manager*

Five things to remember when working with students and hazardous chemicals

- Include Safety & Hygiene Rules and Protective Clothing Requirements in your course syllabus
- Show students locations of safety equipment and how to operate during the first lab session
- Know the safe handling procedures for each hazardous chemical you are using
- Set an example and wear necessary protective equipment
- Follow disposal procedures prescribed by the Lab Manager