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# Chem Lab Basics (Quickstudy: Academic)

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## CHEMLAB BASICS

CHEMISTRY SAFETY AND LAB GUIDE

### SAFETY TRAINING

- Safety is an integral part of working in the chemistry laboratory. A responsibility shared by students and instructors.
- Learning about safety is part of your education; skills you gain in the lab will serve you in future careers and in life...if nothing else they will make you a better cook!

**Be Prepared** - Where is the \_\_\_\_\_

- Lab exit - Know how to get out fast in an emergency.
- Nearest phone - Dial 911 or local emergency number.
- Flame hood - Use for any noxious reagent.
- Eyewash station and safety shower - For washing skin or eyes exposed to chemicals.
- Fire-extinguisher - Use to douse small fires.

**Personal Responsibility:**

- Rule 1:** Protect yourself! Your mistakes will likely harm you more than anyone else.
- Rule 2:** Read the lab manual before class. Come to lab prepared to work on the assigned experiment.
- Rule 3:** Always pay attention as you work. Watch other students; you are impacted by their mistakes.
- Rule 4:** Clean up your own mess...You are a partner in maintaining a safe lab.

- Keep your work space clean and organized.
- Wash labware with detergent; rinse with deionized or distilled water; use a wash bottle to conserve water; drain excess liquid; allow object to dry before storing.
- Sharps equipment: wash before each use.
- After each lab session, return reagents and equipment to the designated storage areas.

### EXPOSURE TO CHEMICALS

While working in the lab you will use a number of reagents, giving ample chance for exposure to the harmful effects of chemicals.

**Possible risks:**

- Inhaling chemical powder or vapor
- Ingesting solid or liquid chemicals by mouth
- Puncturing skin with a sharp object and injecting chemicals into your body
- Absorbing chemicals through your skin

**KNOW YOUR LAB REAGENTS**

Some chemicals are toxic; all can cause harm if used incorrectly. Learn about reagents before using them in an experiment. Read your lab manual and textbook; talk to your instructor; if in doubt, ask questions!

**MSDS Hazard Codes (National Fire Protection Association) (pictographs never shown here)**

<b>1</b> Health	<b>2</b> Irritant	<b>3</b> Moderate Hazard	<b>4</b> Very Hazardous
<b>5</b> Very Toxic	<b>6</b> Extremely Toxic	<b>7</b> Corrosive	<b>8</b> Very Corrosive

**Material Safety Data Sheet (MSDS)** gives a description of the hazard a substance may pose.

**Chemical Storage Codes**  
(chemicals in the same color group are normally to stored together, exceptions noted on the label)

- Health Hazard
- Reactive and Oxidizing
- Flammable
- Corrosive
- Minimal Hazard

### WORKING WITH CHEMICALS

**Heating labware:**

- Use tongs to handle labware while it is heated by a burner or hotplate.
- Allow the items to cool to room temperature before weighing.

**For liquid reagent:**

- Cover the beaker with a watch glass.
- Use "boiling stones" to promote smooth boiling.
- Flammable solvent: take care when heating with hot plate; avoid use of gas burner.
- Handle test tube with wire-holder.

**For solid reagent:**

- Use a weighing dish on the balance.
- Cover the dish to prevent loss, spills or contamination.

### FIRST AID

Check with instructor for local guidelines.

- Burns from hot labware:** Minor: apply cold water. Serious: contact medical help.
- Cut from broken glassware:** Minor: Wash with soap, apply antiseptic and sterile bandage. Serious: Control bleeding by applying pressure with sterile pad; contact emergency medical help.
- Skin exposure to a chemical:** Rinse with water; if condition develops, contact medical personnel.
- Eye lighthazard (or passing out):** Notify affected person to fresh air outside of the lab; contact medical personnel if the condition persists.
- Burning clothing:** Do not panic; drop to the floor and smother the flames; use safety shower to treat burn; contact emergency medical personnel.

### GENERAL LAB GUIDELINES

- Always work with instructor supervision.
- Always wear goggles in the lab, even over eyeglasses; replace contact lenses with eyeglasses.
- Wear an apron, lab coat and gloves to limit your chemical exposure and to save clothing from chemical stains.
- Wear closed-toed shoes to protect your feet.
- For back hair and avoid bulky sleeves which interfere with work.
- Food and drink should not be in the lab.
- Wash your hands after each session, before leaving the lab.

### CHEMICAL SPILLS

**On the floor or benchtop:**

- For small spill: wear gloves, neutralize acid/ base, absorb using paper towels and discard in a labeled bag.
- Larger spill: Notify the instructor; wear gloves and shoe protectors; use a spill kit designed for the chemical.
- Clean up all spills promptly to prevent further accidents.

**On your clothing or skin:**

- Remove affected article of clothing; wash exposed skin with water and apply first aid. Treat promptly to minimize harm.
- If a spill occurs on your face, use the safety shower; flush apply first aid.

### WASTE MANAGEMENT

- Follow the instructor's directions for disposal of all lab materials. Most chemicals should not be poured down the drain.
- All toxic metals and halogenated solvents must be collected for proper disposal.

**Waste Precautions:** Use only the required amount of reagent; excess material cannot be returned to reagent jar; it is "waste". A spot plate is an excellent means to conserve reagents.

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## Synopsis

This 2-page study guide contains basic chemistry analysis and concepts designed specifically to aid science students.

## Book Information

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I've purchased several of the Bar Charts items to help out with Chemistry before I bought this, and honestly I hadn't used many of the information contained in those besides the atomic weights on the Periodic Table. The laminated sheets are rather eye-catching, but wasn't until last week that someone noticed my "Advanced Periodic Table" in my notebook. With that envy in mind, I sought this helpful guide to add to my growing Bar Charts library. The information in this particular "Chem Lab Basics" won't get you an A, but it should jog your memory in advance of an exam, or remind you of various hazards you didn't hear your professor mention. Plus it has 3-hole punching and is laminated!

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[http://www..com/gp/product/1423204182/ref=cm\\_cr\\_rev\\_prod\\_img](http://www..com/gp/product/1423204182/ref=cm_cr_rev_prod_img)It has been quite a few years since my own school days, and the Quickstudy guides helped in my preparation to teach a lot of high school subjects. The Quickstudy guides are extremely useful as review guides. My son used his chemistry and mathematics guides as short, but thorough, refreshers. They helped him to prepare for the ACT and SAT, and he did very well. He raised his ACT score by 3 points. The Quickstudy guides are printed on high-quality stock, then well-laminated. They even have holes so they can fit handily into a binder or a folder. I recommend this series!

This laminated card is awesome

Good basic guide.

Not that useful for college chem. Was recommended but not needed at any moment. Could be useful for high school stuff? I'm not sure.

I purchased this product for a college intro class, it isn't very helpful for me personally. Maybe for students in other classes.

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