

Hand and Power Tool Safety

We use tools frequently in everyday life. From a simple pair of scissors or a screwdriver to a complex metal-working machine, tools make our work easier. But no matter how simple, a tool used incorrectly can cause serious bodily harm. It is important to think before using any tool and consider the potential hazards. Make SAFETY a priority.

There are two areas of concern when dealing with the proper use of tools – in this order:

- 1) Personal Safety – no one gets injured.**
- 2) Tool Care – tools are not damaged.**

General Practices

- Never work alone!
- Before working in a lab, know where the phone, fire alarm and emergency exit is.
- Use the right tool for the job.
- If you don't know what a tool is or how to use it, DON'T.
- If you don't know what tool to use for a task, ASK.
- Return tools to their proper storage area when you are finished.
- Do not use paint (spray or brushed) or anything that gives off fumes in a closed room, go to a room with proper ventilation or outside.
- Dispose of sharp or potentially sharp objects in a designated container; this includes knife blades, glass (broken or whole), needles, nails, etc.
- Do not put your hand behind anything you are working on with hand or power tools.
- Nothing is a ladder except a ladder; make sure ladders are stable.
- Be sure to keep good footing and maintain good balance.

Personal Preparation

- Hair – long hair should be tied back out of your way.
- Jewelry – remove rings, chains and other jewelry.
- Clothing – change loose or baggy clothing or make sure it is securely fastened.
- Eyes – wear safety glasses at all times in a work area.
- Ears – wear ear protection if in a noisy area.
- Hands – wear leather gloves when handling rough wood and other materials, do not wear gloves when operating power tools.
- Lungs – use a respirator if in a dusty area or if vapors are present.
- Feet – do not wear sandals or open-toed shoes.

- Mind – do not use power tools when you are ill, taking strong medications, fatigued or consuming alcoholic drinks.

Work Area

- Lighting – make sure there is enough lighting to see what you are doing.
- Footing – make sure the floor is not slippery; no water or dust.
- Clamping – make sure your work piece is on a firm surface or securely clamped.
- Space – keep the work area clear and uncrowded.

Tools – do not leave tools lying on the floor.

Hand Tools

- Do not use a screwdriver or pliers on electrical equipment unless is it certified for electrical use.
- Never use a screwdriver as a hammer, chisel or pry bar.
- Use the correct hammer for the work being done.
- Have an unobstructed swing when using a hammer (overhead clearance and other people).
- When using a wrench, make sure it is the correct size.
- Always pull on a wrench, if it slips you won't crush your fingers.
- Do not use wrenches or bars as extensions for hand tools.
- When using a knife, cut away from your body keeping hands and body away from the knife stroke.
- Make sure tools are sharp, dull tools can actually be more dangerous.
- Cover sharp tools when not in use.

Power Tools

- Do not operate power tools in damp or wet locations without Ground Fault Circuit Interrupt (GFCI) protection (the type of outlet found in kitchens and bathrooms).
- Never carry a tool by the cord.
- Never yank the cord to unplug it.
- Make sure the cord is not in the cutting path.
- Do not operate a power tool if the cord or tool is damaged.

- Unplug the tool before making any adjustments and when it is not being used.
- Use two hands on a power tool whenever possible.
- Place fingers so there is no danger they will slip into moving parts.
- Keep your finger off the trigger of a power tool when you aren't actually using it.
- Give your job your full attention, do not look away or talk to others.
- Never startle someone who is using a power tool.
- Observers and helpers should stand back, use the proper protective gear and follow the instructions of the tool operator.
- Parts that are being worked on can get very hot, be careful handling them.

Electrical Safety

- Be sure power is **off** before working on electrical equipment or circuits.
- Do not defeat grounding plugs on equipment.
- Two-pronged plugs are usually polarized – it is dangerous to reverse polarization.
- Only use an extension cord when necessary and make sure it is the proper size for the current draw of the equipment.
- Do not use multiple power strips chained together.

If you don't feel comfortable using a tool, ask someone to do it for you!