

Student Handout

Electricity

Electric shock and electrocution happen when a person becomes part of an electrical circuit and the current flows through their body. Accidents and deaths can also happen when equipment becomes 'live' due to electrical faults, lack of maintenance, or short circuits.

Examples of hazards

- ❑ burns from hot components
- ❑ electrical shocks

Safety tips

- ❑ Use electrical equipment according to manufacturers' instructions.
- ❑ Keep electrical equipment in safe working order through inspection and preventative maintenance programs.
- ❑ Disconnect and report faulty equipment (e.g., frayed cords or broken power points). Always switch off electrical equipment at the power point before pulling out the plug.
- ❑ Keep electrical cords off the floor to reduce the risk of damage from dragging, contact with sharp objects, or contact with water. A damaged electrical cord can cause electrocution.
- ❑ Know the location of the main electricity supply. If a breaker or fuse blows, disconnect the power source, then identify and fix the problem before resetting the breaker or replacing the fuse.
- ❑ To prevent getting a shock, follow lockout procedures before working on electrical items (see Student Handout on Lockout).
- ❑ Wear shoes with insulating soles and/or stand on a non-conducting mat.
- ❑ If someone gets an electric shock, shut off the power before trying to help them.



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- Only use hand tools that are insulated against electric shock (e.g., plastic or rubber handles).
- Water is a great conductor of electricity, so do not work in wet conditions; when this is unavoidable use a ground fault circuit interrupter (GFCI).

Safety Alert

Insulated hot water pipes with **240-volt heat trace cables** are used to maintain water temperature in many modern apartments. If power to the heat trace cable is not isolated, there is potential for electrocution when a plumber unknowingly cuts through the insulated pipe. Simply turning off the water supply valve will NOT shut down the power to the cable.

The steps to avoid electrocution occurring in this way are:

- Treat all hot water lines as having heat trace cables to maintain water temperature until otherwise established.
- Switch off, lock and tag the 240 volt supply to the cable.
- Remove insulation carefully and inspect the pipe to locate any heat trace cables. This can be done with a sharp blade that will remove insulation but will not penetrate the protective outer casing of the cable.

