

WSU-TFREC Fire Safety Training



WSU-TFREC

- Locate the nearest exits, alarms and fire extinguishers to your work area
- Floor plans are available online:
 - **Overley Building**
<http://tfrec.cahnrs.wsu.edu/admin/overley-floor-plan-fs/>
 - **Entomology Building**
<http://tfrec.cahnrs.wsu.edu/admin/entomology-floor-plan-fs/>
 - **Soils Building/Greenhouses**
<http://tfrec.cahnrs.wsu.edu/admin/soil-annex-floor-plan-fs/>
 - **Insect Ecology Lab (Annex)**
<http://tfrec.cahnrs.wsu.edu/admin/insect-ecology-floor-plan-fs/>

Fire Hazards

- Fire hazards at WSU-TFREC include:
 - Open flame
 - Electricity
 - Chemicals
 - Flammable/combustible materials
 - Compressed gases
 - Smoking
- Your supervisors will inform you of the specific fire hazards in your work area

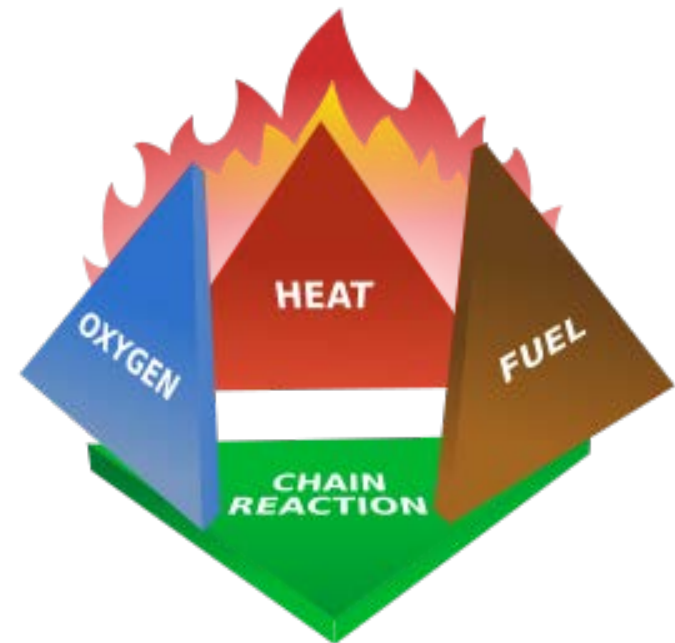
Fire Alarms

- Fire alarms are located:
 - Overely Building (all exits)
 - Insect Ecology Lab (all exits)
- There are no fire alarms in the Entomology or Soils lab—in case of fire, coworkers should be notified verbally



Four Elements of Fire

- Four elements must be present for a fire to occur:
 - Heat
 - Fuel
 - Oxygen
 - Chemical chain reaction between heat, fuel and oxygen



Chemistry of Fire

- A fire occurs when heat is applied to a fuel source in the presence of oxygen
- When sufficient heat is applied to the fuel, a chemical reaction occurs, causing additional heat to be given off and the fuel to be consumed



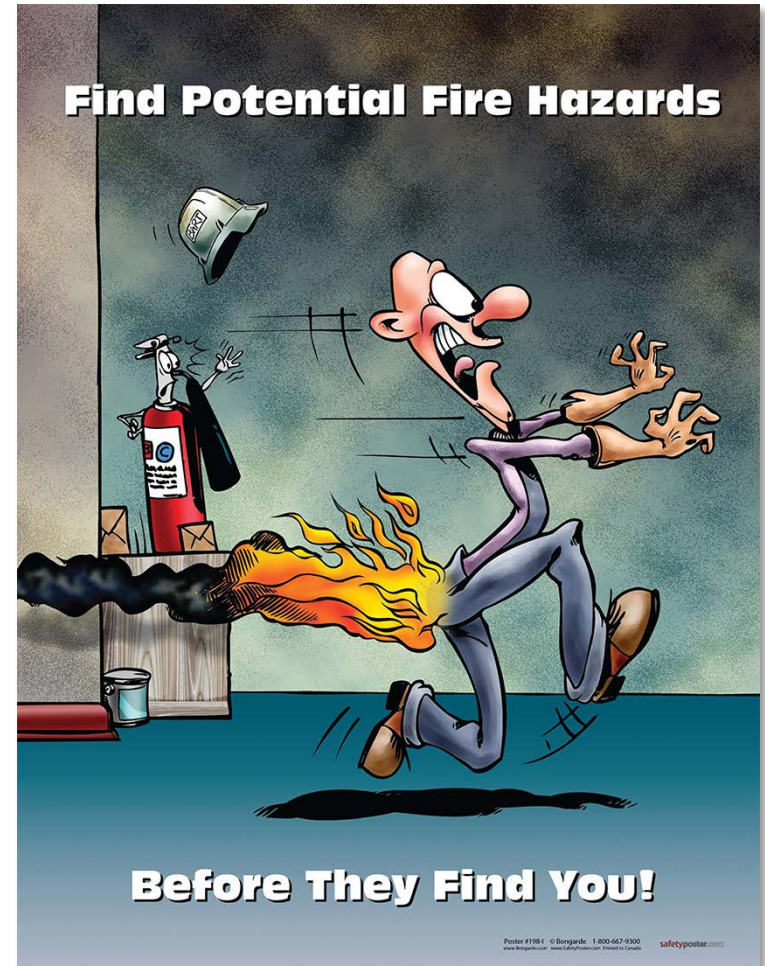
Chemistry of Fire

- All fires are dangerous and even small fires can quickly turn to disasters if employees do not know how to respond
- In the workplace there are dozens of ways fires can start, including:
 - Chemical
 - Electricity and flammable liquids
 - Compressed gases
 - Poor housekeeping



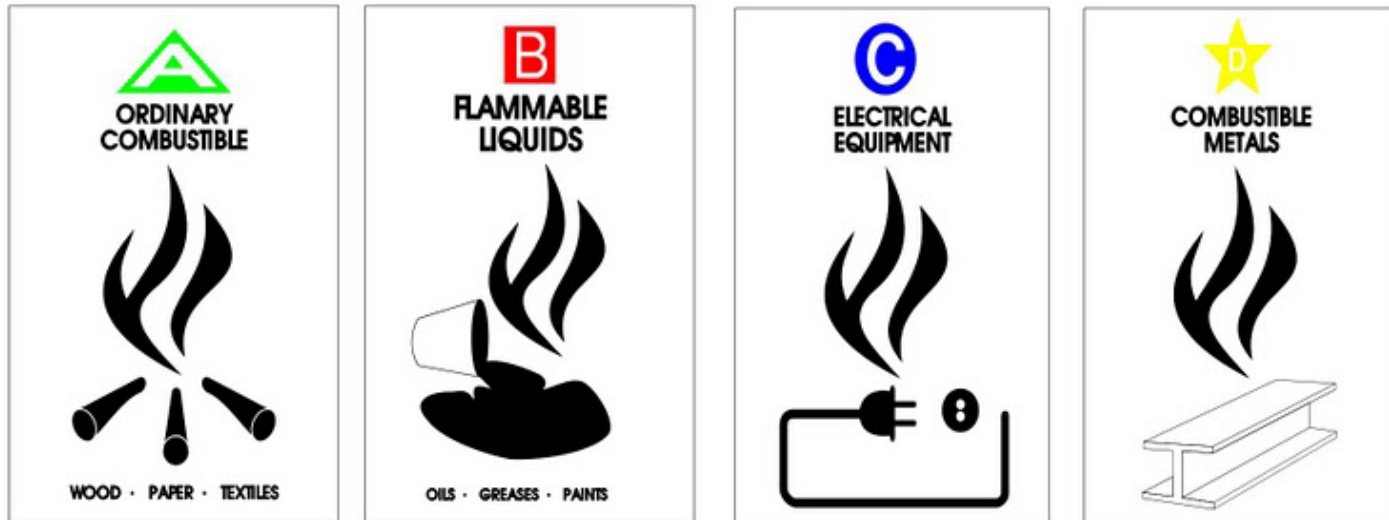
Fire Hazards

- Hazards from fire include:
 - Flames and heat
 - Burns
 - Release of toxic vapors
 - Explosions
 - Suffocation



Fire Classifications

- Fires are classified into four categories depending on the type of material involved
- The type of fire determines the type of extinguisher used to extinguish it



Fire Classifications

- Class A = Paper, cloth and wood
- Class B = Gas, liquid and grease
- Class C = Electrical
- Class D = Metal (sodium, potassium, magnesium)



Fire Prevention

- Fires can be prevented
- Basic rules of fire prevention include:
 - Eliminating fire hazards
 - Knowing how to respond if a fire breaks out



Fire Prevention: Electrical

- To prevent electrical fires
 - Do not overload circuits
 - Do not use damaged cords (especially on power tools)



Fire Prevention: Chemical

- Before using chemicals, read the MSDS to determine:
 - The flash point
 - Flammability
 - Reactivity
 - Whether the chemical is a fire hazard
- While using chemicals:
 - Provide adequate ventilation
 - Keep combustibles away from heat sources to prevent chemical fires

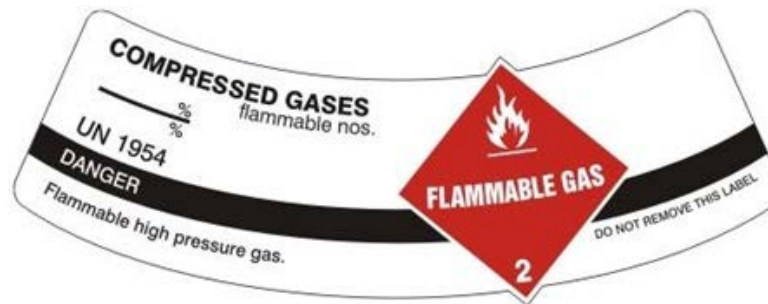
Fire Prevention: Flammable/Combustible

- When working with flammable and combustible liquids such as gasoline or solvents:
 - Keep liquids away from ignition sources
 - Store liquids in closed containers
 - Limit the amount of flammable materials used at any one time



Fire Prevention: Compressed Gases

- When working with compressed gasses:
 - Handle cylinders containing flammable liquids with extreme caution
 - Keep cylinders away from heat
 - Chain cylinders to the wall



Fire Prevention: Housekeeping

- Good housekeeping will prevent fires:
 - Never block fire exits
 - Clean up flammables and combustibles
 - Dispose of solvent soaked rags in an airtight container



Fire Prevention: Smoking

- Smoking can be fire a hazard:
 - Obey “No Smoking” signs
 - Don’t smoke near flammable or combustible materials
 - Never leave a lit cigarette unattended



Fire Prevention: Space Heaters

- Space heaters can be fire hazards:
 - Use only approved space heaters (SPPM 8.50)
 - Keep space heaters away from combustibles
 - Use space heaters in accordance w/manufacturer's directions



Fire Response

- Even a small fire can lead to a serious emergency
- Take fire drills seriously
- Know your escape routes from all workstations
- If you spot a fire, sound the alarm



Fire Response

- If you hear a fire alarm:
 - Alert co-workers
 - Turn off machinery
 - Close all office and lab doors (do not lock)
 - Leave by the nearest exit
 - Meet at the flagpole (west side of TFREC near the USDA)



If You Spot a Fire

1. Sound the alarm
2. Alert your co-workers
3. Turn off machinery
4. Close all lab and office doors
5. Exit the building
6. Notify the fire department
7. Head to the flagpole



In Case of Fire

- Fight a fire ONLY if:
 - The fire department has been notified of the fire
 - The fire is small and confined to the area of origin
 - You have a way out and can fight the fire with your back to the exit
 - You are trained and confident about using a fire extinguisher



Fire Extinguishers

Fire extinguisher classification markings are located on the front of the fire extinguisher, either above or below the nameplate



Fire Extinguishers

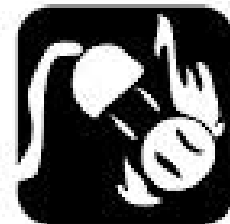
- Portable fire extinguishers are provided in work areas based on the anticipated fire hazard
- Read the labels of the fire extinguishers in your area to determine the type of fire it can extinguish
- Using the wrong fire extinguisher can make the fire worse



ORDINARY
A
COMBUSTIBLES



FLAMMABLE
B
LIQUIDS



ELECTRICAL
C
EQUIPMENT

Using a Fire Extinguisher

PASS

Pull the pin

Aim at the base of the fire

Squeeze the handle

Sweep from side to side



Extinguisher Types: Water

- Water extinguishers are designed for Class A (wood, paper, cloth) fires only
- Disadvantages include:
 - Potential to conduct electricity
 - Spreading Class B fires
 - Freezing in cold climates
 - Carrying pollutants in run-off water



Extinguisher Types: CO₂

- Carbon dioxide extinguishers are designed for liquid Class B and electrical Class C fires only
- You can recognize a CO₂ extinguisher by its large wide nozzle and lack of a pressure gauge
- CO₂ extinguishers are frequently located in laboratories, mechanical rooms and near flammable liquid storage



Extinguisher Types: Dry Chemical

- Dry chemical extinguishers are filled with a fine powder that stops the chemical reaction and reduces the available air
- Nitrogen is used to pressurize ABC extinguishers ranging from 5 to 20 pounds
- Most of the fire extinguishers at TFREC are dry chemical



For a Small Fire

- If you are not sure of your ability to fight the fire

OR

- If you are not sure of the fire extinguisher's capacity to contain the fire



Exit the Building

Do NOT Fight a Large Fire

Gas Fires

- Do not attempt to extinguish a gas fire (including gas cylinders) until the gas is shut off
- If you extinguish a gas fire before the source is shut off, gas can accumulate in the area and create an explosion hazard



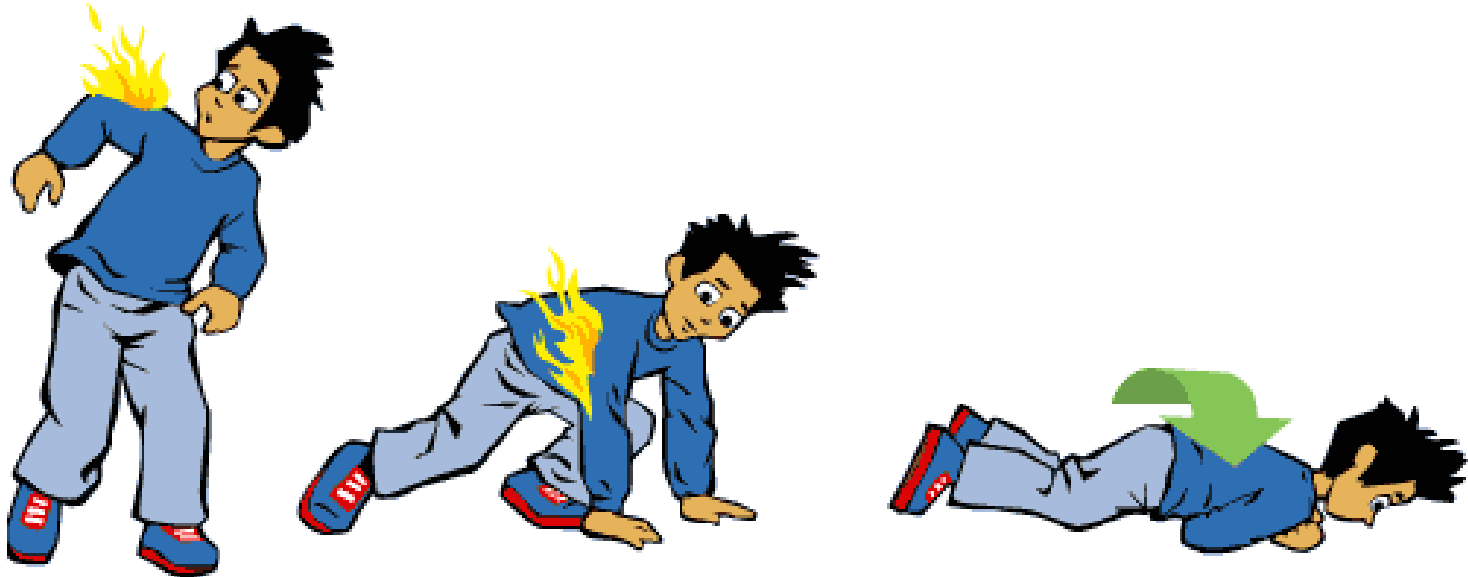
Oil Fires

- Use dry chemical or carbon dioxide to extinguish an oil fire
- CO_2 gas deprives the fire (and potentially you) of oxygen
- After the fire is out, it is important to remove the CO_2 from the air
- Do not return to the area until it has been ventilated



Fire Response

- If your clothing catches fire:
 - Stop
 - Drop
 - Roll



Summary

- Review the floor plan for your building to locate fire extinguishers
- Certain fire extinguishers are used for specific types of fires
- Remember PASS (Pull, Aim, Squeeze and Sweep)
- In the event of fire, your first response is to sound the alarm

