

# TOOL BOX TALKS

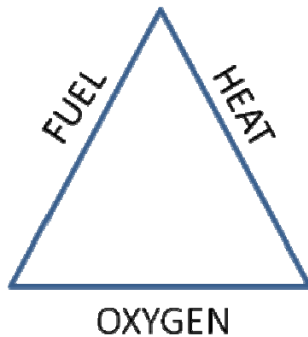
## Principles of Fire

Fire is an oxidation process that emits light and heat. Learn the principles of how fire is created, and how these principles can be applied to everyday fire prevention methods. Understand the conditions needed for materials to burn. Understand how to look for fire hazards in your facility. Make employees follow housekeeping practices to prevent fire. Regularly train fire prevention methods. Gather employees together to discuss the principles of fire!

## WORKSAFE TIPS

### THE FIRE TRIANGLE

- Three things are needed to sustain a fire:
  - Fuel
  - Oxygen
  - Heat
- Combined with a chain reaction and fire can result.
- Take one component away, and the fire dies.
- Use this methodology in fire prevention practices!



### FIRE PREVENTION METHODS

#### Fuel *removal*

- Keep the quantity of stored combustibles at a minimum.
- Block storage areas with fire doors.

#### Heat *Removal*

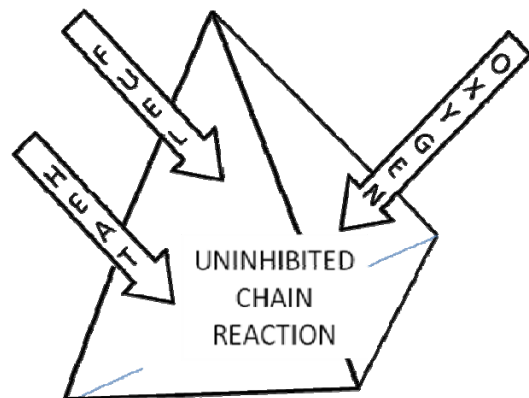
- Keep heat sources controlled.
- Prevent fires as a result of welding or cutting, torches, heating equipment or sparks.

#### Oxygen *Removal*

- Use a foam to blanket and snuff fires.
- Remove air (and oxygen) from an airtight room

### THE FIRE TETRAHEDRON

- Four elements of fuel combined
- Fuel, Oxygen, Heat, Uninhibited chain reaction
- To sustain a fire, all four of these elements must be available at the same time.



### FIRE EXTINGUISHING PRINCIPLES

- Remove any ONE part of the fire tetrahedron and the fire will be extinguished.
- Remove oxygen – the fire cannot breathe.
  - Cover fire with foam or a lid
  - Smother the fire by covering it
- Remove fuel – there is nothing to burn.
  - Shut off gas lines fueling the fire
  - Divert flow of liquids
- Remove heat – fire dies due to lack of energy
  - Cool fire with water spray
- Interrupt the chain reaction and the three other components
  - Using a chemical extinguisher or halon, which stops the chain reaction



**Smart, Accident-Free Environments**

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