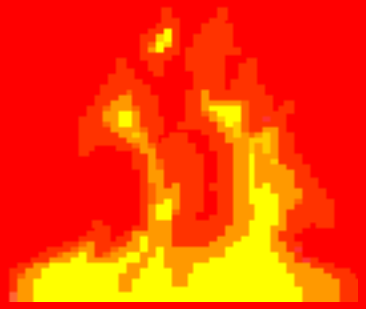
Workplace FIRE SAFETY



FIRE!

Fire claims the lives of over 5,000 people each year in the United States. Fire also causes thousands of disabling injuries, millions of dollars of property damage and countless lost jobs each year.

Know the dangers

Flame, heat, and smoke are the obvious fire dangers. Other dangers include:

- Suffocation
- Toxic Vapors
- Explosions

You can prevent fire and its deadly damage when you:

- Eliminate fire hazards
- Learn how to respond quickly and properly to a fire

Use the information i

PREVEN

Keep these 3 c

coming t

Workplace Fire
Prevention Knowledge

QUIZ (CONT.)

Directions: Complete each of the following statements. Write your answers on the lines

9. Never put _____ cords under carpets or rugs

10. You can _____ fire hazards through good housekeeping and other safe work practices.

Answers: 1. explosions 2. ignition 3. escape 4. sweep 5. electrical 6. label 7. vapors 8. smoke 9. extension 10 eliminate

Workplace Fire
Prevention Knowledge

QUIZ

Directions: Complete each of the following statements. Write your answers on the lines

1. Dangers of fire include flame, heat, smoke, suffocation, toxic vapors and _____.

2. Fire is a chemical chain reaction involving fuel, oxygen and an _____ source.

3. To survive a fire, you need to know your _____ routes.

4. When using a fire extinguisher, remember PASS—**P**ull, **A**im, **S**queeze, and _____.

5. Most workplace fires start from _____ equipment or system failure

6. You can find important chemical fire prevention information on the MSDS and on the _____.

7. Flammable chemicals present a special fire hazard because of invisible _____.

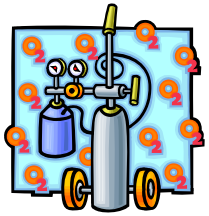
Never _____ near combustible materials or flammable liquids

FIRE!

—A Chemical Reaction

Fire develops when 3 elements create a chain reaction:

☐ **Fuel—**solids (combustibles like paper, wood, rags), liquids (solvents, gasoline, oil), flammable gases and vapors.



☐ **Oxygen—**The greater the concentration of oxygen, the brighter the blaze and the more rapid the burning. Try to reduce extra sources of oxygen.

☐ **Ignition Source—**such as sparks, arcs, flames, or sources of heat that could cause vaporization

n this booklet to help

IT FIRES
elements from
ogether!

Workplace
FIRE EMERGENCY!

- ***Know your escape route***
  Your employer is required to have an emergency evacuation plan. Learn escape routes from all of your work areas. In a real fire, dense smoke may reduce your vision and the lights may be out.

- ***Fire drills are important***
  Know the sound of emergency alarms in your facility. Pay attention during drills so you know what to do and where you are to report.

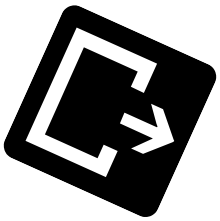
- ***Act fast***
  If you spot a fire, activate facility alarm systems. When an alarm sounds, get out immediately according to your escape plan.

- ***If time permits your plan may tell you to:***
  - Warn others
  - Turn off equipment
  - Close non-escape windows and doors

REMEMBER THE

- **Most fire extinguishers are em**
- **Do not attempt to fight a large**
  keep your back to an exit.

Learn *Not* to Burn



You can take steps everyday to prevent fire:

- Know the causes and how to prevent fires
- Review escape routes and emergency plans
- Eliminate fire hazards through good housekeeping and safe work practices

And make your home safe from fire too!

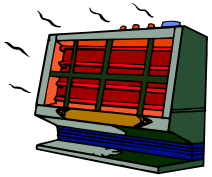
- Remove all fire hazards
- Have working smoke and fire detectgors on each floor of your home. Test monthly and replace batteries when needed
- Make a fire escape plan and practice it regularly

Smoking, Space Heaters, And Office Fire Hazards

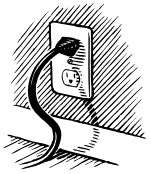
Smoking

- ☐ Obey ***NO SMOKING*** signs and rules
- ☐ Never smoke near combustible materials—paper, wood, textiles—or where flammables are handled
- ☐ Extinguish and dispose of cigarettes and matches in metal containers labeled for that purpose

Space heaters



- ☐ Use only laboratory-approved heaters and always use the proper fuel
- ☐ Provide good ventilation
- ☐ Turn off and allow to cool before refueling
- ☐ Locate away from combustibles and protect from tipping over



Office Safety

- ☐ Don't overload electrical circuits or outlets
- ☐ Pull the plug on equipment that sparks or smokes
- ☐ Never place extension cords under carpets or rugs
- ☐ Keep storage areas clear of rubbish

FIRE

Extinguisher Safety

☐ ***Know the extinguisher to use for each fire class.***

Class:

[A] for fires involving combustibles like wood or paper

[B] **[B]** for flammable liquids and gases
[C] for fires where electricity may be present
[D] for combustible metals like magnesium

Fire extinguishers are labeled for use on either a single class of fire [A] or [D], or for multiple classes of fires [BC], or [ABC].

☐ ***Only trained employees should use fire extinguishers.***

Use PASS:

Pull the pin
Aim hose at base of fire
Squeeze trigger
Sweep back and forth with the extinguisher

SE FIREFIGHTING TIPS

ptied in less than a minute.
fire. Always leave yourself a way out—

Workplace
FIRE PREVENTION

Electrical fires

A major cause of workplace fires is the misuse of electrical equipment or electrical system failure. These fires result from:

- Overloaded fuses, circuits, motors, or outlets
- Wiring with frayed or worn insulation
- Loose ground connections
- Lights or machinery in contact with combustible materials
- Defective power tools that spark

In case of an electrical fire:

- Never touch the burning object or person
- Turn off the power if possible
- Extinguish a small fire with a carbon dioxide or multipurpose ABC fire extinguisher—never water
- Activate our facilities fire response system

Housekeeping to Prevent FIRES

Many fire prevention tips are also good housekeeping procedures. Use this checklist to keep your workplace free of fire hazards.

- ☐ Keep motors and machine tools free of dust and grease.
- ☐ Use non-flammable cleaners
- ☐ Repair and clean up flammable liquid leaks immediately
- ☐ Remove closthing splashed with flammable liquids immediately
- ☐ Store flammable materials in designated locations

- ☐ Keep incompatible substances away from each other
- ☐ Dispose of combustible waste in covered, airtight metal containers
- ☐ Sweep up dust, lint, sawdust, scraps, etc.
- ☐ Keep doors and passageways clear
- ☐ Stack materials so they don't block sprinklers or exits.

Welding, Cutting, & Brazing

Welding, cutting, and brazing activities use heat, electricity, flame, and potentially hazardous materials. Welding and cutting operations must be authorized and may require a hot work permit. Here are some special fire prevention requirements.

- ☐ Weld only in areas with fire-resistant floors or use protective shields.
- ☐ Protect open doorways, broken windows, etc. with a fireproof curtain
- ☐ Before starting work, check for expolsive atmosphere using a combustible gas indicator
- ☐ Relocate combustibles, such as trash, to at least 35 feet away from the welding
- ☐ Don't work on empty containers unless yo're sure there are no toxic or flammable vapors left inside. Always check with a combustible gas indicator
- ☐ Have suitable extinguisning material nearby, such as a fire extinguisher, pail of water, fire hose, or pail of sand
- ☐ Designate a "fire watch" to look out for stray sparks or smoldering fires during and after work is completed.

Electrical Equipment
DO'S & DON'TS

DO

- ☐ Replace wires when insulation gets frayed or worn
- ☐ Use the correct fuse for the job. An overrated fuse could create a dangerous overload condition
- ☐ Use extension cords that are in good condition and adequate for the task
- ☐ Check the ground connections—proper ground provides a safe path for electricity if there is an electrical fault
- ☐ Keep combustible materials away from lights and machinery

DON'T

- ☐ Use temporary wiring
- ☐ Overload motors, bearings, circuits, and outlets
- ☐ Leave heating equipment or machinery running unsupervised
- ☐ Let grease, dust, or lint build up on machinery
- ☐ Place cords near heat or water
- ☐ Use defective equipment
- ☐ Put cords under rugs

Prevent Chemical FIRES

Material Safety Data Sheets (MSDS) and chemical labels provide important fire prevention information

☐ ***MSDS***

Always review the MSDS before working with a chemical. It will tell you how easily thes ubstance can catch fire.

- **Flash Point—**the minimum temperature at which a liquid gives off enough vapors to ignite. The lower the flash point, the more flammable the substance
- **Flammable Limits—**the concentration range of a substance in the air, during which it will readily ignite. Concentrations below or above these limits are either too lean or too rich to ignite
- **Reactivity and compatiblility hazards—**the stability of the chemical and how it may react with other substances, including whether it will burn, release toxic vapors, or explode
- **Fire Fighting Measures—**the proper extinguishing agents to use and appropriate protective gear

Flammable chemicals generally catch fi
Flammable liquids have a flash point ur
Combustible liquids have a flash point f

Compressed Gases

Compressed flammable gases have flash points below room temperatures. Even small leaks of these materials can
ignite.

- ☐ Never roll or drag cylinders
- ☐ Restrain cylinders whether they're empty or full by using straps, chains, or by fastening sto a stand to prevent them from falling and rupturing
- ☐ Store cylinders in dry, cool, well-ventilated places
- ☐ Don't expose cylinders to temperatures over 50 degrees C (122°F)
- ☐ Don't extinguish a flame involving a flammable gas until the source of the gas has been turned off. ***It can easily reignite.***

Flammable Liquids

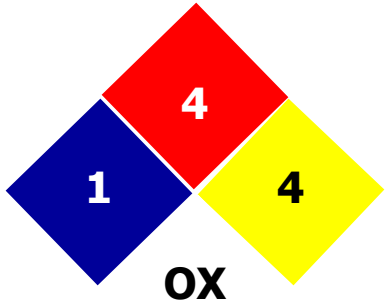
Flammable liquids, like oil, gas, kerosene, and many solvents present unique fire hazards. They give off invisible vapors that can travel long distances and catch fire quickly or explode when ignited by something as small as a static discharge.

Follow these tips:

- ☐ Keep away from ignition sources, such as cigarettes or or machinery surfaces
- ☐ Use only in areas with good ventilation
- ☐ Store in approved metal containers
- ☐ Ground and bond containers when transferring materials to safely discharge static electricity
- ☐ Take only what you need for a job
- ☐ Clean up spills and leaks quickly
- ☐ Remove clothing that has absorbed liquids immediately
- ☐ Never store near heat sources. Do not cut or weld on drums or containers that once contained gasoline or other flammable liquid

☐ Labels

Before you move, handle, or open a chemical container, read its label. Chemical labels often indicate a fire hazard by the **color red combined with a number.**



1	**HEALTH**
4	**FLAMMABILITY**
4	**REACTIVITY**
OX	**PROTECTIVE EQUIPMENT**

re easily
nder 100° F
from 100° F to below 200° F