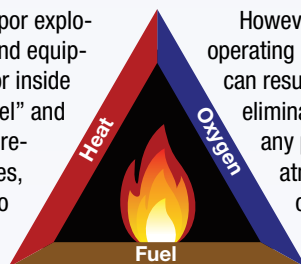


Ignition Sources

The best way to prevent fires and flammable vapor explosions, either inside or outside process piping and equipment, is to avoid creating a flammable mixture. For inside process equipment, this means controlling the “fuel” and “oxygen” sides of the fire triangle. We must also prevent the release of flammable or combustible gases, liquids, or dusts (fuel) from process equipment into the surrounding environment, where oxygen will always be present in the air.



However, we must also recognize that our equipment and operating procedures can fail and a flammable atmosphere can result from a failure. So, we must always work to eliminate ignition sources (“heat” in the fire triangle) in any place where there is the potential for a flammable atmosphere. The pictures below show some examples of ignition sources that we need to control. Do you have any of these in your plant? Can you think of any other possible ignition sources in your plant?



▲ Some examples of ignition sources: (1) static electricity, (2) vehicles, (3) welding, (4) open flame, (5) grinding, (6) faulty electrical wiring, (7) a furnace, and (8) pyrophoric or decomposing material.

What Can You Do?

- Understand and strictly follow your plant’s work-permit procedures for hot work, electrical work, and any other activity that could create ignition sources in hazardous areas.
- Follow proper emergency procedures in case of a flammable release. For example, make sure that hot work is stopped and vehicles are shut off.
- Look for potential ignition sources, such as faulty electrical wiring, or improper equipment in hazardous areas as you go about your job. Report problems and make sure they are fixed.
- Understand the hazardous areas and electrical classification for your plant (see the October 2013 Beacon).
- Remember that many common portable electronic devices, such as cell phones, digital cameras, tablet computers, and laptops, are not rated for use in hazardous areas. Follow your plant’s policies and permit systems for use of these devices.
- Be aware that a hot surface, such as a hot pipe or a hot

motor, can be an ignition source, particularly if you are handling a material with a low autoignition temperature.

Several Process Safety Beacons have discussed specific examples of the likely ignition sources for major fires and explosions. You can access read-only copies of these Beacons online at <http://sache.org/beacon/products.asp>

Process Safety Beacon Date	Ignition Source
October 2003	Hot activated-carbon adsorber
July 2003	Static electricity
September 2004	Truck motor
December 2008	Static electricity
October 2009	Truck motor
October 2013	Sparks from electrical equipment

Control ignition sources in your plant!

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