Pesticide Fires

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Fires pose a special hazard in pesticide storage facilities. In addition to the danger of the fire itself, other dangers are associated with pesticides in this situation.

Introduction

Pesticide products vary significantly in their flammability and the related hazard they pose in storage. Flammable pesticides typically include the following precaution in the label statement: “Do not use or store near heat or open flame.” These warnings will be found in the Physical and Chemical Hazards Statements on the product’s label (see Figure 1).

Potential problems associated with pesticide fires include the following:

• The pesticides may be highly flammable or explosive.
• The pesticides may give off highly toxic vapors or smoke that may harm firefighters, nearby residents, animals, or plants.
• Pesticide residues may be present in the debris and soil following a fire at a pesticide storage facility.
• Runoff from the fire site may contain highly toxic chemicals.

Take Precautions

Emergency or contingency planning is the cornerstone of a responsible action plan. Coordinate with local emergency-response officials all details concerning response to a fire, and review the emergency plan at least annually.

Advisable proactive measures also include the following:

• Locate the storage facility as far as possible from places where people and animals live.
• Notify the local fire department of the location and contents of the pesticide storage facility.
• Carefully map a floor plan of the facility and the immediate surrounding area. Be sure emergency responders have this map in advance of any emergency, so they will know the facility layout.
• Train local workers in execution of the emergency plan.
• Keep the storage facility locked at all times.
• Post signs that indicate pesticides are stored in the facility (Figure 2).
• Store combustible pesticides away from steam lines and other heating systems.

Figure 1. A typical statement of physical and chemical hazards from the label of a flammable pesticide.

Credits: Crop Data Management Systems, Inc.
• Do not store glass or pressurized containers in sunlight, where they can concentrate heat and possibly explode or ignite.

• Keep a written inventory of the pesticides held in storage and file the list away from the storage facility.

If a Fire Occurs
Prompt and responsible action is essential in the event of a chemical fire.

Take the following actions in the event of a chemical fire:

• Evacuate the premises.

• Notify the fire department and inform the firefighters of the nature of the pesticides involved.

• Provide emergency-response personnel with a material safety data sheet (MSDS), which includes technical and emergency information.

• Keep people away; establish a security perimeter to discourage onlookers.

• If significant smoke is generated, evacuate all people and animals in the vicinity, especially those downwind.

• Contain small fires with fog, foam, or dry powder. If only water is available, use it as a fine spray or fog. Use only as much water as absolutely necessary. Do not use water jets because they can break bags and glass containers. If using water to fight pesticide fires, be careful not to spread the contamination to the surrounding area through water runoff.

• Make sure water and spilled chemicals are being contained. For larger fires, consider withdrawing and allowing the fire to burn out. This option is preferred over using water to fight the fire because using water can lead to widespread environmental contamination. If runoff water cannot be avoided, build dikes to contain the contaminated water.

• Clean and dispose of equipment and all clothing. All personnel involved should shower after fighting the fire.

National Fire Protection Association
A hazardous rating system used to assist emergency response personnel is the National Fire Protection Association (NFPA) Hazard Identification System. This system uses a diamond-shaped warning symbol. The top, left, and right boxes refer to flammability, health, and instability hazards, respectively, and each contains a number from 0 to 4 (Table 1). The bottom box is a warning against the use of water. Some pesticides and their storage sites will be marked with such a warning to alert firefighters not to use water to put out a fire (Figure 3).
**Pre-Fire Plan**

Reduce the risk of a fire before it happens. Discuss this pre-fire plan with the local Chief Fire Control Officer. Post a copy of the plan in your place of business and have additional copies readily available.

Facility Name __________________________

Location __________________________

Telephone Number __________________________

**Emergency Telephone Numbers for Facility**

Day: __________________________

Night: __________________________

Manager of Facility __________________________

Asst. Manager __________________________

Alternate __________________________

**Fire Department** __________________________

**Physician** __________________________

CHEMTREC (Chemical Transportation Emergency Center): (800) 262-8200

Florida Poison Control Center: (800) 222-1222

Florida State Watch Office: (850) 413-9900 (Non-emergencies); (800) 320-0519 (Emergencies)

Florida Department of Agriculture and Consumer Services: (850) 617-7900

**Location of Emergency Equipment and Supplies**

Self-Contained Breathing Apparatus

__________________________

Spare Compressed Breathing Air Tanks

__________________________

Earth Moving Equipment

__________________________

Portable Water Pumps

__________________________

Street Barriers

__________________________

Sand Bags

__________________________

Other

__________________________

**Pre-Fire Plan Update**

Facility Manager Signature

__________________________

Date ______________

Fire Dept. Official Signature

__________________________

Date ______________

Next Scheduled Review or Update ______________

(Revise annually and after any important change.)

**Sketch of Facility and Immediate Surroundings**

Draw a map showing the property site and immediate surroundings. The grid below can be used to sketch the property map. Set each grid to a size scale (e.g., 1 grid = 20 feet, etc.).

In the map include details such as the outline of buildings, type of construction, permanent interior walls, building openings, and major fixed equipment. Provide elevation views if the facility is more than one story. Locate all fixed outside equipment. Show perimeter fences, gates, rail spurs, floor drains, etc. Show access routes and approximate distances to important buildings. Select a suitable scale for the sketch. Identify areas of the facility committed to pesticides, flammables, oxidizers, etc., including bulk storage tanks. Show North arrow.
**Additional Information**


Table 1. NFPA’s hazardous rating system.

<table>
<thead>
<tr>
<th>Section</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue—Health hazard</td>
<td>4: severe hazard</td>
</tr>
<tr>
<td></td>
<td>3: serious hazard</td>
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<tr>
<td></td>
<td>2: moderate hazard</td>
</tr>
<tr>
<td></td>
<td>1: slight hazard</td>
</tr>
<tr>
<td></td>
<td>0: minimal hazard</td>
</tr>
<tr>
<td>Red—Flammability hazard</td>
<td>4: flammable gases; volatile liquids, pyrophoric materials</td>
</tr>
<tr>
<td></td>
<td>3: ignites at ambient temperatures</td>
</tr>
<tr>
<td></td>
<td>2: ignites when moderately heated</td>
</tr>
<tr>
<td></td>
<td>1: must be preheated to burn</td>
</tr>
<tr>
<td></td>
<td>0: will not burn</td>
</tr>
<tr>
<td>Yellow—Instability</td>
<td>4: capable of detonation or explosive decomposition at ambient temperatures</td>
</tr>
<tr>
<td></td>
<td>3: capable of detonation or explosive decomposition with strong initiating source</td>
</tr>
<tr>
<td></td>
<td>2: violent chemical change possible at elevated temperature and pressure</td>
</tr>
<tr>
<td></td>
<td>1: normally stable, but becomes unstable if heated</td>
</tr>
<tr>
<td></td>
<td>0: normally stable</td>
</tr>
<tr>
<td>White—Special hazard</td>
<td>OX: oxidizer</td>
</tr>
<tr>
<td></td>
<td>W: avoid use of water</td>
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