



A Guide
on
Hazardous Waste Management
for Florida's

**Agricultural
Pesticide Users**

Hazardous Waste (RCRA) Compliance Assistance Program



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This document was published to help educate businesses on hazardous waste management issues affecting them. The suggested options may help businesses to operate in an environmentally appropriate manner. Some of the options may go beyond what is required to remain in compliance with regulations. Business owners are responsible for obtaining complete information about applicable regulations. Misrepresentations or omissions by the Florida Department of Environmental Protection or the Florida Center for Solid and Hazardous Waste Management do not relieve any person from any requirement of federal regulations or Florida law.

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WHY SHOULD I CARE ABOUT HAZARDOUS WASTES?

As a business owner, operator or employee, you may be producing materials that can harm people and the environment.

This booklet offers helpful tips on how to:

- comply with federal and state hazardous waste regulations.
- avoid penalties by properly managing hazardous wastes.
- save money on disposal costs by reducing hazardous wastes.

Health and Environment

Hazardous wastes spilled or dumped on the ground or disposed of in dumpsters may seep into the groundwater and contaminate drinking water supplies.

Hazardous wastes may run off into the nearest body of water where they may poison or kill fish and other wildlife.

Hazardous wastes pose a health risk to you, your employees and your community.

Cost Savings

State and county inspectors may visit your business to ensure that hazardous wastes are being managed properly. State penalties may range from \$100 to \$50,000 **per violation per day.**

Reducing hazardous wastes can reduce your production and disposal costs and reduce your risk of future liability.



Public Image

Your customers will appreciate your efforts to prevent pollution.

Your community will recognize your business as a good neighbor.



WHAT IS A HAZARDOUS WASTE?

A waste is hazardous if:

- it has any of the characteristics described below.
- it is listed as a hazardous waste in the Code of Federal Regulations, 40 CFR Part 261.

Characteristic Wastes

Ignitable

Ignitable wastes are easily combustible or flammable. If they have a flashpoint of 140° F or less or an alcohol content of 24% or more, they are hazardous wastes.



Corrosive

Corrosive wastes corrode metals or other materials or burn the skin. These liquids have a pH of 2 or lower or 12.5 or higher.



Reactive

Reactive wastes are unstable and react rapidly or violently with water or other materials.



Toxic

Wastes are toxic if they contain certain heavy metals, such as chromium, lead or cadmium, or toxic organic chemicals.



Listed Wastes

A waste is hazardous if it is listed in the Code of Federal Regulations, 40 CFR Part 261. For details on listed wastes and waste code numbers, contact the Florida Department of Environmental Protection. (See page 19 for DEP phone numbers.) The Code of Federal Regulations is available at most libraries or may be purchased from the U.S. Government Bookstore (phone 904-353-0569).

Acutely Hazardous Wastes

Small amounts of very dangerous wastes, such as arsenic and cyanide compounds, are regulated in the same way as large amounts of other wastes. A business that generates 2.2 pounds (1 kilogram) or more of these acutely toxic wastes per month is subject to full regulation under the hazardous waste rules.

Identifying Your Hazardous Wastes

It is very important to determine whether a waste is hazardous or non-hazardous. There are several ways to identify hazardous wastes.

- Obtain and read Material Safety Data Sheets (MSDS).
- Talk to product suppliers and manufacturers.
- Read product labels.
- Compare product and process information to hazardous waste characteristics and to wastes listed in federal regulations.
- If product or process information is not available or is inconclusive, have a commercial lab sample and test the waste using the TCLP test.
- A non-hazardous material or product may become a hazardous waste due to contaminants added during use. Lab testing may be necessary.



TYPICAL HAZARDOUS WASTES

Pesticides regulated as hazardous wastes must be disposed of properly, usually by a licensed hazardous waste contractor.

The following charts list some of the common pesticides that are regulated as hazardous wastes. The charts are reprinted from Proper Disposal of Pesticide Wastes, a publication of the University of Florida, Florida Cooperative Extension Service, October 1993.

"Toxic" and "acutely toxic" hazardous wastes are subject to different disposal regulations.

Common Pesticides Regulated as Toxic Hazardous Wastes

Common Chemical Name	Trade Name
amitrole	Weedazol, others
cacodylic acid	Phytar, others
chlorobenzilate	Acaraben
chlordane	Chlordane, others
diallate	Avadex
DBCP	Nemagon, others
1,2-D	DD, others
1,3-D	Telone, Vorlex
2,4-D	Weedone, others
DDT	DDT
ethylene dibromide	EDB, Soilbrom, others
lindane	Isotox, others
maleic hyrazide	MH-30, others
methyl bromide	Brom-o-gas, others
methoxychlor	Marlate, others
pronamide	Kerb
thiram	Terson, others
warfarin (0.3% or less)	Coumadene, others
zinc phosphide (10% or less)	ZP, others

Common Pesticides Regulated as Acutely Toxic Hazardous Wastes

Common Chemical Name	Trade Name
aldicarb	Temik
aldrin	Aldrex, others
aluminum phosphide	Phostoxin
aminopyridine	Avitrol
dimethoate	Cygon, others
dinoseb	Dinitro, others
disulfoton	Di-syston
endosulfan	Thiodan
endothall	Aquathol, others
famphur	Warbex
heptachlor	Gold-Crest H60, others
methomyl	Lannate, Nudrin
methyl parathion	Metaphos, others
parathion	Ethyl Parathion, others
phorate	Thimet
toxaphene	Toxakil, others
warfarin (more than 0.3%)	Coumafene
zinc phosphide (more than 10%)	ZP, others

For information on applicable regulations, and for a complete listing of pesticides regulated as hazardous wastes, contact :

Florida Department of Agriculture
and Consumer Services
Bureau of Pesticides
Phone: (850) 487-0532

HOW SHOULD I MANAGE HAZARDOUS WASTES?

First, determine how much hazardous waste you generate each month. The rules you must follow depend on how much you generate, how much you store, and how long you store it.

- **Less than 220 pounds** (100 kilograms or about half a drum): you are a “Conditionally Exempt Small Quantity Generator.”
- **220 - 2,200 pounds** (100 - 1,000 kilograms or about half a drum to 5 drums): you are a “Small Quantity Generator.”
- **More than 2,200 pounds** (1,000 kilograms or more than about 5 drums): you are a “Large Quantity Generator.”

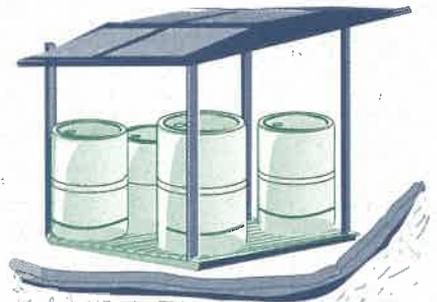
The following practices may be required for your business. Even if they are not required, they are good waste management practices. Additional information is available from DEP.

Containers

- Maintain containers in good condition. Prevent leaks, ruptures and accumulation of rainwater on tops of drums.
- If a container leaks, transfer waste to a new container.
- Keep containers closed. Use self-closing funnels.
- Wastes must be compatible with the container. For example, use HDPE plastic containers for corrosive wastes.
- Never place incompatible wastes, such as wastes that react with each other (acids and bases), in the same container.

Storage

- Maintain adequate aisle space between container rows to allow inspection for leaks and damage.
- Store ignitable and reactive wastes at least 50 feet from property boundaries.
- Store containers of incompatible wastes in separate areas.
- Be aware of allowable time limits for storage.



Labels

- Label every container with the type of waste and whether it is hazardous or non-hazardous.
- Include federal waste code numbers.
- Include the accumulation start date (the date when waste was first placed in the drum).
- Include your business's name and address.
- Use the following words on labels for hazardous wastes:

**HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL**

If found, please contact the nearest police or public
safety authority or the U.S. EPA

(Your business's name and address and
manifest document number)

Transport and Disposal

- Make sure your transporter and disposal facility have EPA identification numbers.
- Use manifests for all hazardous wastes shipped offsite.

Inspection and Recordkeeping

- Inspect containers at least once a week and keep a written log of container inspections.
- Keep training and inspection records for 3 years.
- Keep manifests and shipping receipts for 3 years.
- Keep records of lab tests for 3 years.
- Keep land disposal restriction forms for 3 years.

Training

- Train all employees to identify, reduce and properly handle wastes.
- Train new employees before they handle hazardous wastes.

HOW CAN I REDUCE HAZARDOUS WASTES?

Reducing hazardous wastes makes good business sense. Benefits include:

- Saving money on waste management costs.
- Reducing concerns about penalties and liability.
- Creating a safer, healthier workplace.
- Promoting positive public relations with clients, customers and the local community.

How Do I Begin?

- Make a commitment to reducing wastes in every area of your business.
- Follow instructions on pesticide labels to avoid having pesticides become hazardous wastes.
- Encourage the participation of all employees through education, training and incentives.

Integrated Pest Management (IPM)

With IPM, pesticides are only one of several methods used to control pests. IPM has many benefits, including:

- Fewer pests and more beneficial populations.
- Reduced pesticide costs.
- Reduced liability for hazardous wastes.
- Reduced potential for soil or water contamination.

Information on IPM is available from your county Extension office.

Pesticide Storage

- Store pesticides in clearly labeled and segregated containers.
- Store pesticide containers off the ground in an area where there is no possibility of flooding.
- Storage facilities should be dry and well-ventilated with proper fire protection equipment.
- Avoid storing pesticides that no longer will be used. When possible, return them to the manufacturer for relabeling or reprocessing.

Pesticide Selection and Handling

- Identify the specific pest to be controlled and choose the least toxic pesticide available.
- Purchase only the amount of pesticide needed for the immediate future.
- Read labels carefully to ensure proper and safe mixing, use, and storage.
- Mix pesticides carefully, using only recommended amounts. Avoid mixing excess quantities.
- When pesticides must be mixed, conduct a compatibility test before adding pesticides to tanks. Follow label instructions.
- Inspect and calibrate spraying equipment frequently. Replace leaking hoses, fittings, and nozzles.
- Clean up all spills and leaks immediately. Keep clean-up supplies such as containment drums, kitty litter, shovel, broom, and dustpan in storage areas.
- Spilled pesticides can be handled as a product, rather than a waste, if label instructions are followed.

Training

- Train new employees to use pesticides efficiently, using minimal amounts to get the job done.
- Ensure that employees follow label directions and precautions listed on Material Safety Data Sheets.

Vehicle and Equipment Maintenance

- Reduce or eliminate solvent use by determining whether cleaning is really necessary.
- Use a multi-purpose solvent to reduce the types of hazardous waste that need to be managed.
- Find less hazardous substitutes for solvents, such as citrus-based, water-based or detergent-based cleaners.
- Keep used oil and other vehicle fluids segregated from solvent wastes and carburetor cleaner.
- Label waste containers clearly to prevent contamination of non-hazardous wastes.
- Contract with approved recycling services for used antifreeze, oil, lead acid batteries, used oil and oil filters.

PREVENTING POLLUTION THROUGH PROPER MANAGEMENT

Rinsewaters

- Minimize rinsewaters by washing out equipment only when necessary.
- Equipment rinsewater and empty container rinsewater may contain pesticides that would be regulated as hazardous waste if the rinsewater is not used as makeup water or applied as a pesticide.
- Rinsewaters can be collected for use at a later time to make a batch of the same or a compatible pesticide. The pesticide-containing water is not a waste if it is used as a pesticide.
- Rinsewaters containing pesticides regulated as hazardous wastes should be used within 90 days. If stored longer than 90 days, FDEP must be notified and a permit is required.
- Use a hazardous waste disposal contractor for the treatment or disposal of unused rinsewaters containing hazardous pesticides.
- Rinsewaters should never be discharged to:
 - the ground
 - septic systems
 - ditches or streams
- Obtain permission before discharging rinsewaters to a municipal wastewater treatment plant.
- Never store pesticide rinsewater in a sump. Sumps are like underground storage tanks, and leaks may occur.

Excess Product and Mixtures

- The best way to dispose of excess product is to find someone who can use it in accordance with the label.
- Contact the supplier or manufacturer to determine if excess product can be returned, or arrange for disposal with a hazardous waste contractor.
- Excess mixture that is left over in the spray tank should be used on a labeled site. It usually cannot be stored.
- Measure and calibrate carefully to avoid generating excess mixture.

Empty Containers and Liners

- Containers or liners that held pesticides listed as hazardous wastes must be empty before disposal.
- Triple-rinse containers with water only or power wash to remove the pesticide.
- After triple-rinsing or power washing, punch holes in the pesticide containers to prevent reuse.
- Follow directions on the label for container disposal.
- Where recycling facilities are available, recycle containers at a pesticide-container recycling facility, not at a general recycling facility.



PREVENTING POLLUTION IN MIXING AND LOADING AREAS

Small but frequently repeated spills in mixing and loading areas can pollute ground waters, surface waters, and soils.

Clean-up costs for pesticide contamination are astronomical and can bankrupt a business.

You can prevent soil and water contamination by:

- Preventing pesticide spills.
- Preventing repeated small spills in one location.
- Cleaning up any spill immediately.

Typical causes of contamination in mixing-loading areas include:

- Leaking nozzles and hoses.
- Valves left open.
- Overflowing tanks.
- Frequent spilling of pesticides.
- Cleaning of spray equipment.

Planning for a Mixing and Loading Site

Proper planning for a mixing and loading site is very important. A mixing and loading site that is not designed or constructed properly may require expensive reconstruction.

Before building, be familiar with available guidelines. To obtain a guidance document called Standards for Construction and Operation of Agricultural Chemical Mixing Centers, call the Department of Agriculture and Consumer Services, Bureau of Pesticides, at (850) 487-0532. The document is also available on the Department of Environmental Protection's web site: <<http://www.dep.state.fl.us>> Click on "Publications," then on "Agriculture," then "Agricultural and Golf Course Documents."

Listed below are just a few of the important planning considerations:

- Locate the site as far as possible from unprotected ground water wells and areas where runoff may carry spilled pesticides into surface water bodies.
- Use an impermeable surface for mixing and loading, such as concrete. Steel or pesticide-resistant synthetics may also be used.
- If an impermeable surface is not available, use random locations for mixing and loading to prevent the buildup of spilled materials in any one place.
- A roof with adequate overhang over a permanent mixing-loading slab prevents runoff of hazardous pesticides.
- Plant vegetation to provide a buffer zone between a mixing-loading area and sensitive areas, such as wells, ground water recharge areas, sinkholes, and surface waters.

WHO NEEDS TO KNOW IF MY BUSINESS GENERATES HAZARDOUS WASTES?

Notify DEP

- If your business is a small or large quantity generator, notify DEP to obtain an EPA identification number. Local environmental agencies should also be notified.



Notify Local Authorities

- Police and fire departments and local hospitals who would respond to an emergency need to know that there are hazardous wastes on your property.



Designate an Emergency Coordinator

- This person must know what to do in case of a fire, spill or other emergency and must be on the premises or on call 24 hours a day.



Develop a Contingency Plan

Guidance on contingency plans is available from DEP. Large quantity generators must have a written plan that includes:



- Emergency response arrangements with police, fire, hospitals and emergency response contractors.
- Emergency coordinators' addresses and phone numbers.
- On-site emergency equipment descriptions and locations.
- Evacuation plan and routes, including a site diagram.
- Spill reporting procedures.

Post Emergency Information

Post the following information near every telephone:

Fire department phone number
Emergency coordinator's name and phone number
Locations of fire alarms and extinguishers
Locations of spill control materials

CHECKLIST



This checklist will help you to prevent the most common hazardous waste violations.

For more detailed information on hazardous waste management requirements, contact DEP.

- Identify types and quantities of hazardous wastes.
- Notify Florida DEP and obtain an EPA identification number from DEP.
- Use proper containers to collect and store wastes.
- Label all containers as hazardous or non-hazardous wastes.
- Include accumulation start dates on labels.
- Keep containers of hazardous waste closed.
- Maintain aisle space between containers for inspection.
- Inspect containers weekly for rust, leaks or damage and keep inspection records for at least 3 years.
- Never discharge hazardous wastes to a septic tank unless you have a DEP permit.
- Train employees to properly handle hazardous wastes.
- Designate an emergency coordinator.
- Notify police, hospitals and fire department.
- Post emergency information near each phone.
- Develop a contingency plan for emergencies.
- Use manifests for all waste transported for disposal.
- Keep all records for at least 3 years.

WHERE CAN I GET MORE INFORMATION?

Additional information on hazardous waste reduction and regulations is available from many sources.

Florida Department of Environmental Protection

District offices and the Tallahassee office offer technical assistance, fact sheets and other publications on hazardous waste regulations.

➤ **Hazardous Waste Compliance Assistance Program**

Phone: (850) 488-0300

Fax: (850) 921-8018

Available publications include:

Summary of Hazardous Waste Regulations

Requirements for Conditionally Exempt Small Quantity Generators

Requirements for Small Quantity Generators

Handbook for Small Quantity Generators of Hazardous Waste

Bureau of Pesticides

For information and publications, call the Florida Department of Agriculture and Consumer Services, Bureau of Pesticides.

➤ **Phone:** (850) 487-0532

Institute of Food and Agricultural Sciences (IFAS)

For information and publications, call the IFAS Pesticide Information Office at the University of Florida.

➤ **Phone:** (352) 392-4721

Extension Offices

For the phone number of your county Extension office, call the District Extension Directors Office:

➤ **Phone:** (352) 392-1781

OFFICES OF THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Hazardous Waste Regulation Section

Twin Towers Office Building
 2600 Blair Stone Road
 Tallahassee, FL 32399-2400
 (850) 488-0300

Northwest District

160 Government Center
 Pensacola, FL 32501
 (850) 444-8360



Northeast District

7825 Baymeadows Way, Suite 200B
 Jacksonville, FL 32256
 (904) 448-4300



Southwest District

3804 Coconut Palm Dr.
 Tampa, FL 33619
 (813) 744-6100



Central District

3319 Maguire Blvd.
 Orlando, FL 32803
 (407) 894-7555



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2295 Victoria Ave., Suite 364
 Fort Myers, FL 33901
 (941) 332-6975



Southeast District

400 N. Congress Ave.
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