

Notes

Small Businesses and Ohio EPA's Hazardous Waste Regulations



Ohio EPA
Small Business Assistance Office
Division of Hazardous Waste Management

Today's Presentation

- What is hazardous waste?
- Overview of requirements for small hazardous waste generators
- Hazardous waste inspections and common problems
- Resources

You will not know everything about hazardous waste -- this is a starting point.

Waste Evaluation

- Any material that can no longer be used is a waste.
- Wastes are generally classified as either hazardous or non-hazardous.
- Under Ohio's laws, all wastes must be evaluated by the generator BEFORE the waste is disposed of.

Waste Evaluation Requirement



Don't throw any waste into the dumpster unless you have confirmed that it is NOT a hazardous waste.

Non-Hazardous Waste

Unwanted materials from a business, such as:

- garbage/trash
- paper, cardboard
- wood pallets



Does not include any material that is a hazardous or infectious waste.

Hazardous Waste

There are two ways which EPA identifies hazardous waste.

- the waste is listed, or
- the waste has a toxic or dangerous characteristic



Notes

Listed Hazardous Wastes

EPA has published lists of wastes in the regulations that are classified as hazardous. Each listed waste carries its own unique EPA hazardous waste code.

The codes begin with and F, K, P or U followed by three numbers.



Listed Hazardous Waste

“F” List: includes hazardous waste from common industrial processes:
solvent degreasing
metal finishing waste

“K” List: includes hazardous waste from specific industrial processes:
chemical manufacturing
iron, steel production
explosives manufacturing

Listed Hazardous Waste

“U” List: Includes discarded commercial chemical products that are toxic.

“P” List: Discarded commercial chemical products that are acutely toxic.

Examples: expired lab chemicals, chemical products, off-spec products that can't be used.

Listed Hazardous Waste Examples

Spent thinners:

methylene chloride	F001
Methyl Ethyl Keytone (MEK)	F005
acetone	F003
toluene	F005

Spent cyanide plating baths F007

Listed Hazardous Waste Solvent Contaminated Wipers

If you use a listed solvent with wipers or shop rags to clean or degrease, the shop rags also become a listed hazardous waste.

To avoid the hazardous waste regulations, have your shop rags cleaned/recycled by an industrial laundry or dry cleaner. You CANNOT throw shop rags in the solid waste dumpster if they contain a listed solvent. See fact sheet handout for more information.

Solvent Contaminated Wipers

Spent thinners:

methylene chloride	F001
Methyl Ethyl Keytone (MEK)	F005
acetone	F003
toluene	F005

Contaminated shop rags F listed*

* unless recycled/laundered

Notes

The Mixture Rule

If you mix a listed hazardous waste with a non-hazardous waste, the entire mixture becomes a listed hazardous waste.

- listed solvents + antifreeze, oil, brake fluid

There are some exceptions to the mixture rule, but very few.

Characteristic Hazardous Waste

Wastes with certain toxic or dangerous characteristics are regulated as hazardous.

There are four hazardous waste characteristics.

A characteristic waste has its own unique EPA hazardous waste code, beginning with a "D" followed by three numbers.

Hazardous Waste Characteristics

Ignitability



Corrosivity



Reactivity

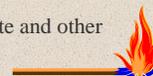
Toxicity



Ignitable Hazardous Waste D001

- A liquid waste with a flashpoint of less than 140° F
- Other wastes that can create a fire under certain situations (e.g., through friction);
- ignitable compressed gases and oxidizers.

Examples include solvents, paint waste and other materials that can easily catch fire.



Corrosive Hazardous Waste D002

Liquid waste with a pH of:

- less than or equal to 2, or
- 12.5 or higher



Examples include strong acids or alkaline (basic) wastes which easily corrode or dissolve metal or other materials.

Reactive Hazardous Waste D003

A reactive waste is one that:

- is unstable under normal conditions, or
- can detonate or explode, or
- reacts violently or creates toxic gases when mixed with water.

Examples include: peroxides, cyanides.



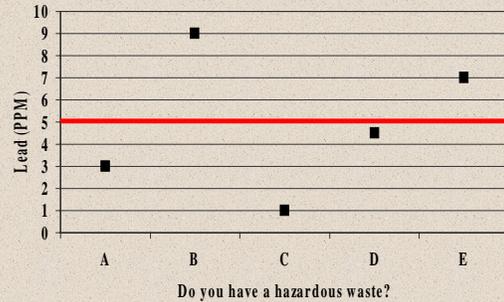
Notes

Toxic Hazardous Waste D004 - D043

- Wastes with toxic contaminants like organics or heavy metals at above regulatory levels.
- Toxicity is identified through a lab test called the *toxicity characteristic leaching procedure*, or TCLP.
- Wastes carry different D-codes depending on the specific contaminants present.



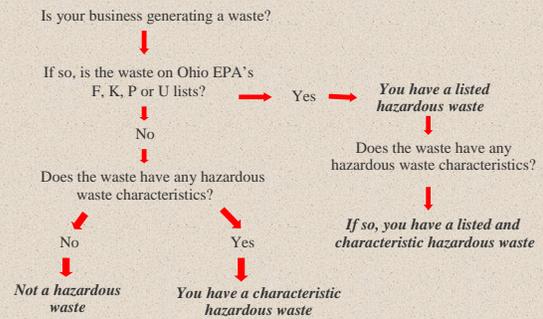
TCLP Waste Example



Toxic Hazardous Waste Examples

Methyl ethyl ketone	D035, F005, U154
Lead	D008, U144
Silver	D011

Do You Have a Hazardous Waste?



Waste Evaluation Requirements

All generators need to evaluate wastes to determine if they are hazardous. Resources include:

- lab analysis
- generator knowledge
 - information from vendor/supplier
 - Material Safety Data Sheet information
 - process information

Need to keep information in file to show how you determined whether wastes are hazardous or non-hazardous.

What are Some Hazardous Wastes Generated by Small Businesses?

- Spent paints, filters (D waste codes) could be hazardous due to heavy metals or low flash point
- Spent clean-up solvents could be hazardous due to low flash point or could be listed (F or D wastes)

Notes

What are Some Hazardous Wastes Generated by Small Businesses?

- Solvent contaminated wipers (F wastes) because of coming into contact with listed solvent
- Fluorescent bulbs with mercury (D waste)
- Off-spec chemicals (U or P waste)

What are Some Hazardous Wastes Generated by Small Businesses?

- Process wastes from:
 - Dry cleaning
 - Printing
 - Electroplating
 - Sludges
- Spent acids or bases could be hazardous because of high/low pH (D waste codes)
 - Battery acid
 - Plating chemicals
 - Photochemical solutions
 - Cleaning chemicals

Why Reduce the Hazardous Wastes You Generate?

- Reduce regulatory burden
- Save money
- Increase productivity
- Improve workers' health & safety

Reducing Solvent Related Hazardous Waste

- Purchase non-hazardous solvents
- Determine how clean something has to be
- Plan work jobs to minimize clean-up
- Use the minimum amount of solvent needed
- Reuse/recycle solvent

New Carlisle Chrysler/Dodge Dealership Case Study

- Solvent based parts washers (3)
 - Annual operating cost - \$867/unit
- Bioremedial parts washers (2)
 - Unit and start-up costs - \$993/unit
 - Annual operating costs - \$130/unit
 - Payback period – 1.3 years

Mayco Auto Painting and Body Works Case Study

- Generated 90 gallons/month of spent solvent
 - Annual disposal costs - \$2,520
- Purchased a solvent still and a gun washer
 - Capital costs (still \$2,670 + washer \$980= \$3,650)
 - Generates 2 drums of still bottoms/year (\$600)
 - Recover up to 85% of the spent solvent (\$4,080)
 - Saves 360 hours of labor/year (\$3,600)
 - Payback period – 0.4 years

Notes

Reduce Hazardous Waste Through Recycling

- Fluorescent bulbs
- Solvent wipers/rags
- Scrap metal
- Precious metals

John Roberts Case Study

- Solvent wipers sent to a commercial laundry
 - Solvent in effluent - explosion hazard
- Centrifuge
 - Capital costs - \$15,000
 - Recovered 2.5 - 3.5 gallons/220 wipers
 - Reused solvent in parts washers
 - Saved \$34,000/year

Other Methods to Reduce Hazardous Waste

- Inventory control
- Waste segregation
- Good housekeeping
- Employee suggestions

Custom Print Case Study

- Chemical inventory of 80 different chemicals
- Established a team to reduce inventory
 - Eliminated duplicate chemicals
 - Selected multi-tasked chemicals
 - Returned samples to vendor
 - Reduced inventory to 24 chemicals
 - Saved \$5,000/year in disposal and raw material costs

Hazardous Waste Generator Classifications

Three different generator classifications, based on the quantity of hazardous waste **generated** in a month.

CESQG	Conditionally Exempt Small Quantity Generator
SQG	Small Quantity Generator
LQG	Large Quantity Generator

Conditionally Exempt Small Quantity Generator "CESQG"

Generates less than 100 kilograms (220 lbs.) of hazardous waste in a month.



100 kgs. = about 25 gallons.

A CESQG cannot have more than a total of 1,000 kgs. (2,200 lbs.) of hazardous waste on-site. If so, becomes a SQG.

Notes

Small Quantity Generator "SQG"

Generates between 100-1000 kgs. (220-2,200 lbs.) of hazardous waste in a month.

This is equal to about 25-265 gallons



SQG cannot have more than 6,000 kgs. on site.

Monthly Hazardous Waste Generation

CESQG: less than 100 kgs. (220 lbs.) about 25 gallons



SGQ: 100-1,000 kgs. (220-2,200 lbs.) about 25-265 gallons



LQG: more than 1,000 kgs. (2,200 lbs.) + 265 gallons (about)



Hazardous Waste Generators Ohio's Regulations

- The more waste a company generates, the greater the number of regulations there are to comply with.
- Today we will be covering CESQG and SQG requirements.

Hazardous Waste Regulations CESQGs

- All wastes need to be evaluated and information kept on file.
- Must send waste off-site to a permitted hazardous waste facility.
- Don't need to have generator i.d., but many CESQGs do because transporter or disposal company requires generator to have it.

SQG Requirements Waste Evaluation and I.D. Number

- All wastes need to be evaluated and information kept on file.
- SQGs need to get a generator identification number from Ohio EPA.

SAMPLE "NOTIFICATION OF REGULATED WASTE ACTIVITY" FORM		Date Received (For Offices Not On Site)	
Notification of Regulated Waste Activity U.S. Environmental Protection Agency Ohio Department of Public Safety Ohio Division of Environmental Health		EPA Ohio Department of Public Safety Ohio Division of Environmental Health	
1. Generator's EPA ID Number (Mark "X" in the appropriate box) <input checked="" type="checkbox"/> A. Initial notification <input type="checkbox"/> B. Subsequent notification (Provide Item 2)		C. Generator's EPA ID Number	
2. Name of facility (include company and facility name)			
General Metal Processing Co.			
3. Location of facility (provide address and P.O. Box or Route Number)			
Street (Household)			
501 Main Street			
City or Town		State Zip Code	
Smalltown		VA 23000	
County Name			
4. Installation/Storage Address (see instructions)			
Street or P.O. Box			
501 Main Street			
City or Town		State Zip Code	
Smalltown		VA 23000	
5. Individual Contact (Person to be contacted regarding waste activities at site)			
Name			
Jones William			
Title			
Manager			
Phone Number (Area Code and Number)			
804-555-1234			
6. Installation Contact Address (see instructions)			
<input checked="" type="checkbox"/> A. Street or P.O. Box			
Street (Household)			
1501 Main Street			
City or Town		State Zip Code	
Smalltown		VA 23000	
7. Generator's Legal Owner			
Name of Generator's Legal Owner			
Josephine Doe			
Street, P.O. Box, or Route Number			
234 Broad Street			
City or Town		State Zip Code	
Smalltown		VA 23000	
8. Hazardous Waste Code and Material			
EPA Form 8700-10 Rev. 10/88			

Notes

SQG Requirements Hazardous Waste Shipments

- Shipments of waste are sent out under a manifest.
- Manifest needs to include the specific information outlined in the regulations.
- Shipment must include Land Disposal Restriction (LDR) paperwork; one-time notification.
- SQGs can use other shipping paper if sending waste out under recycling contract.

SQG Requirements Hazardous Waste Shipments

- Need to get a signed copy of manifest back from disposal facility and keep in file.
- If signed manifest not received within 60 days of shipment, contact Ohio EPA. Reporting is required.
- Need to keep shipping records on-site for 3 years.

SQG Requirements Container Management

Containers holding hazardous waste must be:

- Closed and in good condition
- Labeled with words "Hazardous Waste" (unless in a satellite area)
- Labeled with the date the company started to collect the waste (called accumulation start date) (unless in a satellite area)

Satellite Accumulation Area

Area where hazardous waste is collected near the point of generation. It also needs to be under the control of the process operator.

Examples:

- drum of used shop rags next to a spray booth.
- spent ink or solvent drum next to a printing press.

Notes

Satellite Accumulation Area

- Can collect up to 55 gallons in satellite area.
- Containers must be closed unless adding waste.
- Drums need to be labeled with description of contents (“hazardous waste” or other words).
- Don’t need to put accumulate start date on drum until you’ve collected 55 gallons.
- After reaching 55 gallons, need to move drum to central storage area within 3 days.

Accumulation Start Date Storing Hazardous Waste On-Site

A Small Quantity Generators (SQG) can only store hazardous waste on-site for 180 days from the accumulation start date.

If the SQG is shipping hazardous waste off-site to a disposal company that is more than 200 miles away, the waste can be stored for 270 days.

Hazardous Waste Drum Label

SQG Requirements Container Area Inspection Logs

Hazardous waste containers need to be inspected weekly and inspections recorded in a log.

Ohio EPA does not require that a specific inspection form be used. A company can create its own form.

Previously, you were required to keep inspection logs for 3 years. New rules, effective 3/13/02 do not have a time limit for keeping logs.

SQG Requirements Emergency Preparedness and Prevention

- Company contact who can respond to hazardous waste related problems (emergency coordinator).
- Employees must be familiar with emergency procedures for company.
- Company must have adequate aisle space where hazardous waste is accumulated.

SQG Requirements Emergency Preparedness and Prevention

Emergency information must be posted by the telephone:

- ✓ Name/phone number of emergency coordinator
- ✓ Location of emergency equipment
- ✓ Telephone number of local fire department



Notes

SQG Requirements Emergency Equipment

Where needed, emergency equipment must be kept at the company. Examples include:

- internal alarm/communication device
- fire control equipment
- spill control equipment



SQG Requirements Emergency Equipment Inspections

Emergency equipment must be inspected and tested as needed to maintain proper operation.

Inspections must be recorded in a log.

Previously, you were required to keep inspection logs for 3 years. New rules, effective 3/13/02 do not have a time limit for keeping logs.

SQG Requirements Accumulating Hazardous Waste On-site

Can't have more than a total of 6,000 kgs. of hazardous waste on-site.

*about 1,580 gallons (about 29 55-gallon drums)

Can only keep hazardous waste on-site for 180 days (270 days if shipping +200 miles).

A company exceeding the above becomes a hazardous waste storage facility -- subject to MANY regulations, including permitting.

Statutory Requirements for Generators

CANNOT keep hazardous waste on-site longer than the regulations allow.

CANNOT dispose of any hazardous waste on-site (e.g., dumpster, outside, down a septic tank). Hazardous wastes must be sent off-site to a permitted hazardous waste facility.

CANNOT, in most cases, treat hazardous waste on-site. There are some exceptions -- talk to your inspector.

What Happens During an Ohio EPA Hazardous Waste Inspection?

Site entry/opening meeting

- purpose of inspection
- agenda for inspection
- what documents will be reviewed
- health/safety considerations

What Happens During an Ohio EPA Hazardous Waste Inspection?

Facility walk through

- process operations
- hazardous waste generation areas
- hazardous waste storage areas
- emergency equipment
- pollution prevention opportunities

Notes

What Happens During an Ohio EPA Hazardous Waste Inspection?

Records review

- waste evaluation information
- manifests/LDR papers
- inspection logs
- phone posting

What Happens During an Ohio EPA Hazardous Waste Inspection?

Closing meeting

- what violations were found
- measures to correct immediate violations
- areas requiring further investigation
- procedures following inspection (receiving NOV, NOC, checklists)

Frequently Found Hazardous Waste Violations

- Failure to evaluate all waste streams

Some examples include:

- shop rags
- paint booth filters
- fluorescent bulbs

- Unknown drum(s) of material on-site.

Preventing Hazardous Waste Violations

Make sure you have evaluated all your waste streams to see if they are hazardous. DO NOT dispose of waste in your trash dumpster unless you can confirm that it is not hazardous waste.



Preventing Hazardous Waste Violations

To avoid expensing sampling and lab analysis, make sure you don't have any "mystery drums" around your shop. Make sure employees know where hazardous waste goes. Keep waste streams segregated.



Preventing Hazardous Waste Violations

Keep waste evaluation information on file where you can get to it easily. This information may include:

- Material Safety Data Sheets
- Information from a lab or vendor
- other information

Notes

Frequently Found Hazardous Waste Violations

- Failure to label containers with “Hazardous Waste”
- Failure to put accumulation start date on hazardous waste containers
- Failure to keep containers in good condition.

Preventing Hazardous Waste Violations



Make sure that drums are in good condition and properly labeled as “Hazardous Waste.”

Preventing Hazardous Waste Violations

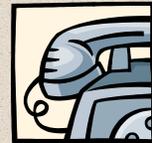
- Pay attention to length of time containers are being kept on-site.

If SQG, make sure you are not exceeding the 180 or 270 day storage time limit.
- If you have a hazardous waste spill, take quick action to clean it up. And, keep a record in your files on how you addressed or cleaned up the spill.

Frequently Found Hazardous Waste Violations

- Failure to conduct inspections of containers and emergency equipment.
- Failure to post emergency information by phone:

- ✓ Emergency coordinator’s name and phone number
- ✓ Emergency equipment location
- ✓ Number of fire department



Preventing Hazardous Waste Violations

- Make sure you have completed all your hazardous waste paperwork and that you know where it is:

shipping papers, manifests
inspection logs, etc.

- Ensure paperwork is up-to-date.



A central file for hazardous waste paperwork might be helpful.

Ohio EPA Hazardous Waste Inspection

Notes



The hazardous waste (RCRA) program was established to prevent situations like this!



And this . . .



And this . . .



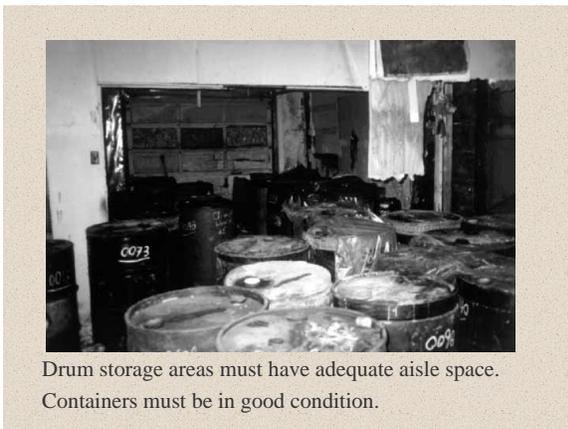
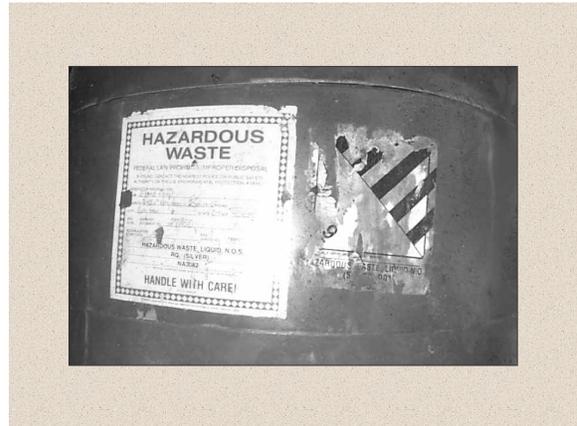
The plant manager claimed some of these drums contained product.



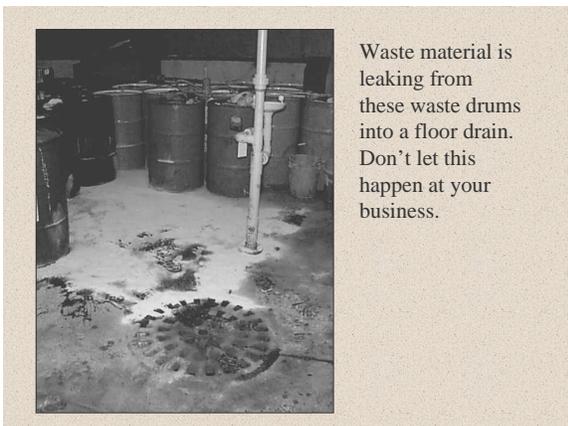
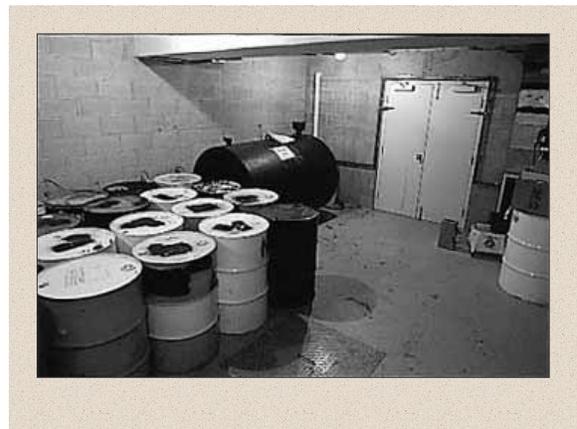
Keep product and waste drums separated.



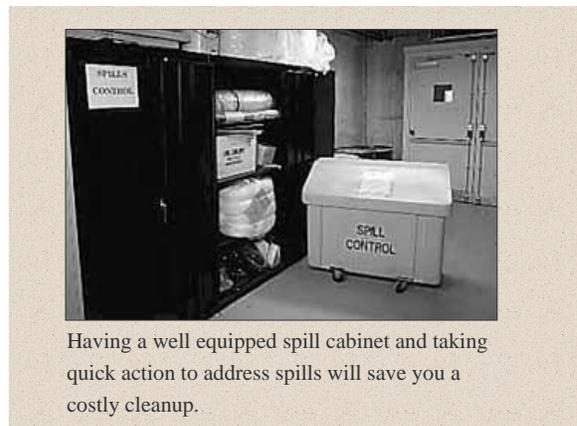
Notes



Drum storage areas must have adequate aisle space. Containers must be in good condition.



Waste material is leaking from these waste drums into a floor drain. Don't let this happen at your business.

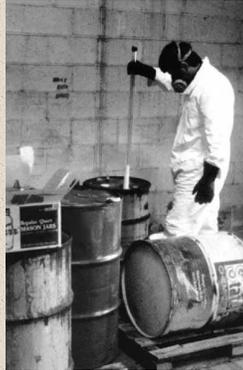


Having a well equipped spill cabinet and taking quick action to address spills will save you a costly cleanup.

Notes



Do you know what is in your drums?



Unknown drums at your business can lead to expensive sampling and laboratory analysis.



Be careful about storing hazardous waste drums outside. Spills and leaks can create a big problem.



This company had to pay for an expensive cleanup, because it did not address leaks and spills.



Notes



The hazardous waste inspection includes a walk around the outside of buildings to make sure waste is not being improperly stored or disposed of.



This company was disposing of waste and oil at the back of the property.



DO NOT dispose of any hazardous waste on the ground at your business.



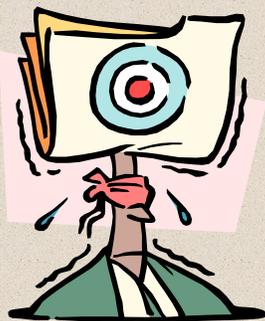
Some hazardous waste violations may also be a violation of other regulations such as water or air pollution control requirements. This company was burning shop rags in burn barrel, a waste and air violation.



This parts washer is right next to a floor drain which leads directly to a waterway. Discharges can lead to waste and water violations.



Notes



Many hazardous waste violations are paperwork-related. Avoid these violations. Make sure you have all your paperwork completed.

Used Oil

Used oil is not regulated as hazardous waste on its own, unless mixed with other materials such as solvents, gasoline or other chemicals.

Used oil is subject to its own set of regulations.

The used oil program is handled by Ohio EPA's Division of Hazardous Waste Management.

Used Oil

The Division of Hazardous Waste Management and Small Business Assistance Office are currently conducting workshops for used oil generators.

For more information, or to register for a workshop, contact the SBAO at 800-329-7518.

For More Help . . .

Division of Hazardous Waste Management
Central District Office
(614) 728-3778

Small Business Assistance Office
Central District Office
(800) 329-7518

