

Introduction to Hazardous Waste Regulations:

**Hazardous Waste Generator
Accumulation, Storage, and Labeling
Requirements**

**Michigan Department of
Environmental Quality**



Housekeeping

- **All lines will be muted**
- **Questions can be sent to us via the question/chat box**
- **We will record webinar and post online**

Introduction to Hazardous Waste Regulations:

Hazardous Waste Generator Accumulation, Storage, and Labeling Requirements

NADINE M. DEAK
Sr. Environmental Quality Analyst
Kalamazoo District Office
deakn@michigan.gov
269-567-3592



Environmental Assistance Center (EAC)

**Phone: 1-800-NO2-WASTE
(1-800-662-9278)**

**Hours: 8:00 AM to 4:30 PM
Monday – Friday**

Compliance Assistance Services Include:

**Air
Waste
Water
Storage Tanks**

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Do I Need to Know All of This?

Hazardous waste regulations...

Apply to all businesses, including municipalities, hospitals, & service industries, not just manufacturing industries

Are written broadly to address hazards posed by all waste streams

Why Cover These Topics?

Hazardous waste regulations require each business to...

Properly label all containers of hazardous and liquid industrial waste

Properly store all containers of hazardous and liquid industrial waste to prevent the escape of any constituents into the environment



Why Cover These Topics?

Proper accumulation and storage
will...

- ✓ Prevent release to the environment
- ✓ Prevent costly clean up expenses

Waste Labeling and Storage

Regulations requiring waste container labeling and proper accumulation and storage:

Act 451, Michigan Natural Resources & Environmental Protection Act:

Part 111, Hazardous Waste

Part 121, Liquid Industrial Waste

Part 115, Solid Waste

Part 169, Scrap Tires

Act 368, Michigan Public Health Code:

Part 138, Medical Waste Regulatory Act

Part 2, Ionizing Radiation Rules

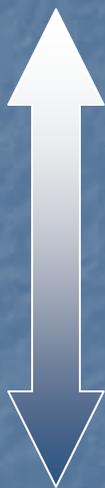
Federal Toxic Substance Control Act (TSCA)



Waste Labeling and Storage

Requirements vary based on
waste type and amount

Less Regulation



Liquid Industrial Waste Generators (LIW)

Universal Waste Generators

Conditionally Exempt Small Quantity Generators (CESQGs)

Small Quantity Generators (SQGs)

Large Quantity Generators (LQGs)

More Regulation



CONDITIONALLY EXEMPT SMALL QUANTITY GENERATORS

Part 111, Rule 205(2)(c) –

Accumulation area must be protected from weather, fire, physical damage, and vandals.

Part 111, Rule 205(2)(d) –

Waste must be accumulated so that constituents cannot escape by gravity into soil (directly or indirectly), into surface water or ground water, into drains or sewers, or to the air in violation of Part 55.



SMALL QUANTITY GENERATORS

Part 111, Rule 306 –

Containers must:

- Be labeled “Hazardous Waste”
- Have accumulation date (visible)
- Have hazardous waste numbers
- Be in good condition
- Be stored closed
- Be handled & stored to prevent leaks
- Be inspected weekly

SMALL QUANTITY GENERATORS

Part 111, Rule 306 –

Containers must:

- Be compatible with the waste
- Not contain incompatible wastes
- Be separated from each other if incompatibles
- Be washed if they previously held incompatibles
- Have secondary containment if > 1000 kg (2,200 lbs) or ~ 6 drums

LARGE QUANTITY GENERATORS

Part 111, Rule 306 –

Containers must:

- Be labeled “Hazardous Waste”
- Have accumulation date (visible)
- Have hazardous waste number(s)
- Be in good condition
- Be stored closed
- Be handled & stored to prevent leaks
- Be stored 50 feet from property line if ignitable and/or reactive (written local FD approval if <)

LARGE QUANTITY GENERATORS

Part 111, Rule 306 –

Containers must:

- Be inspected weekly
- Inspections must be documented (kept on-site 3 years)
- Not contain incompatible wastes
- Be separated from each other if holding incompatibles
- Be washed if previously holding incompatibles
- Have secondary containment

Generator Storage/Accumulation Time Frames

SQG's

- Generate \geq 220lbs & $<$ 2200 lbs non-acute monthly
- Accumulate not more than 13,200 lbs
- **Store 180 days or less**

LQG's

- Generate \geq 2200 lbs non acute or \geq 2.2 lbs acute or severely toxic monthly
- **Store 90 days or less**

SECONDARY CONTAINMENT REQUIREMENTS

Same for SQGs and LQGs

For Small Quantity Generator -

**Part 111, Rule 306(4)(b) refers to
40 CFR 264.175**

For Large Quantity Generator -

**Part 111, Rule 306(1)(a) refers to
40 CFR 264.175**

SECONDARY CONTAINMENT

Same for SQGs and LQGs

Part 111, Rule 306 & 40 CFR 264.175 –

Secondary Containment must:

- Have an impervious base free of cracks
- Be sloped or otherwise designed to elevate/protect containers from liquids
- Hold 10% of total container volume or volume of the largest container whichever is greater
- Prevent run on unless of sufficient capacity
- Have accumulated liquids removed to prevent overflow



SATELLITE CONTAINERS

Same for SQGs and LQGs

Part 111, Rule 306(2) –

Must be accumulated at or near the point of generation and containers must:

- Be < 55 gallons of hazardous waste (all types)
- Be < 1 quart of acutely or severely toxic waste
- Be under the control of the operator
- Be labeled "Hazardous Waste"
- Be labeled with either the hazardous waste number(s) or chemical name

SATELLITE CONTAINERS

Same for SQGs and LQGs

Part 111, Rule 306(2) –

Containers must be:

- **In good condition**
- **Compatible with the waste in them**
- **Closed when not in use**
- **Marked with date and moved to storage area within 3 days of exceeding 55 gallons non-acute (or 1 qt severely/acutely toxic**
- **Managed to prevent leaks**

LIQUID INDUSTRIAL WASTE

NO LABELING REQUIREMENTS

Part 121, Section 12113(1) –

All vehicles, containers & tanks must be closed or covered (except when adding or removing waste) to prevent escape of LIW. Exteriors of vehicles, containers and tanks must be kept free of LIW and its residues.

Part 121, Section 12113(2) –

Liquid industrial waste must be managed to prevent discharge into soil, surface water or groundwater, drain or sewer.



USED OIL

Part 111, Rule 810 –

Used oil must be:

- Labeled “USED OIL” if stored in a container or above ground storage tank
- Have fill pipes used to transfer used oil labeled “USED OIL”
- Only stored in containers or tanks
- Stored in containers in good condition with no visible signs of leaks

USED OIL



UNIVERSAL WASTE ANTIFREEZE

Part 111, Rule 228(4) –

Containers must be:

- Labeled “UNIVERSAL WASTE ANTIFREEZE” or “WASTE ANTIFREEZE” or “USED ANTIFREEZE”
- Kept closed
- Structurally sound & compatible with the contents
- Managed to prevent leaks or releases to environment

UNIVERSAL WASTE BATTERIES

Part 111, Rule 228(4) –

Containers must be:

- Labeled “UNIVERSAL WASTE BATTERIES” or “WASTE BATTERIES” or “USED BATTERIES”
- Kept closed
- Structurally sound & compatible with the contents
- Managed to prevent leaks or releases to environment

UNIVERSAL WASTE CONSUMER ELECTRONICS

Part 111, Rule 228(4) –

Packaging must be:

- Labeled “UNIVERSAL WASTE CONSUMER ELECTRONICS” or “UNIVERSAL WASTE ELECTRONICS”
- Managed to prevent breakage during normal handling conditions

UNIVERSAL WASTE ELECTRIC LAMPS

Part 111, Rule 228 (4) –

Containers must be:

- Labeled “UNIVERSAL WASTE ELECTRIC LAMPS” or “WASTE ELECTRIC LAMPS” or “USED ELECTRIC LAMPS”
- Structurally sound and compatible with contents of lamps
- Prevent breakage
- Kept closed



UNIVERSAL WASTE MERCURY DEVICES

Part 111, Rule 228(4) –

Containers must be:

- Labeled “UNIVERSAL WASTE THERMOSTATS” or “WASTE MERCURY THERMOSTATS” or “USED MERCURY THERMOSTATS”
- Structurally sound, compatible with contents of device with no evidence of leakage or spillage
- Designed to prevent the escape of mercury

UNIVERSAL WASTE PHARMACEUTICALS

Part 111, Rule 228 (4) –

Must be managed to prevent release of any universal waste and packaging must be:

- Structurally sound and is compatible with contents
- Will prevent breakage
- Kept closed

UNIVERSAL WASTE PESTICIDES

Part 111, Rule 228 (4) –

Containers must be:

- Labeled “UNIVERSAL WASTE PESTICIDES” or “WASTE PESTICIDES”
- Structurally sound and compatible with contents
- Free of evidence of leakage, spillage or damage
- Kept closed

TANKS

SQG & LQG

Part 111, Rule 306(1) & 40 CFR 265 Subparts J & I –

Tanks must:

- Be labeled “HAZARDOUS WASTE”.
- Be marked with accumulation date.
- Not contain wastes which could cause rupture, leaks, corrosion or other failures
- Be managed to prevent reactions that would threaten human health and the environment
- Be decontaminated (washed) if they previously held incompatible waste before adding waste

TANKS

REQUIREMENTS FOR IGNITABLE AND REACTIVE WASTES

Part 111, Rule 306(1) & 40 CFR 265.198

Ignitable and reactive wastes must be:

- Treated /mixed so that resulting mixture is no longer ignitable or reactive and does not cause structural damage to the tank
- Stored/treated so it is protected from igniting or reacting *NOTE: Generator must observe the National Fire Protection Association's buffer zone for tanks with ignitable or reactive wastes.*

TANKS

CONTROLS AND PRACTICES TO PREVENT SPILLS AND OVERFLOWS

Part 111, Rule 306 & 40 CFR 265.194 –

Tanks must:

Have spill prevention controls, overflow prevention controls

Uncovered tanks must:

Have at least 2 feet of freeboard unless equipped with containment structure or with a drainage or diversion system.



TANKS

SECONDARY CONTAINMENT

Part 111, Rule 615 & 40 CFR 265.193 —

Above Ground Tanks must:

- Be paved, diked, or curbed or otherwise enclosed to contain not less than 100% of the largest tank
- Have 100% containment for each tank if waste is incompatible or the tanks are interconnected

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 615 & 40 CFR 265.193 –

Under Ground Tanks must:

- Have secondary containment and a leachate withdrawal system
- Have a complete inventory of wastes done not less than twice a month
- Have leachate sampled at least annually

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –

Secondary Containment must:

- Be constructed of compatible material with sufficient strength
- Have an adequate foundation
- Have leak detection system which is able to detect leaks within 24 hours or earliest practical time
- Be sloped and/or drained so that all liquid is removed within 24 hours or earliest practical time

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –
Secondary Containment must include
either:

- A liner
- A vault system
- Or a double walled tank

Ancillary equipment requires full secondary
containment also!!!

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –
Secondary Containment Liner must:

- Have a 100% capacity of the largest tank
- Prevent run-on or infiltration of precipitation unless has excess capacity
- Be free of cracks or gaps

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –

Secondary Containment Liner must:

- Must cover any area that waste may come in contact with if released
- Be constructed with chemical resistant stops if cement
- Have an impermeable, compatible interior coating if cement

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –

Vault System must:

- Have 100% capacity of the largest tank within its boundary
- Prevent run-on or infiltration of precipitation
- Be constructed with chemical resistant water stops in all joints

TANKS

SECONDARY CONTAINMENT

Part 111, Rule 306 & 40 CFR 265.193 –

Vault System must:

- Have a compatible impermeable interior coating
- Provide against vapor formation & ignition if storing ignitable or reactive waste
- Have an exterior moisture barrier

TANKS

INSPECTION REQUIREMENTS

Part 111, Rule 306(1) & 40 CFR 265.195

Inspect each day (if present) or weekly if leaks are determined promptly either through detection systems or work practice (must be documented in facility operating record:

- Discharge, overflow/spill control equipment
- Monitoring equipment data
- Above ground portion of tank system (e.g., materials and area around tank)

TANKS

INSPECTION REQUIREMENTS

Part 111, Rule 306(1) & 40 CFR 265.195

Inspect Cathodic Protection for in ground tanks
(if present):

- Within six months after initial installation, annually after that
- Impressed current at least bimonthly

TANKS

INSPECTION RECORDS

**All tank inspections must be documented
and all documents must be kept
for at least 3 years.**

TANKS CERTIFICATION

Part 111, Rule 306 & 40 CFR 265.192 –

Must obtain a written assessment that is reviewed and certified by an qualified professional engineer that includes:

- Design standards
- Hazard characteristics of the waste
- Determination performed by corrosion expert if the external shell of a metal tank is in contact with soil or water
- Design considerations if tank affected by vehicles

TANKS CERTIFICATION

Professional engineer written certification
must be kept on file at facility.

SUBPART CC RULES

WHAT ARE THEY?

EPA Rules for controlling certain air emissions

Part 111, Rule 306 (1) and Rule 634 adopts by reference 40 CFR Part 264, Subpart CC

Certain LQGs and Treatment, Storage, and Disposal Facilities (TSDFs) are subject to one of 3 different sets of requirements for containers under Subpart CC



SUBPART CC RULES

WHAT ARE THEY?

Part 111, Rules 306(1) & 634; & 40 CFR
264 & 265, Subpart CC -

Container/Tank requirements depend on:

- the size of container
- the organic content of the waste placed in the container
- whether or not waste stabilization occurs in container

SUBPART CC RULES

TSDFs as well as certain LQGs must comply with Subpart CC if they:

- generate a hazardous waste which has an average volatile organic (VO) concentration \geq 500 parts per million by weight (ppmw) at the point of waste origination and
- it is stored in containers larger than \sim 26 gallons

SQGs are exempt from Subpart CC



SUBPART CC RULES EXEMPTIONS

EXEMPTIONS:

- Wastewater treatment units
- Elementary neutralization units
- Emergency or spill management units
- Waste recycling units
- Satellite accumulation units
- RCRA empty containers
- If organic content is reduced prior to waste being placed in container

SUBPART CC RULES EXEMPTIONS

Hazardous waste < 500 ppmw

Records to be kept:

- Test Results
- Date, time, and location of sampling for EACH hazardous waste
- Measurements
- Calculations
- Other documentation

SUBPART CC RULES EXEMPTIONS

Records documenting the rationale for the exemption must be reviewed and updated, when necessary, and at least once every twelve months. These records must be maintained on site.

SUBPART CC RULES DEFINITIONS

Part 111, Rules 306(1) & 40 CFR 265.1081 -

“LIGHT LIQUID SERVICE” means:

Vapor pressure of one or more of the organic constituents is > 0.3 kilopascals at 20 degrees Celsius and the total concentration of organic constituents is equal to or greater than 20 percent by weight



SUBPART CC RULES

CONTAINERS DEFINED

Level 1 –

- 26 to < 122 gallon capacity in light liquid service OR
- > 26 and not in light liquid service

Level 2 –

- ≥ 122 gallon capacity AND
- In light liquid service

Level 3 –

- Waste stabilization unit

SUBPART CC RULES

CONTAINER REQUIREMENTS

Level 1 – 40 CFR 265.1087(c)

- DOT approved
- Covers and closure devices for all openings
- Open top with organic vapor suppressing barrier

Level 2 – 40 CFR 265.1087(d)

- DOT approved
- Vapor tight or operated with no detectable emissions

Level 3 – 40 CFR 265.1087(e)

- Vented (or located in enclosure that is vented) through closed vent system to a control device

SUBPART CC RULES

TANK DEFINED

LEVEL 1 Tank, per 40 CFR 264.1084, is:

- < 20,000 gal with Vapor Pressure < 11.1 psi
- 20,000 – 40,000 gal with Vapor Pressure < 4 psi
- > 40,000 gal with Vapor Pressure < .75 psi
- Not used to heat hazardous waste
- Not used as a waste stabilization unit

SUBPART CC RULES TANK REQUIREMENTS

LEVEL 1 Tanks per 40 CFR 265.1084(c) must:

- Have fixed roof
- Have any and all openings in roof equipped with closure device or connected by a closed vent system that is vented to a control device.
- Have initial inspection and then once each year thereafter (some exceptions to this)

SUBPART CC RULES TANK REQUIREMENTS

LEVEL 2 Tanks per 40 CFR 265.1085(d) must:

- Have an external floating roof or
- Have an internal floating roof if fixed-roof or
- Vent to control device or
- Be a pressure tank or
- Vent to an enclosed combustion device

SUBPART CC RULES TANK REQUIREMENTS

- All tanks subject to Subpart CC control requirements must be inspected
- Inspection procedures and requirements vary by type of tank
- Records of all inspections regardless of the tank control level must be kept at the facility for a minimum of 3 years after the date of the inspection
- More detailed record keeping and inspection requirements are required for floating roof tanks and tanks or enclosures which vent to a control device

CLOSED CONTAINER

WHAT IS IT?

Regulations do not define “closed container”.

Requiring containers to be closed is a means to minimize emissions of volatile wastes, to protect ignitable or reactive wastes from sources of ignition or reaction, to prevent spills, reduce the potential for mixing of incompatible wastes and reduce direct contact of personnel with waste.

CLOSED CONTAINER LIQUID HAZARDOUS WASTES

For containers in storage:

- Cover secured with snap rings bolted
- Bungholes capped
- If needed, pressure-vacuum relief valve to avoid explosions

For containers in satellite accumulation:

- Lids properly affixed to prevent spills
- Funnels with manual or spring-loaded lids or tightly screwed into bung hole with a one-way valve

CLOSED CONTAINER SOLID HAZARDOUS WASTES

Container is closed if there is complete contact between the lid and the rim all around the top of the container.

If continuously receiving wastes, containers should be capable of catching and retaining all of the material.

NEED HELP/RESOURCES?

- Contact the EAC at 1-800-662-9278
- Contact your DEQ district waste inspection staff
- Go to www.epa.gov/wastes/hazard/downloads/tool.pdf
- Go to www.michigan.gov/deqwaste
- Search the DEQ Pub Center at www.deq.state.mi.us/pubcenter
- Contact a hazardous waste vendor
- Contact a waste consultant



Questions

**Feel free to ask questions via your
question/chat box**