Hazardous Waste Generator
Accumulation, Storage, and
Labeling Requirements

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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 proper accumulation & storage:

Act 451, Michigan Natural Resources & Environmental Protection Act:

- Part 111, Hazardous Waste
- Part 121, Liquid Industrial By-Product
- Part 115, Solid Waste
- Part 169, Scrap Tires
Waste Labeling and Storage

Regulations requiring proper accumulation & storage (continued):

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 type and amount

- Liquid Industrial By-Product Generators (LIB)
- Universal Waste Generators
- Conditionally Exempt Small Quantity Generators (CESQGs)
- Small Quantity Generators (SQGs)
- Large Quantity Generators (LQGs)

Less Regulation

More Regulation
Hazardous Waste Generators

**CESQG**
- Generate < 220 lbs. non-acute monthly
- ~ ½ drum non-acute monthly
- Never accumulate > 2,200 lbs.

**SQG**
- Generate > 220 lbs. & < 2,200 lbs. non-acute monthly
- ~ ½ drum to 5 drums monthly
- Never accumulate > 13,200 lbs.

**LQG**
- Generate > 2,200 lbs. non-acute or
- > 5 drums monthly
- > 2.2 lbs. acute
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.
Conditionally Exempt Small Quantity Generators
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 accumulated in an area protected from weather, fire, physical damage, and vandals
Small Quantity Generators

Part 111, Rule 306 – Containers must:

– Be inspected weekly
– 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 ~ 5 drums
Small Quantity Generators
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 distance < 50 ft)
Large Quantity Generators

Part 111, Rule 306 – Containers must:

– Be accumulated in an area protected from weather, fire, physical damage, and vandals
– Be inspected weekly with inspections documented (kept on-site 3 yrs)
– Not contain incompatible wastes
– Be separated from each other if holding incompatibles
– Be washed if previously holding incompatibles
– Have secondary containment
Large Quantity Generators
Generator Accumulation/Storage Time Frames

SQG’s
- Generate > 220 lbs. & < 2200 lbs. non-acute monthly
- Accumulate not more than 13,200 lbs.
- Store 180 days or less

LQG’s
- Generate > 2200 lbs. non-acute or > 2.2 lbs. acute or severely toxic monthly
- Store 90 days or less
Secondary Containment
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
Secondary Containment
Same for SQGs and LQGs

Solid

Liquid
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/all containers combined)
- 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 quart severely/acutely toxic
– Managed to prevent leaks
Satellite Containers
Academic Laboratories

ADOPTED IN MICHIGAN

Part 111, Rule 313 & 40 CFR 262.200 –

- Applies to colleges, universities, or college - university affiliated teaching hospitals and non-profit research institutes.
- Allows academic entities to decide when & where on-site hazardous waste determinations are made.
- Requires hazardous waste determinations to be made by trained professionals (not students).
- Requires development of a lab management plan.
- Requires hazardous waste to be removed every six months.
- Unused hazardous wastes generated during once/year lab clean-out are not counted towards generator status.
Academic Laboratories


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<th>Side-by-Side Comparison: Satellite Accumulation vs. Academic Labs Rule</th>
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<td>Any IC or IC with specified on SAA at or near point of generation</td>
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<td><strong>Temperature</strong></td>
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<td>10 cubic feet of water</td>
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<td>100 cubic feet of water</td>
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<td>Must be stored at the point of generation</td>
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<td>What the waste is first processed</td>
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This chart is a summary of federal regulations and is not intended to be exhaustive. Prepared by EPA, July 2009.
Liquid Industrial By-Product

Part 121, Section 12113

- Storage of liquid industrial by-product shall be protected from weather, fire, physical damage, and vandals
- 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.
- Liquid industrial waste must be managed to prevent discharge into soil, surface water or groundwater, drain or sewer.
- Generators must label or mark containers and tanks of liquid industrial by-product to identify their contents.
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
- www.michigan.gov/electronicwaste
Universal Waste
Electric Lamps

Part 111, Rule 228 (4) – Containers must be:

- Labeled “UNIVERSAL WASTE LAMPS” OR “WASTE LAMPS” OR “USED LAMPS”
- Structurally sound and compatible with contents of lamps
- Able to prevent breakage
- Kept closed
Universal Waste
Mercury Devices

Part 111, Rule 228(4) – Containers must be:


– 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 compatible with contents
- Able to prevent breakage
- Kept closed
Universal Waste Pharmaceuticals

Recommend label “Universal Waste Pharmaceuticals” in:

– MHA Pharmaceutical Waste Management Guide
– MHA Guide Example Posting
– Pharmaceutical Tutorial

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
Tanks
SQG & LQG

Part 111, Rule 306 & 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
Part 111, Rule 306

Additional Requirements:

- Ignitable and reactive wastes (40 CFR 265.198)
- Controls and practices to prevent spills & overflows (40 CFR 265.194)
- Secondary Containment (40 CFR 265.193)
- Inspection Requirements
- Inspection Records
- Tank Certification (40 CFR 265.192)
Tanks
Inspection Requirement and Records

– All tanks must be inspected each day, including overflow and spill control devices

– 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 a 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 from hazardous waste storage containers

– 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 1 of 3 different sets of requirements for containers/tanks
Subpart CC Rules
What Are They?

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 > 500 parts per million by weight (ppmw) at the point of waste origination and
- it is stored in containers larger than ~ 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

If hazardous waste < 500 ppmw Records to be kept:

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

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

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% by weight.
Subpart CC Rules
Container Requirements

Level 1 Container (26 to 122 gal. light liquid service)

- 40 CFR 265.1087(c)
  - DOT Approved
  - Covers and closure devices for all openings
  - Open top with organic vapor suppressing barrier

Level 2 Container (>122 gal. light liquid service)

- 40 CFR 265.1087(d)
  - DOT approved
  - Vapor tight or operated with no detectable emissions
Subpart CC Rules
Container Requirements (cont.)

Level 3 Container (Waste Stabilization Unit)

- 40 CFR 265.1087(e)
  - Vented (or located in enclosure that is vented) through closed vent system to a control device
Subpart CC Rules
Tanks Defined

• LEVEL 1 Tanks - 40 CFR 265.1084(c)

• LEVEL 2 Tanks – 40 CFR 264.1084 (d)
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, to reduce the potential for mixing of incompatible wastes and reduce direct contact of personnel with waste.
Closed Container
Liquid Hazardous Waste

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 Containers

Solids

Liquids
Closure Devices
Closed Container
Solid Hazardous Waste

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.
THANK YOU FOR PROTECTING MICHIGAN’S ENVIRONMENT!

www.michigan.gov/deqworkshops
Questions?