Hazardous Waste Generator Workshop
Advanced Course
Disclaimer

This will not be a substitute for your training requirements.

Job specific training is required to meet the requirements under RCRA.
Topics For This Afternoon

- Regulatory updates:
  - Current State of Reg Adoption
  - Hazardous Waste Generator Improvements Rule
  - E-Manifest
  - Pharmaceutical Rule

- Breakdown of the Listed Hazardous Wastes
  - Solvent-Contaminated Wipes Rule
Regulatory Updates

Kansas is currently reviewing all regulations from last adoption date (2006) through 2019. This will include:

• 2017 Generator Improvements Rule
• 2018 e-Manifest
• 2019 Pharmaceutical Rule (Subpart P)

And evaluation of optional regulations, such as:

• Definition of Solid Waste Rule
• Academic Laboratory Rule (Subpart K)

No timeline yet for adoption.
Hazardous Waste Generator Improvements Rule

Went into effect May 31, 2017 at the federal level.

Authorized states are going through adoption and authorization process.

Kansas has not yet adopted these regulations.
• 2017 policy allowing some less stringent provisions.
Effects of These Changes

More stringent:

• Identifying hazards of wastes being accumulated & labeling
• Notification of closure
• Closure as a landfill for LQGs accumulating hazardous wastes in containers that cannot meet closure performance standards
• Biennial reporting for recyclers who don’t store prior to recycling
• Quick reference guide for contingency plans

Less stringent:

• VSQG waste consolidation
• Episodic generation
• Waiver from 50-foot rule
• SQG re-notification (More stringent for EPA)

Equally stringent:

• Biennial reporting for whole year, not just months the generator was an LQG

Our Mission: To protect and improve the health and environment of all Kansans.
Regulations

- Reorganization of the 40 CFRs to become more user-friendly

<table>
<thead>
<tr>
<th>Provision</th>
<th>Existing Citation</th>
<th>New Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generator Category Determination</td>
<td>261.5(c)-(e)</td>
<td>262.13</td>
</tr>
<tr>
<td>VSQG Provisions</td>
<td>261.5(a), (b), (f)-(g)</td>
<td>262.14</td>
</tr>
<tr>
<td>Satellite Accumulation Area Provisions</td>
<td>262.34(c)</td>
<td>262.15</td>
</tr>
<tr>
<td>SQG Provisions</td>
<td>262.34(d)-(f)</td>
<td>262.16</td>
</tr>
<tr>
<td>LQG Provisions</td>
<td>262.34(a), (b), (g)-(l), (m)</td>
<td>262.17</td>
</tr>
</tbody>
</table>
### Labeling of Containers

<table>
<thead>
<tr>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “Hazardous Waste”</td>
<td>• “Hazardous Waste”</td>
</tr>
<tr>
<td>• Accumulation start date (storage only)</td>
<td>• Accumulation start date (storage only)</td>
</tr>
<tr>
<td></td>
<td>• Identify hazards (not identity)</td>
</tr>
<tr>
<td></td>
<td>• Applicable RCRA waste codes prior to shipping</td>
</tr>
</tbody>
</table>
Contingency Plans

<table>
<thead>
<tr>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Attempt to make arrangements with Emergency Responders</td>
<td>• Attempt to make arrangements with Emergency Responders</td>
</tr>
<tr>
<td>• Document if responders decline to enter into arrangements</td>
<td>• Document all attempts in facility operating record</td>
</tr>
<tr>
<td></td>
<td>• Quick Reference Guide</td>
</tr>
<tr>
<td></td>
<td>• Information most critical for emergency responders</td>
</tr>
<tr>
<td></td>
<td>• To be included when a new or updated plan is submitted</td>
</tr>
</tbody>
</table>

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Quick Reference Guide

• Types/names of hazardous wastes and associated hazards
• Estimated maximum amounts of hazardous wastes
• Hazardous wastes requiring unique/special treatment
• Map showing where hazardous wastes are generated, accumulated and treated at the facility
• Map of facility and surroundings to identify routes of access and evacuation
• Location of water supply
• Identification of on-site notification systems
• Name of emergency coordinator(s) or listed staffed position(s) and 7-day/24-hour emergency telephone number(s)
Episodic Events

New Kansas Policy (2017):

- Kansas is allowing certain provisions of these new regulations until adoption.
  - VSQG Consolidation
  - 50-Foot Waiver
  - LEPC
  - Episodic Events
## 50-Foot Rule Waiver

<table>
<thead>
<tr>
<th>Current</th>
<th>New</th>
</tr>
</thead>
<tbody>
<tr>
<td>• All containers holding ignitable and/or reactive waste must be located at least 50-feet from the property line.</td>
<td>• All containers holding ignitable and/or reactive waste must be located at least 50-feet from the property line.</td>
</tr>
</tbody>
</table>
Waste Consolidation

Consolidate waste at an LQG under the control of the same person

- Person – as defined under RCRA
- Control – means the power to direct policies at the facility

CESQGs and KSQGs

- Mark and label waste containers with “Hazardous Waste” and the hazards

LQG

- Notifies state on Notification of Regulated Waste Activity form and addendum that it is participating in this activity and identifies which CESQGs and KSQGs are participating.
- Maintain records for each shipment.
- Manages consolidated waste as LQG hazardous waste including ensuring final treatment or disposal is at a RCRA-designated facility (TSDF or recycler).
- Reports in Biennial Report

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Episodic Events

New

- Generator can keep their existing category provided they comply with a set of requirements in 40 CFR § 262 Subpart L:
  - One calendar event per year (planned or unplanned) with ability to petition for a second event.
  - If first event is planned, the petition must be for an unplanned event or vice versa.
  - Notify KDHE at least 30 days prior to planned event.
  - Notify within 72 hours after an unplanned event.
  - Conclude the event within 60 days, including removing waste.
Episodic Events

New

• Generator can keep their existing category provided they comply with a set of requirements in 40 CFR §262 Subpart L:
  • All containers must be:
    • Labeled “Episodic Hazardous Waste”
    • Identify hazards of contents
    • Date episodic event began (and ended for tanks)
  • Maintain records including the date the episodic event began.
Episodic Events

Generators must:

• Obtain EPA ID number (VSQG)
• Use HW manifest and transporter to send episodic waste to RCRA-designated facility
• Manage waste such that possibility of accident or release is minimized
• Label containers
• Identify an emergency coordinator
• Maintain records associated with event for three years

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System is accessed through EPA’s RCRAInfo database.
https://rcrainfo.epa.gov/rcrainfoprod

- Online database with information on all facilities with an EPA ID number.
  - Facility name, address, Biennial Reports, etc.
e-Manifest

What is e-manifest?
• e-Manifest is an electronic module for the generation, submission, and storage of hazardous waste manifests.
  • In other words, a database.

More information can be found at www.epa.gov/e-manifest.
• FAQs for many common questions or issues
• e-Manifest listerv and developer listserv
• Information about monthly webinars
e-Manifest

• Benefits
  • Saves on natural resources
  • Convenience of having an electronic system to track, correct, and retain records of shipments.
  • Replaces hardcopy recordkeeping regulatory requirements if facility opts in.
    • Not historical; only applies to manifests shipped on or after June 30, 2018.
e-Manifest

- All receiving facilities must submit manifests to EPA using one of the available options.
  - All wastes shipped on a hazardous waste manifest, including:
    - State-only wastes
    - PCBs
    - Non-hazardous waste
    - Imports
  - Exports are excluded from this requirement.
- Substitutes state manifest submission requirements.
e-Manifest

• While the submission of manifests to EPA is mandatory, the use of the system is optional.
  • Paper manifests will still be accepted.
  • DOT still requires a paper copy of every manifest while in transit for now.

• Different methods for submitting manifests are available to suit current needs.
  • In 2021, paper submissions to EPA will not be available. Generators may still start a manifest with a paper copy.
e-Manifest

- Receiving facilities **must**:
  - Submit all received manifests to EPA within 30 days from the date of receipt.
    - Mail in hard copies (most expensive)
    - Scanned image upload
    - Data plus image upload
    - Submit electronically (least expensive)

- Hybrid option exists where a manifest starts as a paper copy and the transporter or receiving facility converts it to electronic. Counts as electronic submission.
e-Manifest

- Fees:

<table>
<thead>
<tr>
<th>Manifest Submission Type</th>
<th>Current Fees</th>
<th>New Fees (Oct 2019-Sept 2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper</td>
<td>$15.00</td>
<td>$25.00</td>
</tr>
<tr>
<td>Scanned Image Upload</td>
<td>$10.00</td>
<td>$20.00</td>
</tr>
<tr>
<td>Data + Image Upload</td>
<td>$6.50</td>
<td>$14.00</td>
</tr>
<tr>
<td>Electronic (Full and Hybrid)</td>
<td>$5.00</td>
<td>$8.00</td>
</tr>
</tbody>
</table>

- These are fees receiving facilities will be responsible for per manifest. EPA is not directing these fees at generators or transporters.

- Fees are paid through e-manifest itself.
e-Manifest

• Generators and associated transporters and receiving facilities can view manifests right away.

• Federal, State, etc. agencies will also be able to view manifests soon after they are entered into the system.

• Public will be able to view manifests 90 days after manifests are received.
  • Manifests cannot be considered confidential business information.
  • Department of Homeland Security is restricting the view of manifest information containing certain chemicals of interests.
e-Manifest

• To submit electronically, or to view, prepare, and/or sign electronically, you must register in EPA’s RCRAInfo V6 system.
  • https://rcrainfo.epa.gov/rcrainfoprod

• Once registered, add your facility/facilities to your profile.
  • Can request all facilities from same state at same time.
  • Facilities in different states must be separate requests.

• Request permissions appropriate to your level of use.
e-Manifest

- Four layers of permissions available:
  - Viewer – can view all manifests created after midnight on June 30, 2018.
  - Preparer – can view and create manifests.
  - Certifier – can view, create, and sign manifests
  - Site Manager – all of the above, plus approve additional roles at your facility. Recommend two site managers for each facility.

- Transporters and receiving facilities may start manifests for generators.
e-Manifest

• To use the electronic system, you should communicate with your transporter and destinated facility to ensure everyone is fully aware of expectations and logistics.

• Even if you don’t use the system, you should still have this conversation.
  • Most importantly, to understand any associated costs.
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e-Manifest

EPA

General Info—www.epa.gov/e-manifest

Kansas Specific—www.epa.gov/ks/e-manifest

KDHE

www.kdheks.gov/waste/e-manifest.htm

<table>
<thead>
<tr>
<th>Hazardous Waste Generators &amp; Transporters</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Biennial HW Report</td>
</tr>
<tr>
<td>• e-Manifest</td>
</tr>
<tr>
<td>• EPA’s RCRAInfo Database</td>
</tr>
<tr>
<td>• Hazardous Waste Compliance Calendars</td>
</tr>
</tbody>
</table>

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Airbag Variance

EPA published a final rule for airbag waste on November 30, 2018.
• Safety concerns with Takata airbags.

KDHE has granted a variance for airbag waste based off of EPA’s final rule.
Airbag Variance

Applies to all airbag waste handlers. So long as the following are met, airbag waste does not need to be counted, and is not subject to most regulations.

• See “Final Decision to Grant a Variance for Airbag Waste” for details.
Airbag Variance

- Airbags must never exceed 250 airbag modules or inflators.
- Maximum accumulation time – 180 days.
- Container must be designed to address the risk posed, and labeled “Airbag Waste-Do Not Reuse”.
- Sent directly to either:
  - An airbag waste collection facility in the US, as defined in the document, or
  - A designated facility as defined by 40 CFR 260.10 as adopted by reference in KAR 28-29-260.
Airbag Variance

- Transportation must comply with USDOT regulations 49 CFR part 171 through 180.
- Handler must maintain on site for 3 years:
  - Record of all off-site shipments
    - Name and date of shipment
    - Name and address of receiving facility
    - Type (e.g., modules or inflators) and quantity of airbag waste
  - Confirmations of receipt from the receiving facility
    - Name and address of receiving facility
    - Type and quantity of airbag waste received
    - Date received
Airbag Variance

Once at the airbag waste collection facility or designated facility:
• Waste is subject to all applicable HW regulations, and
• The collection facility is considered the HW generator

The defective airbags are prohibited from being reused in any vehicle.
2019 Pharmaceutical Rule

40 CFR 266 Subpart P

Effective August 21, 2019 at the federal level.

Authorized states are going through adoption and authorization process.

Kansas has not yet adopted these regulations; HOWEVER,

Sewer ban is effective August 21, 2019 everywhere!
Currently implemented parts of the 2019 Pharmaceutical Rule

Sewer Ban:
- Hazardous waste pharmaceuticals may not be sewered
  - No disposal down the drain and no flushing
- Applies to:
  - All healthcare facilities and reverse distributors
  - Hazardous wastes that are DEA controlled substances

More information located on KDHE webpage under “Kansas Medication Disposal Program”:
All other aspects of the 2019 Pharmaceutical Rule that follow are implemented when Kansas adopts these regulations
2019 Pharmaceutical Rule

Regulations targeted towards hazardous waste pharmaceuticals at healthcare facilities and reverse distributors.

Eliminates intentional sewering of hazardous waste pharmaceuticals.

Reduces overlapping regulations (e.g., DEA, FDA)

Clarifies how reverse distribution/logistics works with RCRA.

Reduces regulations for nicotine.
2019 Pharmaceutical Rule – Pharmaceutical

- Any drug or dietary supplement for use by humans or other animals;
- Any electronic nicotine delivery system;
- Any liquid nicotine packed for retail sale for use in electronic nicotine delivery systems.
2019 Pharmaceutical Rule – Pharmaceutical

Includes, but not limited to:

- Dietary supplements
- Prescription and OTC drugs
- Homeopathic drugs
- Compounded drugs
- Investigational new drugs
- Pharmaceuticals remaining in non-empty containers
- Pharmaceutical contaminated PPE
- Clean-up materials from spills of pharmaceuticals

Does not include dental amalgam or sharps.

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2019 Pharmaceutical Rule

Nicotine:
• FDA-approved over-the-counter nicotine replacements (patches, gums, and lozenges) are no longer included under the P075 listing.

• Other forms of nicotine are still listed, including e-liquids/e-juices, prescription nicotine, pesticides containing nicotine, and nicotine used in research or manufacturing.

• Considered less stringent and subject to adoption.
## 2019 Pharmaceutical Rule

### Three types of hazardous waste pharmaceuticals:

<table>
<thead>
<tr>
<th>Non-creditable</th>
<th>Potentially creditable</th>
<th>Evaluated</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Broken or leaking</td>
<td>• Original manufacturer package (except recalls)</td>
<td>• No further evaluation or verification of credit is necessary</td>
</tr>
<tr>
<td>• Repackaged</td>
<td>• Undispensed</td>
<td>• Sent to a TSDF</td>
</tr>
<tr>
<td>• Dispensed</td>
<td>• Unexpired or less than 1 year past</td>
<td></td>
</tr>
<tr>
<td>• Expired &gt;1 year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Investigational new drugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Contaminated PPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Floor sweepings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Clean-up material</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2019 Pharmaceutical Rule

Part 266 Subpart P is considered more stringent and not optional.

All healthcare facilities and reverse distributors must manage their hazardous waste pharmaceuticals under this rule.
- Excludes CESQGs who may op-in under optional provisions.

All other hazardous waste must be managed as normal under 262.

Must submit a notification they are operating under Subpart P using form 8700-12 and must train personnel.
2019 Pharmaceutical Rule – Healthcare Facility

Includes, but not limited to:

- Wholesale distributors
- Military medical logistics facilities
- Hospitals
- Psychiatric hospitals
- Ambulatory surgical centers
- Health clinics
- Physician’s offices
- Optical and dental providers
- Chiropractors
- Long-term care facilities
- Ambulance services
- Pharmacies
- Long-term care pharmacies
- Mail-order pharmacies
- Retailers of pharmaceuticals (includes vape shops)
- Veterinary clinics and hospitals

Does NOT include:

- Pharmaceutical manufacturers
- Reverse distributors
- Reverse logistics centers
2019 Pharmaceutical Rule – Long-term Care Facility

**Includes, but not limited to:**
- Hospice facilities
- Nursing facilities
- Skilled nursing facilities
- Nursing and skilled nursing care portions of continuing care retirement communities

**Does NOT include:**
- Group homes
- Independent living communities
- Assisted living facilities
- Independent and assisted living portions of continuing care retirement communities

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2019 Pharmaceutical Rule

No generator classes under Part 266 Subpart P. All facilities regulated the same.

Don't have to keep track of how much hazardous waste pharmaceuticals are generated per month, nor segregate between acute/non-acute HW pharmaceuticals.
2019 Pharmaceutical Rule

Pharmaceuticals not subject to RCRA regulation:
• Legitimately used/reused or reclaimed.
• Recalled*
• Under preservation order, or during an investigation or judicial proceeding*
• Investigational new drugs*
• Household waste
  • Healthcare facilities that are DEA registrants and collectors of household pharmaceuticals (takebacks) must comply with conditions in 266.506

*Subject to Subpart P when decision is made to discard.
2019 Pharmaceutical Rule

Must conduct individual hazardous waste determinations, unless managing all of its waste pharmaceuticals as hazardous.

<table>
<thead>
<tr>
<th>Non-creditable</th>
<th>Potentially Creditable</th>
</tr>
</thead>
<tbody>
<tr>
<td>• &quot;Hazardous Waste Pharmaceuticals&quot;</td>
<td>• No labeling</td>
</tr>
<tr>
<td>• Good condition</td>
<td>• No container standards</td>
</tr>
<tr>
<td>• Compatible</td>
<td>• No time limit</td>
</tr>
<tr>
<td>• Closed</td>
<td></td>
</tr>
<tr>
<td>• 1 year accumulation limit</td>
<td></td>
</tr>
</tbody>
</table>

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2019 Pharmaceutical Rule

When shipping:

**Non-creditable and evaluated**
- Sent to TSDF
- Manifest and HW transporter
- Non-Creditable – Waste code "PHARMS"
- Evaluated – Waste codes as normal

**Potentially Creditable**
- Can be sent to reverse distributor before TSDF
- Manifest and HW transporter not required
- Must receive delivery confirmation within 35 days
2019 Pharmaceutical Rule

Empty containers:
- Residues of hazardous waste pharmaceuticals remaining in "RCRA empty" containers are not regulated
  - Includes acute hazardous waste
  - Triple rinsing is no longer required/allowed due to sewer ban
2019 Pharmaceutical Rule – Reverse Distributors

Can only accept hazardous waste that is "potentially creditable hazardous waste pharmaceuticals." May be a manufacturer.

No RCRA permit required

No generator categories; all are regulated the same
• Standards similar to LQGs, with additions:
  • One-time notification as a reverse distributor
  • Inventory of hazardous waste pharmaceuticals
  • Security requirements
2019 Pharmaceutical Rule

Reverse Distributors must evaluate each potentially creditable HW pharmaceutical within 30 days

- May send:
  - to another reverse distributor (Still potentially creditable)
  - After 3rd, must be sent to TSDF
  - TSDF (Considered evaluated)

- Maximum accumulation time after evaluation: 180 days.
## 2019 Pharmaceutical Rule

Reverse Distributors:

<table>
<thead>
<tr>
<th>Potentially Creditable</th>
<th>Evaluated</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No labeling</td>
<td>• Designated on-site accumulation area</td>
</tr>
<tr>
<td>• No container standards</td>
<td>• Weekly inspections</td>
</tr>
<tr>
<td>• Not included on BR</td>
<td>• LQG training requirements</td>
</tr>
<tr>
<td></td>
<td>• Labeled &quot;Hazardous Waste Pharmaceuticals&quot;</td>
</tr>
<tr>
<td></td>
<td>• Containers in good condition</td>
</tr>
<tr>
<td></td>
<td>• Labeled with waste codes prior to shipping</td>
</tr>
<tr>
<td></td>
<td>• Included on BR</td>
</tr>
</tbody>
</table>

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2019 Pharmaceutical Rule

Only the sewer ban is effective August 21, 2019. All other provisions are effective after Kansas adopts the rule.

Listed Hazardous Wastes

Listed hazardous wastes are selected based on the risk posed to human health as follows:

• It exhibits a characteristic hazard;
• It is found to be fatal to humans in low doses, or meets an LD 50 criteria in rats based on route of exposure in the absence of human data; or,
• The waste is capable of posing a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed, or otherwise managed.
Listed Hazardous Wastes

Keep in mind!

• All wastes must be evaluated for characteristics regardless of their listing status.
F-Listed Hazardous Wastes

Spent Solvents

- F001 Halogenated Degreasing Solvents (T)
- F002 Halogenated Solvents (T)
- F003 Non-Halogenated Solvents (I)
- F004 Non-Halogenated Solvents (T)
- F005 Non-Halogenated Solvents (I,T)
## F001 Listed Wastes

<table>
<thead>
<tr>
<th>Large Scale Degreasing Operations (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrachloroethylene*</td>
</tr>
<tr>
<td>Trichloroethylene*</td>
</tr>
<tr>
<td>Methylene chloride*</td>
</tr>
<tr>
<td>1,1,1-trichloroethane*</td>
</tr>
<tr>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td>Chlorinated fluorocarbons</td>
</tr>
</tbody>
</table>

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## F002 Listed Wastes

### Degreasing Operations (T)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Note</th>
<th>Substance</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetrachloroethylene*</td>
<td></td>
<td>1,1,2-trichloro-1,2,2-trifluoroethane</td>
<td></td>
</tr>
<tr>
<td>Trichloroethylene*</td>
<td></td>
<td>Ortho-dichlorobenzene</td>
<td></td>
</tr>
<tr>
<td>Methylene chloride*</td>
<td></td>
<td>Trichlorofluoromethane</td>
<td></td>
</tr>
<tr>
<td>1,1,1-trichloroethane*</td>
<td></td>
<td>1,1,2-trichloroethane</td>
<td></td>
</tr>
<tr>
<td>Chlorobenzene</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
F-Listed Hazardous Wastes

F001 and F002 spent solvents marked with * appear on both lists. The size of the operation defines which listing applies.

- Trichloroethylene (TCE) used in a 1,000-gallon degreaser unit would carry the F001 listing.

- TCE used in a 5-gallon parts washer would carry the F002 listing.
### F003 Listed Wastes

<table>
<thead>
<tr>
<th>Non-Halogenated (I)</th>
<th>Xylene</th>
<th>Methyl isobutyl ketone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetone</td>
<td>Methylisobutylketone</td>
<td>N-butyl alcohol</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td>Cyclohexanone</td>
<td>Methanol</td>
</tr>
<tr>
<td>Ethyl benzene</td>
<td>Methanol</td>
<td></td>
</tr>
<tr>
<td>Ethyl ether</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
F-Listed Hazardous Wastes

The F003 waste code only applies if the waste is ignitable at the point of generation.

- If the spent solvent on this list carries the D001 characteristic waste code at the point of generation, it would also carry the F003 waste code.

- If the spent solvent on this list does not carry the D001 characteristic waste code, the F003 waste code does not apply.
<table>
<thead>
<tr>
<th>Non-Halogenated (T)</th>
<th>Cresols and cresylic acid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Nitrobenzene</td>
</tr>
</tbody>
</table>
### F005 Listed Wastes

<table>
<thead>
<tr>
<th>Non-Halogenated (I, T)</th>
<th>Toluene</th>
<th>Pyridine</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Methyl ethyl ketone</td>
<td>Benzene</td>
</tr>
<tr>
<td></td>
<td>Carbon disulfide</td>
<td>2-ethoxyethanol</td>
</tr>
<tr>
<td></td>
<td>Isobutanol</td>
<td>2-nitropropane</td>
</tr>
</tbody>
</table>
F-Listed Hazardous Wastes

Where do they apply?

- All spent solvent mixtures/blends containing, before use, a total of 10% or more by volume of any of the F001, F002, F004, and/or F005 spent solvents.

- Still bottoms from the recovery of these spent solvents.
## F-Listed Hazardous Wastes

### Examples

<table>
<thead>
<tr>
<th>Composition</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>85% water, 15% tetrachloroethylene (PCE) (F001/F002)</td>
<td>Used for small scale degreasing</td>
</tr>
<tr>
<td>95% Water, 5% PCE (F001/F002)</td>
<td>Used for small scale degreasing</td>
</tr>
<tr>
<td>75% xylene (F003), 15% toluene (F005), 10% water</td>
<td>Ignitable (D001)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>F002</td>
<td>Not listed</td>
</tr>
<tr>
<td>F003, F005</td>
<td>Also D001</td>
</tr>
</tbody>
</table>

Our Mission: To protect and improve the health and environment of all Kansans.
### F-Listed Hazardous Wastes

<table>
<thead>
<tr>
<th>Examples</th>
<th>F002, F005</th>
</tr>
</thead>
<tbody>
<tr>
<td>85% isopropyl alcohol</td>
<td>More than 10%</td>
</tr>
<tr>
<td>8% chlorobenzene (F002)</td>
<td></td>
</tr>
<tr>
<td>7% methyl ethyl ketone (F005)</td>
<td></td>
</tr>
<tr>
<td>92% isopropyl alcohol</td>
<td>Not listed</td>
</tr>
<tr>
<td>2% chlorobenzene (F002)</td>
<td>Less than 10%</td>
</tr>
<tr>
<td>6% methyl ethyl ketone (F005)</td>
<td></td>
</tr>
<tr>
<td>75% xylene (F003)</td>
<td>F005</td>
</tr>
<tr>
<td>25% toluene (F005)</td>
<td></td>
</tr>
<tr>
<td>Still bottoms from recycling</td>
<td></td>
</tr>
<tr>
<td>Not ignitable</td>
<td></td>
</tr>
</tbody>
</table>

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# F-Listed Hazardous Wastes

<table>
<thead>
<tr>
<th>Examples</th>
<th>Not listed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste paint containing methyl ethyl ketone (MEK) used as a thinner during painting operations.</td>
<td>May be characteristic</td>
</tr>
<tr>
<td>MEK used to clean paint equipment.</td>
<td>F005</td>
</tr>
<tr>
<td>Both of these waste streams are emptied into the same satellite accumulation container.</td>
<td>Entire mixture is F005</td>
</tr>
</tbody>
</table>

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F-Listed Hazardous Wastes

Heavy Metals
- F006-F019

Dioxin Wastes
- F020-F023
- F026-F027

Chlorinated Aliphatic Hydrocarbons
- F024 and F025

Wood Preservation
- F032-F035

Petroleum Refining
- F037-F038

Multi-Source Leachates
- F039
K-Listed Hazardous Wastes

Manufacturing process wastes from specific sources.

- Wood Preservation
- Inorganic Pigments
- Organic/Inorganic Chemicals
- Pesticides
- Explosives
- Veterinary Pharmaceuticals
- Iron and Steel
- Primary Aluminum
- Secondary Lead
- Petroleum Refining
- Ink Formulation
- Coking

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P- and U-Listed Hazardous Wastes

Commercial Chemical Products

- Discarded
- Off-Specification
- Residues (container, spill, etc.)

P-List

- Acutely Hazardous
- Regulated at 2.2 pounds

U-List

- Toxic (non-acute)
P- and U-Listed Hazardous Wastes

**Must be the sole active ingredient**

- Two or more active ingredients (P- and/or U-Listed) prevents the listings from applying.

- **NOTE** - Additives or other ingredients that do not serve the primary function of the product do not count as an active ingredient.
### P- and U-Listed Hazardous Wastes

<table>
<thead>
<tr>
<th>Examples</th>
<th></th>
<th>U220</th>
</tr>
</thead>
<tbody>
<tr>
<td>85% toluene (Active)</td>
<td>15% water</td>
<td>U220</td>
</tr>
<tr>
<td>75% toluene (Active)</td>
<td>15% water</td>
<td>U220</td>
</tr>
<tr>
<td>10% additives to improve the odor of the mixture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50% toluene (Active)</td>
<td>35% xylene (Active)</td>
<td>15% water</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Examples**: Examples of P- and U-listed hazardous wastes.

- **U220**: Waste containing 85% toluene (Active) and 15% water.
- **U220**: Waste containing 75% toluene (Active) and 15% water, with 10% additives to improve the odor of the mixture.
- **Not listed**: Waste containing 50% toluene (Active), 35% xylene (Active), and 15% water.

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P- and U-Listed Hazardous Wastes

Reminder!

• Even if a waste does not meet a listing definition, it may still carry a characteristic waste code.
P- and U-Listed Hazardous Wastes

Keep in Mind!

• The chemical names listed on these lists are common names and may have other industry specific names associated with them.
  • The List of Lists can help confirm synonyms, CAS numbers, and in some cases, RCRA waste codes.
  • https://www.epa.gov/epcra/consolidated-list-lists
Solvent-Contaminated Wipes

Kansas has not yet adopted the federal rule.

KDHE Policy BWM 2013-P2 allows generators to follow this rule.


Wipe can be a shop towel, rag, pad, or swab made of wood pulp, fabric, cotton, polyester blends, or other material.
Solvent-Contaminated Wipes

Applies to any wipe:

• Listed on the F001 through F005 lists or corresponding P- or U- Lists.
• Exhibits the characteristic of ignitability.
• Sent for disposal or to be laundered (reusable wipes).

Does not apply to wipes:

• Listed for anything other than solvents.
• Contaminated with trichloroethylene (disposable only).
• Exhibits the characteristic of corrosivity, reactivity, or toxicity from any other contaminant.
Solvent-Contaminated Wipes

Reusable wipes:

- Excluded from the definition of **solid waste** (do not require a waste determination).
- Do not count toward your generator status (monthly counting).

Disposable wipes:

- Excluded from the definition of a **hazardous waste** (do not require a waste determination).
- Do not count toward your generator status (monthly counting).
- Must go to an MSW landfill with a synthetic liner.
Solvent-Contaminated Wipes

Container Management:

• Non-leaking;
• Closed;
• Able to contain free liquids;
• Labeled with the words “Excluded Solvent-Contaminated Wipes”;
• Marked with the accumulation start date or alternative tracking method;
• Removed from the site within 180 days.
Solvent-Contaminated Wipes

Recordkeeping:

• Document name and address of all handlers (i.e., disposal, laundry, and dry cleaning facility) receiving wipes.
• Records or label to show wipes were on site 180 days or less.
• Description of how the “no free liquids” condition is met.
  • Includes all technologies, methods, sampling or knowledge used to ensure wipes sent to handlers do not contain free liquids.
Solvent Contaminated Wipes

A note on free liquids:

- Free liquids generated at the generator’s facility are the responsibility of the generator.
  - This includes proper management and waste counting.

- Free liquids generated at the handler’s facility are the responsibility of the handler.
Used Oil Requirements

Used oil is refined or synthetic oil that has been used and as a result, is contaminated with physical or chemical impurities.

• Is not considered a hazardous waste as long as it is recycled.

• Some management requirements apply.

• Does not count toward your monthly HW generation.
Used Oil Requirements

If used oil is mixed with a hazardous waste, the entire mixture must be managed as a hazardous waste if:

- **Hazardous waste was listed:**
  - Always

- **Hazardous waste was characteristic:**
  - Only if the resulting mixture exhibits any characteristic.
Used Oil Requirements

Containers and Above-Ground Tanks must be:

- Marked with the words “Used Oil”
- Maintained in good condition
<table>
<thead>
<tr>
<th>Transporting:</th>
<th>Can self transport your own used oil to an aggregation point or collection center.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>55-gallons or less:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>More than 55 gallons:</strong></td>
<td>Must use a registered transporter.</td>
</tr>
</tbody>
</table>

A list of registered used oil transporters can be found at [http://www.kdheks.gov/waste/hw/UO_list.pdf](http://www.kdheks.gov/waste/hw/UO_list.pdf)
Used Oil Requirements

Burning Used Oil in an on-site space heater:

- UO was generated on site or by a sister facility
- Received from do-it-yourselfers
- On-spec from any source

USED OIL FUEL SPECIFICATIONS
Constituent/Property Allowable Level
Arsenic ........................................... 5 ppm maximum
Cadmium ......................................... 2 ppm maximum
Chromium ...................................... 10 ppm maximum
Lead ............................................. 100 ppm maximum
Flash point ...................................... 100 °F minimum
Total Halogen .................................. 4,000 ppm maximum
(If > 1,000 ppm halogens, then only on-spec if rebuttable presumption is met)

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Used Oil Requirements

Burning Used Oil in an on-site space heater:

• Space heater must:
  • Have a maximum capacity of 0.5 million Btu/hour
  • Allow combustion gases to vent to the ambient air
Used Antifreeze

Recycling is the preferred method of handling; disposal is a last resort.

Disposal:

• Must conduct a waste determination
• If hazardous, it must be managed accordingly
• If non-hazardous, it can be:
  • Solidified and disposed of in a permitted municipal solid waste landfill.
  • Disposed through sanitary sewer with written permission from local wastewater authority.
Aerosol Cans

KDHE considers empty aerosol cans (RCRA empty) to be non-hazardous waste unless they contained an acutely hazardous waste.

If the contents were acutely hazardous (P-listed), the can must be managed appropriately.

If the aerosol can is not empty, but the contents cannot be used due to a broken nozzle, a clog, etc., attempts can be made to repair the can.
Aerosol Cans

- **Aerosol Can**
  - Disposal
    - Not Empty
      - Puncture and manage contents; or
      - Waste determination and manage
    - RCRA Empty
      - Recycle or dispose of
    - Repair and put back in service; or
      - Waste determination and manage
  - Broken
Aerosol Cans

In other words:

• If the aerosol can is RCRA empty and not P-Listed, it can be recycled or disposed of in the trash.

• If the can is not empty, but broken, it can be repaired and reused. If it can’t be repaired, it must be managed in one of the two ways below.

• If the aerosol can is not empty:
  • a waste determination is made and it is managed appropriately, or
  • it can be punctured in a puncturing device, the contents appropriately managed, and the can recycled or disposed of in the trash.
Aerosol Cans

Satellite accumulation must be at or near the point of generation of the aerosol can.
• Must be where the can was originally generated.
  • E.g., paint booth
• If an attempt at repair will be made, the point of generation is where that attempt is conducted.
  • E.g., maintenance area
  • Can is still considered a product up until then.
Puncturing Aerosol Cans

This is an exempt form of hazardous waste treatment as long as the activity is conducted in a closed, self-contained unit.

- Must have a filter attached to the unit.

When punctured, the waste drained from the can is considered a new point of generation. Because of this, the container the waste drains into can be managed as a satellite accumulation container.

The empty containers can be recycled or disposed of unless the contents were P-listed.
Puncturing Aerosol Cans
Electronic Waste

KDHE has not adopted the federal e-waste rules.

Currently, there is not a landfill ban in Kansas for electronic waste. However, we do encourage recycling whenever possible.
Available Resources

• KDHE wants to help all generators achieve compliance. Please call us with any questions at 785-296-1600.
• Small Business Environmental Assistance Program (SBEAP) operated by the Pollution Prevention Institute (PPI) at KSU 1-800-578-8898 (free anonymous assistance).
SBEAP

Webpage located here: https://www.sbeap.org/services-programs/hazwaste

• Contains information and helpful links:
• Waste Determination App
• Hazardous Waste Compliance Calendars
• YouTube Compliance Video – Container Management (New)
• Training Module (New)
Waste Determination

“Kansas Waste Determination” App

Developed through a partnership between KDHE, BWM and SBEAP

Available on both Android and Apple app stores. Working on port to Microsoft Store.

Will generate a sufficient waste determination document; however,
• Only as accurate as the information you provide.
• Will need to attach all supporting documentation.
Hazardous Waste Generator Workshop

Facility name: 
EPA I.D. #: 
Generator category: 

2018 Hazardous Waste Compliance Calendar

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Contact Information

• BWM web site: [http://www.kdheks.gov/waste](http://www.kdheks.gov/waste)

• Ken Powell
  785-296-1121
  [ken.powell@ks.gov](mailto:ken.powell@ks.gov)

• Brian Burbeck
  785-296-1613
  [brian.burbeck@ks.gov](mailto:brian.burbeck@ks.gov)

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Thank you/Questions

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