2018 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

- E-Manifest
- Hazardous Waste Generator Improvements Rule
- Used Oil
- Antifreeze
- Aerosol Cans
- E-Waste
- Breakdown of the Listed Hazardous Wastes
- Solvent-Contaminated Wipes Rule
- Case Study
e-Manifest

e-Manifest is here!

Hazardous Waste Electronic Manifest Establishment Act was signed October 05, 2012.

User Fee Rule went into effect December 20, 2017.

System is accessed through EPA’s RCRAInfo database.

More information can be found at www.epa.gov/e-manifest.
e-Manifest

Lots of background and specific system and logistical information available for you to read. For this workshop, we will focus on the practical aspects of this system and what you need to know.

FAQs for many common questions or issues can be found on EPAs e-manifest webpage. [https://www.epa.gov/e-manifest](https://www.epa.gov/e-manifest)

e-Manifest listerv and developer listserv available.
e-Manifest

What is RCRAInfo?
• Online database with information for all facilities with an EPA ID number.
  • Facility name, address, Biennial Reports, etc.
  • Available to you to view your own information.
  • https://rcrainfo.epa.gov/rcrainfoprod

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.
e-Manifest

• Benefits
  • Saves on natural resources
    • One year’s accumulation of paper manifests nationwide would stack to the height of the Empire State Building.
  • 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 manifests must be submitted to EPA using one of the available options.

• Substitutes state manifest submission requirements.

• If used by 100% of industry, it will reduce the amount of paper copies that will inevitably be disposed/recycled (EPA’s goal).
e-Manifest

- Who is required to comply?
  - Receiving facilities

- What is a receiving facility?
  - Any facility which receives waste from another source and terminates the manifest. For example:
    - Treatment, Storage, Disposal Facility (TSDF)
    - Publicly Owned Treatment Works (POTW)
e-Manifest

• Which manifests are required to be submitted?
  • All wastes shipped on a hazardous waste manifest, including:
    • State-only wastes
    • PCBs
    • Non-hazardous waste
    • Imports

• Exports are excluded from this requirement.

• Not historical. Only applies to manifests shipped June 30, 2018 and beyond.
e-Manifest

• Generators, transporters, and brokers are not required to register, though they may do so if they want to use the system.

• DOT still requires a paper copy of every manifest while in transit for now.
  • EPA is working with DOT to change 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.
  - New 5-copy manifest is rolling out, but the current 6-copy manifest is still acceptable.

- 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

- 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 destination 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 new costs.

• Fees were set to cover operation and maintenance costs of the system.
e-Manifest

- Final fees:
  - Paper submission - $15
  - Scanned image upload - $10
  - Data plus image upload - $6.50
  - Electronic and Hybrid - $5

- 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.
**Our Mission: To protect and improve the health and environment of all Kansans.**
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**Select Transporter**

<table>
<thead>
<tr>
<th>VATEST000001 - TEST TRANSPORTER 1 OF VA, ARLINGTON</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Transporter Name</th>
<th>Can e-Sign?</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEST TRANSPORTER 1 OF VA</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address Line 1</th>
<th>Address Line 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2777 SOUTH CRYSTAL DRIVE</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ZIP</th>
<th>City, Town or Village</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>22202</td>
<td>ARLINGTON</td>
<td>VIRGINIA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contact Name</th>
<th>Contact Phone</th>
<th>Contact Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCOTT CHRISTIAN</td>
<td>703-308-0023</td>
<td></td>
</tr>
</tbody>
</table>

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Our Mission: To protect and improve the health and environment of all Kansans.
### 13. Hazardous Waste Codes

<table>
<thead>
<tr>
<th>Federal Waste Codes</th>
<th>Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>None selected</td>
<td></td>
</tr>
</tbody>
</table>

**Clear All**

<table>
<thead>
<tr>
<th>KANSAS Waste Codes</th>
<th>Selected</th>
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</thead>
<tbody>
<tr>
<td>None selected</td>
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</tr>
</tbody>
</table>

**Clear All**

<table>
<thead>
<tr>
<th>VIRGINIA Waste Codes</th>
<th>Selected</th>
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</thead>
<tbody>
<tr>
<td>None selected</td>
<td></td>
</tr>
</tbody>
</table>

**Clear All**

### 14. Special Handling Instructions and Additional Information

**Special Handling Instructions for this Waste**

**Reference Information for this Waste**

Optional for internal tracking, e.g., Container Size or Profile #

**Add Reference Information**

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### Waste Information

<table>
<thead>
<tr>
<th>Line Number</th>
<th>HM</th>
<th>U.S. DOT Description</th>
<th>Containers</th>
<th>Type</th>
<th>Total Quantity</th>
<th>Units</th>
<th>Waste Codes</th>
<th>Management Method Code</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
<td>Flammable Liquids</td>
<td>1</td>
<td>DM</td>
<td>350</td>
<td>P</td>
<td>D001</td>
<td>H061</td>
<td></td>
</tr>
</tbody>
</table>

Add Waste Line

### Special Handling Instructions and Additional Information

Special Handling Instructions for this Manifest

Reference Information for this Manifest

Optional for internal tracking, e.g. Customer # or Purchase Order #

Add Reference Information
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e-Manifest

EPA

General Info– [www.epa.gov/e-manifest](http://www.epa.gov/e-manifest)

Kansas Specific – [www.epa.gov/ks/e-manifest](http://www.epa.gov/ks/e-manifest)

KDHE

[www.kdheks.gov/waste/e-manifest.htm](http://www.kdheks.gov/waste/e-manifest.htm)

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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
Transporting:

55-gallons or less:
Can self transport your own used oil to an aggregation point or collection center.

More than 55 gallons:
Must use a registered transporter.

A list of registered used oil transporters can be found at http://www.kdheks.gov/waste/hw/UO_list.pdf
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.
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, but we will.
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

Equally stringent:
- Biennial reporting for whole year, not just months the generator was an LQG
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>
Regulations

Defined new terms in § 260.10, including:

• Acute and non-acute hazardous wastes
• VSQG, SQG (previously defined incorrectly), and LQG

Clarified the regulations in a new section § 262.13, including:

• Procedures for counting hazardous waste
• How to determine generator category when generating acute and non-acute hazardous waste in the same month
• How to determine generator category when mixing solid and hazardous waste

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HW Determinations

Clarifications

- HW determinations must be accurate, not just conducted and recorded.
- Must be made at the POG and at any time during the course of management for waste potentially exhibiting a hazardous characteristic.

Improvements

- Explain more fully in § 262.11 how to evaluate wastes.
- Explain more fully how generators can use generator knowledge and tests.
Satellite Accumulation Areas

- Requires that hazardous wastes not be mixed or placed in a container with other hazardous wastes that are incompatible
- Allows containers to remain open temporarily under limited circumstances, when necessary for safe operations
- Provides maximum weight in addition to volume for acute hazardous waste limit
- Clarifies that “three days” means three consecutive calendar days
- Makes marking and labeling requirements consistent with central accumulation areas
### Labeling of Containers

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

• Arrangements may be made with Local Emergency Planning Committees (LEPCs), if appropriate
• Scope of the contingency planning and emergency procedures applies only to areas where hazardous wastes are being accumulated (including points of generation and SAAs)
• LQGs have flexibility to eliminate unnecessary employee personal information in the contingency plan
• SQGs and LQGs may determine the most appropriate locations for emergency equipment
• SQGs have the option to use contractors to address releases (containment/cleanup)
• Large facilities with internal response capabilities may seek a waiver from entering into arrangements with local authorities (final rule specifies waiver procedure)
Contingency Plans

Current

• Attempt to make arrangements with Emergency Responders
• Document if responders decline to enter into arrangements

New

• Attempt to make arrangements with Emergency Responders
• Document all attempts in facility operating record
• Quick Reference Guide
• Information most critical for emergency responders
• To be included when a new or updated plan is submitted

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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)
50-Foot Rule Waiver

**Current**

• All containers holding ignitable and/or reactive waste must be located at least 50-feet from the property line.

**New**

• All containers holding ignitable and/or reactive waste must be located at least 50-feet from the property line.

• A waiver may be obtained from the fire marshal if the fire marshal believes sufficient precautions are in place.
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
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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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

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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

- **Disposal**
  - Not Empty
    - Waste determination and manage contents; or
    - Recycle or dispose of
  - RCRA Empty
    - 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

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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.
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>
<th>Tetrachloroethylene*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trichloroethylene*</td>
</tr>
<tr>
<td></td>
<td>Methylene chloride*</td>
</tr>
<tr>
<td></td>
<td>1,1,1-trichloroethane*</td>
</tr>
<tr>
<td></td>
<td>Carbon tetrachloride</td>
</tr>
<tr>
<td></td>
<td>Chlorinated fluorocarbons</td>
</tr>
</tbody>
</table>

*Designates toxic substances.*

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*Note: The table above lists specific large-scale degreasing operations that are considered toxic substances.*
## F002 Listed Wastes

### Degreasing Operations (T)

<table>
<thead>
<tr>
<th>Tetrachloroethylene*</th>
<th>1,1,2-trichloro-1,2,2-trifluoroethane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichloroethylene*</td>
<td>Ortho-dichlorobenzene</td>
</tr>
<tr>
<td>Methylene chloride*</td>
<td>Trichlorofluoromethane</td>
</tr>
<tr>
<td>1,1,1-trichloroethane*</td>
<td>1,1,2-trichloroethane</td>
</tr>
<tr>
<td>Chlorobenzene</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.

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## 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></td>
<td>N-butyl alcohol</td>
</tr>
<tr>
<td>Ethyl acetate</td>
<td></td>
<td>Cyclohexanone</td>
</tr>
<tr>
<td>Ethyl benzene</td>
<td></td>
<td>Methanol</td>
</tr>
<tr>
<td>Ethyl ether</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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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.
### F004 Listed Wastes

<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>

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### F005 Listed Wastes

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

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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 |
|------------------|---|
| 85% water  
15% tetrachloroethylene (PCE)  
(F001/F002)  
Used for small scale degreasing | **F002** |
| 95% Water  
5% PCE (F001/F002)  
Used for small scale degreasing | **Not listed** |
| 75% xylene (F003)  
15% toluene (F005)  
10% water  
Ignitable (D001) | **F003, F005**  
Also D001 |

---

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

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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
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

## Examples

| Example 1 | 85% toluene (Active)  
15% water |
|-----------|---------------------|
| Example 2 | 75% toluene (Active)  
15% water  
10% additives to improve the odor of the mixture |
| Example 3 | 50% toluene (Active)  
35% xylene (Active)  
15% water |
| Example 4 | Not listed |

## U220

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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* (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.
Case Study

• KDHE is authorized by EPA for the RCRA program which includes enforcement.

• Authorized for administrative/civil actions and penalties.

• EPA retains authority for criminal investigation, action, and penalties in addition to civil actions.

• This case study is meant to show this interaction.
Case Study

• An individual purchased a box van loaded with urethane flooring materials, paints, and other chemicals.

• The van was towed to his residence. He later claimed dark fumes and an odor had begun to fill the van.
Case Study

• He contacted the sheriff who told him to take it back to the seller or contact EPA.

• Instead, the van was hauled to a rural property and he began unloading the containers onto the ground near a pond.

• Before he could finish, the contents caught fire which resulted in a large plume of dark smoke visible for up to five miles.

• County sheriff was dispatched to the location and called in the local fire department.
Case Study

• Emergency crews arrived on site and extinguished the fire. No one was present when they arrived.

• Video footage emerged later showing individuals entering site with gas can and leaving site shortly before fire was noticed.
Case Study

• KDHE received a call shortly thereafter informing us of an illegal dump site which had been burned.

• KDHE personnel arrived on site and observed a van and containers of varying size and contents both inside the van and on the ground.
Case Study

• The van was also observed to have been moved away from the pond and now on its side. The individual said he was attempting to salvage the engine with a bulldozer.

• Instructions were left to not disturb the scene any further without approval from KDHE.
Case Study

• KDHE met with seller who showed us the type of chemicals he still had in storage that would have been in the van, giving us an idea of what hazardous items may exist at the disposal area and if a reactive autoignition was possible.

• A few days later, the van was gone.
Case Study

• Video footage later showed the van had been transported off the property by the individuals. It was found at a salvage yard across state lines.

• At this point, KDHE turned over the investigation to EPA.
  • Appeared to be willful intent to hide/destroy evidence
  • Activity crossed state lines
Case Study

• EPA began investigating, beginning with sampling of residues left at the disposal area and containers on site.

• Eventually, materials were removed from the site.
Case Study

• EPA took criminal enforcement on individual for illegally transporting and disposing of hazardous waste. Still unclear if fire was intentionally set.

• Plead guilty to one count of unlawful disposal of hazardous waste and admitted to knowingly buying a vehicle loaded with hazardous waste.

• Sentenced to 18 months in prison. Cost of cleanup was more than $19,000.
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).
Waste Determination

“Kansas Waste Determination” App

Developed through a partnership between KDHE, BWM and SBEAP

Available on both Android and Apple app stores. Coming soon 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.
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Contact Information

• BWM web site: 
  http://www.kdheks.gov/waste

• Ken Powell
  785-296-1121
  ken.powell@ks.gov

• Brian Burbeck
  785-296-1613
  brian.burbeck@ks.gov
Thank you/Questions

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