

Hazardous Waste Management

Hazardous Waste Determination

Information presented in this fact sheet is intended to provide a general understanding of the regulatory requirements governing the management of hazardous waste. This information is not intended to replace, limit, or expand upon the complete regulatory requirements found in Division 14 of the Alabama Department of Environmental Management Administrative Code.

The Alabama Department of Environmental Management (ADEM) regulations require waste generators to determine if their waste is hazardous waste and to ensure that the waste is managed properly based on that determination. This fact sheet is designed to assist you, the waste generator, in properly identifying all wastes that you generate. Please refer to ADEM Admin. Code Chapter 335-14-2 for a complete description of the waste determination requirements.

Even though waste management companies may offer to perform or assist you with your hazardous waste determination, the waste generator has the ultimate responsibility for any mismanagement of their hazardous waste. Failure to make a proper waste determination can result in mismanagement of your waste, possibly leading to damage to human health or the environment.

Four Steps to Performing a Waste Determination

STEP 1: Determine whether the material is excluded from the definition of solid waste

For any material to be a hazardous waste, it must first be a solid waste. Certain materials, such as domestic sewage and industrial wastewater discharges, are specifically excluded from the definition of solid waste. These exclusions from the definition of solid waste are found at ADEM Admin. Code r. 335-14-2-.01(4)(a). Proceed to Step 2 if it is determined that the material is not somehow excluded from regulation as a solid waste.

Note

Materials excluded from regulation under ADEM Admin. Code Division 14 (Hazardous Waste Program) may still be regulated under ADEM Admin. Code Division 13 (Solid Waste Program).

STEP 2: Determine whether the material is a solid waste

The phrase "solid waste" can be misleading. In the context of hazardous waste regulations, the word "solid" does not refer to the physical state of the waste. Solid waste can be a solid, liquid, semi-solid, or contained gas. According to the Alabama Hazardous Wastes Management and Minimization Act (AHWMMA) and associated regulations, a solid waste is a material that will no longer be used for its original intended purpose and will be discarded; or is a material that must be reclaimed, or processed, before being reused. For a complete definition of solid waste, refer to ADEM Admin. Code r. 335-14-2-.01(2). Since a material must first be a solid waste in order to be a hazardous waste, proceed to Step 3 if it is determined that the material is a solid waste.

STEP 3: Determine whether the waste is excluded from the definition of hazardous waste

Certain solid wastes, such as household waste and wastes associated with the exploration, development, or production of crude oil, are specifically excluded from the definition of hazardous waste. These exclusions from the definition of hazardous waste are found at ADEM Admin. Code r. 335-14-2-.01(4)(b). Proceed to Step 4 if it is determined that the material is not somehow excluded from regulation as a hazardous waste.

STEP 4: Determine whether the waste is a hazardous waste

According to the AHWMMA and associated regulations, a hazardous waste is a solid waste which may 1) cause or significantly contribute to an increase in mortality or serious irreversible, or incapacitating reversible, illness; or 2) pose a substantial present or potential hazard when improperly treated, stored, transported, or disposed. For a complete definition of hazardous waste, refer to ADEM Admin. Code r. 335-14-2-.01(3). There are two ways in which your waste can be considered hazardous waste:

- 1. The waste is a Listed Waste.** In this case, the waste meets one or more of the hazardous waste listing descriptions found at ADEM Admin. Code r. 335-14-2-.04:
 - **Hazardous wastes from non-specific sources** (F-listed wastes), found at ADEM Admin. Code r. 335-14-2-.04(2), include items such as spent chlorinated solvents (e.g., trichloroethylene) and plating solutions (e.g., cyanide plating bath).
 - **Hazardous wastes from specific sources** (K-listed wastes), found at ADEM Admin. Code r. 335-14-2-.04(3), include items such as some still bottoms (e.g., aniline production) and some pollution control dusts (e.g., lead smelting).
 - **Commercial chemical products, off-spec species, and container & spill residues** (P- and U-listed wastes), found at ADEM Admin. Code r. 335-14-2-.04(4), include items such as carbon disulfide and formaldehyde.

2. The waste is a Characteristic Waste. In this case, the waste exhibits one or more of the four characteristics of hazardous waste found at ADEM Admin. Code r. 335-14-2-.03:

- **Ignitable wastes** (D001), found at ADEM Admin. Code r. 335-14-2-.03(2), are liquid wastes with a flash point less than 140°F; solid wastes that ignite spontaneously and burn vigorously; or ignitable compressed gases or oxidizers as defined by USDOT (e.g., solvents, paints).
- **Corrosive wastes** (D002), found at ADEM Admin. Code r. 335-14-2-.03(3), are acids with a pH of 2 or less; caustics with a pH of 12.5 or more; or liquids that corrode steel at a rate greater than ¼ inch per year (e.g., strippers, cleaners).
- **Reactive wastes** (D003), found at ADEM Admin. Code r. 335-14-2-.03(4), explode; react violently with water; form toxic gases when exposed to water; release significant quantities of cyanide- or sulfide-containing gases; or are otherwise unstable (e.g., explosives, reactive metals).
- **Toxic wastes** (D004 through D043), found at ADEM Admin. Code r. 335-14-2-.03(5), contain at least one of 40 specified constituents (e.g., lead, benzene, chlordane) that leach out of the waste at levels that are hazardous.

Note: Once you have determined the regulatory status (excluded from regulation, solid waste, or hazardous waste) of your waste, you should periodically re-evaluate that status to verify that it is still correct. You should document the initial determination, as well as any subsequent determinations, in accordance with ADEM Admin. Code r. 335-14-3-.04(1)(c).

Generator Knowledge vs. Waste Sampling and Analysis

ADEM Admin. Code r. 335-14-3-.01(2) allows the use of "generator knowledge" in the hazardous waste determination process. Generator knowledge, or process knowledge, may consist of information about the waste obtained from existing published waste analysis data or studies conducted on the hazardous waste generated by processes identical or similar to those utilized in your operation. In general, identification of listed wastes can be accomplished by comparing the specific process that generated the waste to those processes described in the lists found at ADEM Admin. Code r. 335-14-2-.04.

Documentation used to support generator knowledge may include, but is not limited to, material safety data sheets (MSDS) or similar documents and/or a thorough process description, including data on all raw materials used. You must maintain detailed documentation that clearly demonstrates the information used to identify the waste.

Note

Manufacturers and suppliers are only required to list constituents on an MSDS that comprise 1% or more of the material. This level of information may not be adequate to determine the constituent levels in the wastes to be characterized. For this reason, an MSDS should merely be viewed as a supporting document and not the sole means of documenting generator knowledge.

When determining whether a waste exhibits one of the characteristics found at ADEM Admin. Code r. 335-14-2-.03, sampling and analysis may be necessary. Sampling and analysis of the waste is more accurate and defensible than the other option of generator knowledge. Procedures and equipment for obtaining and analyzing samples are described in the Environmental Protection Agency (EPA) publication SW-846, entitled *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*.

It is recommended that you prepare a sampling and analysis plan before collecting and testing waste samples. Again, EPA's SW-846 (Chapters 1 and 9) is a good source of information regarding sampling and analysis. A "representative sample" is a sample of a universe that can be expected to exhibit the average properties of the universe. A representative sample is required to properly characterize a waste stream using sampling and analysis. Chapter 9 of EPA's SW-846 contains information regarding methods for statistical determination of a valid number of samples, recommended sampling methods, sampling strategies, and applicable sampling equipment.

In making your hazardous waste determination, be sure to include all applicable hazardous waste numbers (whether it is a listed hazardous waste, characteristic hazardous waste, or a combination of both). Documenting both the generator knowledge and analytical data is essential. All information used to make a hazardous waste determination must be maintained for at least three years after the waste is last sent for treatment, storage, or disposal.

For further information, contact:

- ✓ ADEM Ombudsman 800-533-ADEM (2336)
- ✓ Hazardous Waste Compliance Inspectors 334-271-7730
- ✓ Outreach Branch (to order regulations) 334-271-7718

- ✓ ADEM Administrative Code Division 14 <http://www.adem.alabama.gov/Regulations/regulations.htm>
- ✓ ADEM Guidance <http://www.adem.alabama.gov/LandDivision/Guidance/guidance.htm>
- ✓ SW-846 On-Line <http://www.epa.gov/epaoswer/hazwaste/test/main.htm>