

HAZARDOUS MATERIALS PROGRAM ENVIRONMENTAL FACT SHEET

Making a Hazardous Waste Determination

Some types of businesses are commonly known to generate hazardous waste (e.g., manufacturers, dry cleaners, auto body shops), but it may be less obvious for others. However, upon closer examination, even businesses like food product manufacturers, educational institutions, and retail stores may generate hazardous waste through grounds-keeping, painting, vehicle maintenance, and other activities. This fact sheet outlines the process for evaluating whether a waste is regulated as a hazardous waste under the Vermont Hazardous Waste Management Regulations (VHWMR).

Who is responsible for making a hazardous waste determination?

Any business, municipality, or other organization that generates a waste must determine if that waste is a hazardous waste. While all households that generate a waste are exempt from regulation as hazardous waste under the VHWMR, waste generated by a business operating out of a home is not.

What wastes need to be evaluated?

Before considering wastes, it is a good practice to evaluate all hazardous materials that are used in the production process. Does each hazardous material generate a waste? If any hazardous materials are used up in the production process, they would not be a constituent of wastes generated.

It is also a good idea to consider whether any materials that are not usable at one business can legitimately be used as is (i.e., without first being recycled, filtered, or otherwise processed in any way) by another. For example, under very specific conditions, distillation bottoms are used as feedstocks, and dust recovered from emissions scrubbers is returned to furnaces. In these scenarios, the bottoms and dust are not waste, and therefore they do not have to be evaluated.

All *waste* must be evaluated to determine if it is hazardous waste. Prior to making a waste determination, a good practice is to prepare an inventory of all wastes generated at your facility. In doing so, be sure to include:

- Process wastes, manufacturing by-products, and spent laboratory chemicals
- Maintenance wastes like oily sorbents, spent fluorescent lamps, and parts-washing solvent (even if the unit is maintained by another company)
- Outdated or otherwise unneeded chemicals or raw materials
- Spill clean-up materials, emission control residues, and boiler blow-down water

How is a hazardous waste determination made?

Step 1: Determine if the waste is exempt from regulation as a hazardous waste. Section 7-203 of the VHWMR includes exemptions for certain wastes so long as specific management conditions are met. Section 7-204 includes additional exemptions that are conditioned upon the waste being reused or recycled. Examples of exempt wastes include drained oil filters, lead-acid batteries, antifreeze, and

“universal wastes” (e.g., fluorescent lamps, cathode ray tubes, mercury-containing devices, post-consumer paints, aerosol cans). While not exempt from regulation as hazardous waste, used oil has specific management standards outlined in Subchapter 8 of the VHWMR.

Step 2: If a waste is not exempt, determine if it is a “listed” hazardous waste. There are five lists in the VHWMR, and all hazardous wastes are assigned either a “VT,” “F,” “K,” “P,” or “U” code followed by two or three numbers (e.g., F005, VT02, D018). In Vermont, “VT” and “F” wastes are the most common types of listed wastes.

- **Vermont-listed wastes** (see VHWMR Section 7-211). Vermont regulates eight specific wastes that are not regulated under the federal hazardous waste program. An example is oily waste that contains > 5% by weight petroleum distillates – assigned the VT02 code.
- **F-listed wastes** (see VHWMR Section 7-210) are wastes from non-specific sources. There are 28 such wastes. An example is spent non-halogenated solvent, like acetone – assigned the F003 code.
- **K-listed wastes** (see VHWMR Appendix I) are wastes from specific sources. An example is oven residue from the production of chrome oxide green pigments – assigned the K008 code. Like most K-listed wastes, it is rarely generated in Vermont.
- **P-listed wastes** (see VHWMR Appendix IV) are acutely hazardous wastes that have more protective standards. An example is sodium cyanide – assigned the P06 code.
- **U-listed wastes** (see VHWMR Appendix III) are specific discarded commercial chemical products or off-specification batches of commercial chemical products. An example is “methanol” that has never been used and is no longer needed – assigned the U154 code.

Step 3: If the waste is not listed, the generator must then determine if it exhibits any one of four hazardous waste “characteristics” (i.e., ignitability, corrosivity, reactivity, and/or toxicity). Wastes meeting the criteria for characteristic hazardous waste are assigned a code beginning with “D” followed by three numbers.

- **Ignitable waste** (see VHWMR section 7-205) is liquid with a flash point of less than $\sim 140^{\circ}$ F; or is not a liquid and is capable under standard temperature and pressure of causing fire and creating a burning hazard; or is an ignitable compressed gas. Ignitable waste is assigned the D001 waste code.
- **Corrosive waste** (see VHWMR section 7-206) is liquid with a pH < 2 or ≥ 12.5 ; examples are battery acid and caustic drain cleaner. Corrosive waste is assigned the D002 code. Note that corrosive solids are regulated under “Vermont-listed wastes” and are identified by the VT20 code.
- **Reactive waste** (see VHWMR section 7-207) may have any of the following properties: is normally unstable; reacts violently with water, forms a potentially explosive mixture with water or can generate toxic gases when in contact with water; or is capable of detonation. Examples are picric acid and dynamite (munitions). Reactive waste is assigned the D003 code.
- **Toxicity Characteristic wastes** (see VHWMR section 7-208) are wastes capable of leaching any one of 40 specific contaminants in excess of regulatory levels when tested in a laboratory using the Toxicity Characteristic Leaching Procedure (TCLP). Toxicity characteristic wastes are assigned the D004 through D043 codes. Each of the toxicity characteristic wastes has a concentration set in the regulations (e.g., the regulatory level for lead (D008) is 5.0 mg/L), and

when that concentration is met or exceeded in a waste, it is regulated as hazardous waste.

How does one determine if a waste meets a listing or exhibits a characteristic?

A generator can use their knowledge of the process that generates the waste, and/or they can have the waste tested by a laboratory. If a generator has reason to believe that their waste meets the criteria for a hazardous waste characteristic, they may choose to manage their waste as if it meets criteria for ignitability, corrosivity, reactivity, and/or toxicity, to remain compliant with the VHWMR. The approaches outlined below, however, will allow the generator to make a more informed determination.

How does one use “generator knowledge?”

In order for a generator to use generator knowledge, sufficient information regarding the process that generates the waste must be available for all materials used in the process or that otherwise contribute to the waste. Such information may be provided on labels or Safety Data Sheets. Be aware, however, that such information only represents raw materials and may not accurately represent what is in the *waste*. This is especially relevant when it comes to determining if the regulatory level for a toxicity characteristic constituent is exceeded.

In using generator knowledge in determining whether waste meets a hazardous waste listing or exhibits hazardous waste characteristics, generators must be able to demonstrate the basis for their claim. Generator knowledge may relate to:

- Waste origin, composition
- Production process, feedstocks
- By-products, intermediates
- Chemical or physical properties chemicals used
- Testing that illustrates properties of waste

What about analytical testing?

If sufficient information is not available to make a hazardous waste determination, it may be necessary to have a representative sample of the waste analyzed by a laboratory (your waste hauler may be able to help you with this). Since analytical testing can be expensive, it is important to provide the laboratory with as much information as possible about the waste. Providing the laboratory with details about the materials used and the production process may help narrow their focus for testing. For example, if you know that arsenic is the only potentially hazardous contaminant in a waste, there is no need to test for other contaminants. You must keep any test results for at least three years from the date the waste was last sent to a treatment, storage, or disposal facility.

How often must a hazardous waste determination be made?

An initial determination must be made on each waste. A waste must be re-characterized whenever a

change is made to the process that generates the waste.

Do I need to keep records of my waste determination?

It is important that generators maintain a record of their waste determination. Records should identify whether a waste is hazardous waste or not, and they should support the knowledge used in making the determination. If testing or sampling was conducted in the determination process, the results should be maintained as part of the record. Section 7-202 of the VHWMR requires all generators to maintain these records for at least three years after hazardous waste is sent offsite to a treatment, storage, or disposal facility (TSDF).

Where can I get help in making a hazardous waste determination?

Check the Safety Data Sheet (SDS) for all chemical products you use. Your chemical supplier and/or trade associations may be able to assist with questions about their products, although they often are not knowledgeable about hazardous waste regulations or the composition of your facility's waste. You may also contact the Vermont Hazardous Waste Program using the information below.

For more information regarding making a hazardous waste determination, or if you have other hazardous waste management questions, please contact:

Hazardous Materials Program – Hazardous Waste Section
Waste Management and Prevention Division
Vermont Department of Environmental Conservation
1 National Life Drive – Davis 1
Montpelier, VT 05620-3704
802-828-1138
<https://dec.vermont.gov/waste-management/hazardous>