



## INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

**Ignitable Solid Hazardous Waste**

Compliance &amp; Response Branch

Office of Land Quality

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The language at 40 CFR 261.21, as adopted by Indiana Hazardous Waste Rules at 329 IAC 3.1-6, defines the **characteristic of ignitability (D001)** as having any of four designated properties. Of these four properties, one pertains to *ignitable liquids* using a specific EPA-approved method for flash point, one pertains to *oxidizers* as defined in 49 CFR 173.115(a), and one pertains to *ignitable compressed gas* as defined in 49 CFR 173.127. The other property, **ignitable solids** is described as the following: ***“It is not a liquid and is capable, under standard temperature and pressure, of causing fire through friction, absorption of moisture or spontaneous chemical changes and, when ignited, burns so vigorously and persistently that it creates a hazard.”*** The purpose of this document is to assist generators in determining whether they have generated an **ignitable solid hazardous waste**.

As required by 40 CFR 262.11 and Indiana’s hazardous waste rules, the generator of a solid waste must conduct a proper hazardous waste determination ( see IDEM’s *Hazardous Waste Determination Guidance*, OLQ General ID#00056-01-HW). A waste determination involves identifying or verifying the chemical and physical characteristics of a waste by performing a detailed chemical and physical analysis of a representative sample of the waste or, in certain cases, by applying acceptable knowledge of the waste.

Once it has been determined that the material *is* a RCRA solid waste and not excluded from the definition or exempt from RCRA ( if excluded or exempt from RCRA, the facility must be able to document qualifications), it is the generator’s responsibility to determine if their waste is hazardous for the characteristic of ignitability as described in 40 CFR 261.21. In making this determination for a waste in the solid state, the generator should use knowledge of the process or materials used to produce the waste supplemented by appropriate tests, as necessary. In the June 13, 1997 Federal Register a procedure for determining ignitability of solids, SW-846 Method 1030 (dated December 1996), was adopted as an EPA-approved method. This method can assist in the determination but is not a required method.

Two criteria are necessary to determine if the waste is an ignitable solid. The generator must first determine that the waste is not a liquid *and* is capable of causing fire through friction, absorption of moisture or spontaneous chemical changes. If the waste meets these conditions, SW-846 Method 1030 is recommended to determine whether the waste “when ignited, burns so vigorously and persistently that it creates a hazard.” If the waste meets **both** criteria, it is a hazardous waste. If the waste contains both a solid and a liquid phase, IDEM recommends the generator separate the phases and test separately; liquids by flash point and solids by SW-846 Method 1030.

A generator may also use knowledge based on information obtained from the Department of Transportation (DOT) regulations codified at 49 CFR 173.124 which identify a universe of hazardous materials that may, upon becoming a waste in the solid phase, have those characteristics to qualify as an ignitable solid in the Hazardous Waste Rules. These DOT hazardous materials include the following

divisions:

- \* Division 4.2 (Spontaneously Combustible Materials) -- includes (1) pyrophoric materials and (2) self-heating materials;
- \* Division 4.3 (Dangerous When Wet Materials).

The Hazardous Materials Table found at 49 CFR 172.101 designates specific hazardous materials by descriptions and shipping names under the above hazard divisions. In a few cases, Division 4.1 (Flammable Solids which includes (1) specific wetted explosives, (2) self-reactive materials, and (3) readily combustible solids) waste materials may qualify as ignitable solids. It should be noted that the DOT Class 4 hazardous materials may not ignite through friction, absorption of moisture or spontaneous chemical changes. In those cases, the waste would not be an ignitable solid hazardous waste. In addition, the generator should consider that a DOT Division 4.3 material *may also* become a reactive characteristic waste (D003) as described in 40 CFR 261.23.

The generator should bear in mind, ignitable solid hazardous waste may have variable characteristics dependent on *external conditions* (i.e., temperature, pressure, humidity), the *chemical composition* of the substance, and the *physical composition* of the solid. "Standard temperature and pressure" in this definition refers to normal temperatures and pressures commonly encountered in waste management; not to any specific temperature and pressure.

In summary, the following questions should be asked when making an ***ignitable solid hazardous waste*** determination:

1. Based on knowledge of the waste, is the solid capable of causing fire through friction, absorption of moisture or spontaneous chemical changes under normal temperatures and pressures encountered in management of the waste?
  1. *If the answer is yes to the above question, does a representative sample of the waste test positive for SW-846 Method 1030, Ignitability of Solids? If yes, the waste is an ignitable solid hazardous waste (D001).*

If it is impractical to perform Method 1030 because of the physical form of the sample, generator knowledge should be used to determine the ignitability hazard posed by the material. Common examples of *potential* wastestreams would be paint booth filters and paint overspray.

Regarding *potential* spontaneous combustion materials/wastes, the generator should bear in mind handling and storage practices have a definite relationship to their tendency to ignite. Therefore, IDEM encourages practices to eliminate potential for ignitable components by methods such as modifications to processes, thorough wetting or air drying of materials (dependent on characteristics of the material), temperature and pressure controls (if applicable), or other measures protective of human health and the environment. Some of these methods may be considered treatment of hazardous waste. Treatment by generators is allowed in tanks or containers; however, generators that treat their characteristic hazardous waste to render it non-hazardous have special requirements under 40 CFR 268.9. These generators must submit a onetime notification/certification to IDEM and must develop and follow, as specified under 40 CFR 268.7, a waste analysis plan. Large quantity generators that treat waste on-site must also report this activity on their biennial report.

**If you need additional information, or have any questions or concerns, please contact staff of the Office of Land Quality, Compliance and Response Branch at 317-234-6923 or 1-800-451-6027.**