

# Managing Empty Containers

## Introduction

Whether you are dealing with nicotine gum wrappers, vials that once held pharmaceuticals, empty aerosol inhalers or bags of IV solutions, there are some things you need to consider before discarding any of these empty containers. Some empty containers are actually hazardous wastes because of the residues they contain and cannot be thrown in the trash. This fact sheet will help you evaluate the empty containers generated at your health care facility to determine if they are hazardous waste and ensure they are managed appropriately.

## What is a container?

A container is any portable device in which a material is stored, transported, treated, disposed of or otherwise handled. Before discarding a container, you must evaluate the material that was in it. If the container held a material that would be a solid waste when discarded, the container can be discarded as solid waste or recycled. If the container held a material that would be a hazardous waste when discarded, you need to consider the amount and type of residue left in the container to determine if the container is also a hazardous waste.

## When is a container empty?

Containers of materials classified as P-listed acute hazardous wastes are considered empty only after the

### What makes a waste hazardous?

Wastes can be hazardous because of their **characteristics (ignitability, corrosivity, reactivity and toxicity)** or because they are **specifically listed** as hazardous waste. Examples of characteristic hazardous wastes include thimerosal (mercury toxicity), strong acids or bases (corrosivity) and solvents (ignitability).

**Listed hazardous wastes** include spent materials (F- and K-listed wastes) and discarded commercial chemical products (U- and P-listed wastes). Examples of F-listed waste include certain spent solvents, like toluene (F005), xylene (F003) or carbon tetrachloride (F002). Examples of U- and P-listed wastes include unused nicotine gum or patches (P075), mitomycin C (U010) and arsenic trioxide (P012).

Learn more about hazardous waste in the DNR publication “Is Your Waste Hazardous?” at <http://dnr.wi.gov/files/pdf/pubs/wa/wa1152.pdf>

container has been triple-rinsed or the inner liner has been removed. The rinsate generated by triple rinsing the container must be disposed of as P-listed waste. Containers of P-listed wastes that are not triple-rinsed must be disposed of as hazardous waste.

If the material in the container is a characteristic hazardous waste or a non-acute F-, K-, or U- listed hazardous waste, the container is empty when:

- all waste that can be removed by normal means, such as by pumping, pouring or aspirating, has been removed; and,
- one of the following three conditions has been met:
  - no more than 1 inch of residue remains on the bottom of the container or liner; OR
  - no more than 3 percent material by weight remains inside a container or inner liner having a total capacity of 110 gallons or less; OR
  - no more than 0.3 percent material by weight remains inside a container or inner liner having a total capacity of over 110 gallons.

For large containers, such as 55 gallon drums of paint or solvent, the container is considered empty if less than 1 inch of residue remains on the bottom after emptying the container by normal means (pumping or pouring the material). Small containers, such as laboratory reagent bottles or drug vials, are considered empty if less than 3 percent by weight remains in the container after removing the material by normal means (pipetting or pouring).

## How should empty containers be managed?

Containers of hazardous waste that do not meet the definition of “empty” must be managed as hazardous waste. Containers that held hazardous waste and meet the definition of “empty” are exempt from hazardous waste regulation and can be disposed of as solid waste or recycled. Containers that held nonhazardous waste can be disposed of as solid waste or recycled. Check with your solid waste hauler to determine whether your empty

waste containers are acceptable and if there are other conditions you must meet. For example, the solid waste hauler may require you to provide certification that the containers are empty, remove all lids or caps, and remove or black out hazard and warning labels. You may be required to segregate certain containers, such as empty aerosols, to meet shipping requirements.

### **What can my facility do to reduce waste containers?**

To minimize the number of waste containers generated, consider how you'll have to manage the empty containers when you buy the products. Making wise purchasing choices up front can reduce the amount of waste you must manage. Can you purchase the material in containers that can be returned and refilled? Can the empty containers be reconditioned and reused? Can they be recycled? Without purchasing more than you need, can you buy the product in one large container rather than several small ones? Empty containers should be recycled or reused whenever possible.

### **What are the special considerations at health care facilities?**

Some containers are unique to the health care industry. Also, other regulations may apply to containers, even if they are empty. For example, empty nonhazardous chemotherapy containers are trace chemotherapy wastes and must be incinerated. Some empty containers may need to be managed as infectious waste. Some containers of P-listed acute hazardous wastes may be difficult to rinse because they include sharps, tubing, bags or other materials that pose a risk to the handler. If rinsing is difficult or unsafe, the entire container plus any contents or residue should be managed as a hazardous waste.

#### **Packaging**

Packaging such as wrappers, adhesive backing and foil that immediately enclosed pharmaceuticals that are acute hazardous wastes when disposed of are considered segments of a container that held the pharmaceutical. They are considered acute hazardous waste themselves unless triple-rinsed. An example of hazardous waste packaging is a wrapper from a nicotine patch or nicotine gum which is a P075 acute hazardous waste. Packaging that immediately enclosed non-acute hazardous wastes may be considered empty and exempt from hazardous waste regulation if the packaging meets the definition of empty.

#### **Intravenous (IV) bags and sealed tubing**

An administration set, consisting of an IV bag and its attached tubing, is considered a container rather than a dispensing instrument. When assessing whether an

administration set is empty, you must include any excess and residual liquids in the set, including the attached tubing. If the container is not completely empty, you must evaluate the contents to determine whether it is a listed or characteristic hazardous waste.

If tubing is designed to be removed from an administration set, it may be assessed separately from the IV bag once it is removed. If the administration set contains P-listed acute hazardous waste, the tubing is considered empty after it is flushed with saline at three times the volume of the tubing. Only the segment of tubing that is actually triple-rinsed with saline is considered empty. The rinsate generated during triple-rinsing must be disposed of as P-listed waste. Upstream tubing, attached IV bags, or other equipment that has not been triple-rinsed requires disposal as a P-listed hazardous waste.

IV bags and tubing, etc., that are completely empty and do not contain P-listed drug residues may be disposed of as solid waste (bags and tubing). Since administration sets commonly leak, place them in liquid tight containers.

#### **Excess and residual pharmaceutical in a used dispensing instrument**

Dispensing instruments include manual injection syringes (intravenous, oral, rectal), injection 'pens,' and ready-to-assemble syringes, including CarpuJect, StatDose and similar products. Drug residue remaining in a dispensing instrument after administering medication does not meet the definition of U- or P-listed hazardous waste since the drug has been used for its intended purpose and is no longer a commercial chemical product.

**Residual** pharmaceutical in a dispensing instrument is material remaining in the needle, hub, and adhering to the walls of the barrel after the plunger has been fully depressed. **Excess** pharmaceutical in a dispensing instrument is material remaining in the barrel of a syringe with the plunger not fully depressed. Evaluate the *excess* pharmaceutical in the dispensing instrument for hazardous waste characteristics and manage accordingly.

If a carpule or similar portion of a used dispensing instrument is separated before disposal, the carpule is considered to be used for its intended purpose. Evaluate carpules that contain **excess** pharmaceutical to determine if they contain characteristic hazardous waste.

#### **Surgical/wound prep applicators**

Many health care providers use combination reservoir/sponge applicators for surgical preparation and wound cleaning. These applicators consist of a reservoir, typically cylindrical, containing a liquid disinfection

agent attached to an absorbent material. Many of the liquid disinfection agents used in these applicators are alcohol-based and ignitable hazardous wastes at disposal. If the agent is ignitable, manage the entire applicator as a hazardous waste, unless the applicator meets the definition of “empty.”

### **Aerosol inhalers**

Aerosol inhalers are empty when they approach atmospheric pressure. Some empty inhalers can be recycled. Otherwise, manage as a solid waste.

Evaluate non-empty inhalers to determine whether they are hazardous and manage accordingly; or manage as a hazardous waste without evaluation. The inhaler may be a U- or P-listed hazardous waste or a characteristic hazardous waste. Most aerosol inhalers use an ignitable propellant and will therefore be an ignitable hazardous waste if they are not empty at disposal.

### **Compressed gas cylinders**

Compressed gas cylinders are empty when the pressure approaches atmospheric pressure. Contact the supply company to determine if the gas cylinders can be returned for credit and reuse.

If the compressed gas cylinder is not empty, contact the supply company and find out if it will take back the cylinder. If not, evaluate the contents to determine if they are a hazardous waste and manage appropriately.

### **Pesticide containers**

If the pesticide contains a P-listed acute hazardous waste, the containers must be tripled rinsed prior to disposal or salvage. The rinsate can usually be applied in a similar

manner to the pesticide. Empty pesticide containers are subject to Wisconsin Department of Agriculture, Trade and Consumer Protection (DATCP) regulations. DATCP requires pesticide containers to be disposed of according to label directions and in a manner that will not harm human health or the environment.

For more information on DATCP’s requirements, see s. ATCP 29.47, Wis. Adm. Code, at: <http://www.legis.state.wi.us/rsb/code.htm>. Some manufacturers have designed new containers that reduce waste, such as dry pesticide containers designed to dissolve when the containers of pesticide are mixed with water. Check with your supplier to see what is available.

### **Who can I contact for more information?**

DNR waste management specialists are available to help you with your questions regarding the management of solid waste, hazardous waste and infectious waste. Go to <http://dnr.wi.gov/staffdir/newsearch/contactsearchext.aspx?exp=hazardous+waste+requirements> to find a waste management specialist in an office near you.

For information on how to manage other types of waste generated at your facility, visit the DNR “Managing Waste From Health Care Facilities” Web site at <http://dnr.wi.gov/topic/HealthWaste/Business.html>.



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