

CLEANING OUT BULK COMPOUNDING CHEMICALS FROM PHARMACIES: DEVELOPING PARTNERSHIPS WITH HOUSEHOLD HAZARDOUS WASTE PROGRAMS GUIDANCE

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Introduction

Pharmacies may have stores of unwanted chemicals that were once used in the on-site preparation of prescriptions. Known as “bulk compounding chemicals”, these often include coal tar, phenol, and sulfur powder. Most pharmacies rarely, if ever, do on-site compounding of pharmaceuticals anymore.

Bulk compounding chemicals are chemicals – not drugs. Once determined to be a waste rather than an inventory item, many of these are Resource Conservation Recovery Act (RCRA) hazardous wastes. Due to a lack of familiarity with how to dispose of these chemicals, as well as the difficulty and expense of disposing of small amounts of wastes (i.e., one or two gallons) on a one-time basis, pharmacies may store unwanted bulk compounding chemicals for many years.

Providing the opportunity to appropriately remove and manage these materials is a valuable service that household hazardous waste programs can offer to businesses in their communities.

The goal is to divert bulk compounding chemicals from the municipal solid waste stream by establishing a cost effective and convenient system for disposal as hazardous wastes.

The strategy is to create partnerships between existing household hazardous waste programs that accept materials from Conditionally Exempt Small Quantity Generators of hazardous waste.

The guidance in this document is based upon several pilot projects that successfully identified pharmacies with unwanted bulk compounding chemicals and demonstrated that their participation in local household hazardous waste collections is a cost-effective and convenient method of disposing of these materials responsibly.

This document does not address the disposal of unwanted medications.

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As easy as 1-2-3

1. The Opportunity

There is nothing special about bulk compounding chemicals – they are liquid and solid hazardous wastes that have been in storage because they are no longer effective or useful.

Whether your community hosts one-day household hazardous waste (HHW) events or sponsors an ongoing HHW collection program, you should be able to accept materials from Conditionally Exempt Small Quantity Generators (CESQG's)¹, and maybe you already do. If you have never worked with small businesses at your collection events, be sure to review the guidelines with your hazardous waste contractor and your State's governmental environmental agency first.

Collaborating with a HHW collection offers a special cost-saving opportunity to the pharmacy. By delivering the bulk compounding chemicals to a HHW collection, the pharmacy avoids the transportation fees associated with a scheduled pick-up by a hazardous waste hauler. This is often a prohibitive cost for small volumes of chemicals.

2. Identifying the Need

An individual phone contact with each pharmacy in your community is necessary to identify the need for bulk compounding chemical disposal services. The phone book or an on-line web search will identify all of the pharmacies in your service area. In addition to stand-alone independent and chain stores, pharmacies are often located in grocery and discount department stores.

You will need to speak with the head pharmacist at each pharmacy. A sample script for this initial contact follows.

Sample Script

Hello. This is _____, from _____. The town/city of _____ is going to be holding a hazardous waste collection on [date] and is offering pharmacies the opportunity to dispose of unwanted bulk compounding chemicals. Would you be interested in getting more information about this? Does your pharmacy have any bulk compounding chemicals in storage?

If the pharmacist is interested in pursuing the discussion it is worth highlighting the cost saving opportunity and the simplicity of the disposal opportunity that the HHW collection event offers.

¹ Generating less than 100 kilograms per month of hazardous wastes.

There are several key pieces of information that you will need to secure from the pharmacy, as well as information to provide to the pharmacy before a commitment is made to bring the chemicals for disposal.

You should point out that they are under no obligation to participate, and that this is a friendly, relatively non-regulatory process.

Only after the pharmacy has received a firm price quote will it be asked to make a decision whether to participate.

3. The Process

Costs

The pharmacy will pay the full cost of disposal. It is useful to explain that bringing the chemicals to a local HHW collection offers the pharmacy a cost savings because there will be no transportation or other overhead expenses imposed by the HHW contractor. Only the actual disposal costs will be charged. As an example, the cost of disposal for all of the chemicals listed in figure 1, below, was \$190.

Inventory of Chemicals

In order to receive a price quote, the pharmacy will need to provide a complete inventory of what it wants to dispose of (type and size of container, chemical name, etc.). A simple sample inventory appears below, figure 1.

Explain to the pharmacy that this inventory will be provided to the hazardous waste contractor, and the price quote will be based on the nature and quantity of the wastes listed.

Key Information for the Pharmacy Once it Decides to Participate

If the pharmacy decides to participate, it needs to know:

- The date, location, and time to deliver the chemicals,
- The amount of the check and to whom it should be made out,
- Details about inventorying, packing, and handling the chemicals for transport, and
- Contact information for someone who can answer their questions prior to the collection.

The pharmacy will need to transport the chemicals to the HHW collection site on the day of the event. Generally, the task of delivering the waste can be accomplished in less than 15 minutes – especially if an appointment has been scheduled with the HHW contractor or event organizer.

Packing for Transport to the Collection

It is important in bringing the bulk compounding chemicals to the collection site that there is no leakage or spillage. The chemicals must remain in their original containers with the labels legible. When packing the chemicals for transport, check for tight-fitting caps and lids, and make sure that nothing is leaking. If a container is leaking, place it inside of another container that can be secured. Do *not* pour it into another container or consolidate chemicals.

Figure 1: Sample bulk compounding chemical inventory

Chemical	Amount	Note
Acetyl salicylic acid powder	8 oz	
Aluminum chloride powder	16 oz	
Ammoniated mercury powder	2 oz	
Ammonium chloride powder	500 grams	
Ammonium chloride powder	8 oz	
Bismuth subcarbonate	12 oz	
Bismuth subnitrate	8 oz	
Boric acid powder	2 oz	
Calamine powder	8 oz	
Calcium phosphate powder	8 oz	
Camphor crystals	2 oz	
Chloroform liquid	14 oz	
Citric acid	16 oz	
Citronella oil	4 oz	
Coal tar liquid	16 oz	
Ethyl ether	¼ pound	Sealed tin
Eucalyptus oil	4 oz	
Flexible colloidian	4 oz	Sealed glass jar
Gentian violet powder	1 oz	
Glacial acetic acid	700 ml	
Hydrochloric acid diluted	473 ml	
Iodine crystals	4 oz	
Magnesium subcarbonate	8 oz	
Methylsalicylate	16 oz	
Peruvian balsam	4 oz	
Phenacetin powder	8 oz	
Phenol liquid	946 ml	
Podphyllium resin	1 oz	
Potassium citrate powder	16 oz	
Potassium iodide powder	8 oz	
Precipitated sulfur	16 oz	
Propylene glycol	20 oz	
Tannic acid powder	4 oz	
Tincture of arnica	2 oz	
Turpentine oil	473 ml	
Wintergreen oil	4 oz	

A more detailed sample inventory form is found in Appendix A.

Another purpose for the inventory is to ensure that none of the chemicals require special handling. For example, in rare instances, picric acid may be among the bulk compounding chemicals. Because picric acid may become unstable over time, special disposal precautions will be needed. These may include in-pharmacy collection or destruction of the acid by the bomb squad.

Controlled Substances

Ask the pharmacist if any of the bulk compounding chemicals are controlled substances. These may not be brought to the HHW event, nor handled by the hazardous waste contractor. If there are controlled substances, they should be removed from the inventory and the reverse distributor with whom the pharmacy works should be contacted to make disposal arrangements.

At the Collection

The pharmacy will deliver the materials and a check for disposal to the HHW contractor (or agency operating the collection), and will receive a receipt that should be retained for three years. At the collection site, the HHW contractor will compare what is delivered against the inventory that had been previously submitted.

In summary, the pharmacy will:

1. Provide a complete inventory in advance of the collection (typically one week) of what they have (type and size of container, chemical, etc.). A cost for disposal will then be provided to the pharmacy.
2. Make a decision whether to participate. The decision may be based on:
 - A firm price quote for the disposal cost.
 - Permission from someone else (pharmacy manager or financial officer) to spend the money.
 - The ability to deliver materials to the collection site at the right date and time (this may be especially important for chain pharmacies).

The hazardous waste contractor (or agency conducting the collection) will:

1. Provide a written price quote based on the inventory.
2. Provide instructions about payment, packaging, and transportation.
3. Determine a delivery time (e.g., before the residential collection event begins).
4. Provide a receipt to the pharmacy.

Conclusion

Unwanted bulk compounding chemicals are just like any other hazardous waste generated by small businesses. Reaching out to pharmacies provides the opportunity, with minimum effort and cost, to dispose of these chemicals and to ensure that public health and safety are protected.

**Appendix A
Sample Hazardous Waste Inventory Form**

Complete this form (use additional copies as necessary). Return to Household Hazardous Waste Coordinator no later than DATE

**Mail to: ADDRESS _____
Email _____, or Fax _____
Call _____ if you have questions.**

Business Name _____
Daytime Phone _____
Contact _____
Email Address _____
Fax Number _____
Complete Mailing Address _____

In order to participate we need to have an advance listing of what you are bringing to the collection. Use one line per item. Please complete as follows: 1) Label Information...use common product name (e.g., oil-based paint) OR trade name OR primary active ingredient(s) OR "unknown" if label is unreadable or missing; 2) Physical... identify as solid or liquid; 3) Original container...indicate yes or no; 4) Condition of container... describe as good, fair or poor; 5) Size & type of container...estimate capacity of container in pounds or gallons; describe container as a drum, bag, jar, etc.; 6) Remaining...assess as full, ¾ full, ½ full, or ¼ full.

Label Information	Physical	Original Container	Condition	Size & Type	Remaining