

Household Hazardous Waste Handling Procedures to Prevent Environmental Contamination



F-7463

Household hazardous products in trash may contribute contaminants to community landfills. This fact sheet serves as a guide for proper handling and disposal of various types of potentially dangerous household chemical wastes.

What Are Household Hazardous Wastes (HHW)?

Potentially, many products found in a kitchen, bathroom, garage, or utility shed are household hazardous waste substances. Because of their chemical nature, they are often poisonous and can corrode metals, explode, or burst into flames when handled improperly. Motor oil, paints, pesticides, antifreeze, wood preservatives, batteries, cosmetics, and some household cleaners are examples of products that may contain solvents, petroleum products, heavy metals, or other toxic chemicals. When these products are placed into the trash or poured down the drain, they contaminate the environment. HHW can often be identified by using common sense and by looking at labels for signal words. If the words “danger” or “warning” appear on the labels, the contents are likely HHW. “Caution” may indicate hazardous material in sufficient amounts. Large quantities of products with the signal word “caution” may cause environmental harm when disposed of improperly.

What Is the Magnitude of HHW?

In central Oklahoma alone, there are 240,000 homes which dispose of more than 2 million pounds of HHW each year. Table 1 outlines a typical city and its HHW potential. The average home has up to 10 gallons of HHW, and 3.2 percent of all household waste is HHW.

Why Be Concerned?

HHW presents serious problems for everyone associated with municipalities, including city managers, employees, and residents. The majority of HHW ends up in landfill areas or in the sanitary sewer system. The magnitude of HHW should not be underestimated. The average household may have up to 16 pounds of HHW in storage. These wastes represent significant liability for garbage handlers.

What Are the Major HHW Disposal Concerns?

- **Surface and Ground Water.** Up to 20 percent of HHW may be disposed of into the sewer system—a direct conduit to surface water systems. The magnitude of this disposal causes a serious hazardous waste situation because chemicals and toxins from HHW may leach to surface and ground water.

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Table 1. Disposal practices for specific HHW by residents of the City of Albuquerque based on survey results, 1987.^a

Waste Types	Disposal Method				Percent of Total
	Landfill	Sewer System	On/Off Site ^b	Recycled	
Antifreeze	90,520	58,250	158,140		19.2
Cleaners	4,680	1,040			0.4
Drain Openers	520	520	520		0.1
Fertilizers	7,800	520	0.5		
Motor Oil	502,520	33,290	359,980	161,260	66.1
Paints	162,300	4,160	2,080		1.4
Pesticides	21,330	650	1,040	1.4	
Solvents	11,970	520	12,480		1.6

^a Source: Journal WPCF 59: 120-124, 1987.

^b On/Off Site indicates disposal on the premises or adjacent premises.

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- **Safety of Sanitation Workers.** More than two percent of all garbage collectors are injured by chemical burns, explosions, etc. each year from HHW in trash. Certain unlikely combinations of HHW can be dangerous; for example, soft drinks mixed with swimming pool dry chlorine can ignite. Additionally, articles such as hypodermic needles that could puncture skin should be placed in puncture-resistant containers.
- **Sewer and Septic Systems.** When oils, solvents, and other HHW are poured into the sanitary sewer systems, the waste water treatment systems may be slowed and expensive modifications made necessary. Additionally, individual septic tank systems can be contaminated, causing the septic system not to work well.
- **Landfills.** Potential liability to a city with a landfill which collects significant amounts of HHW may be important if one day the landfill becomes a hazardous waste clean-up site.
- **Households.** Additional concerns relate to the accumulation of HHW in households. Many of these materials are dangerous, especially to children, and are a serious health hazard in homes. Some residents may have a particular problem because they do not have access to solid waste collection; however, the following guidelines direct residents to refrain from burning or burying HHW. To aid rural residents, some areas across the country have implemented a rural HHW collection system.

Solutions to the HHW Problem

It is almost impossible to prepare guidelines to cover all possible waste disposal problems associated with the disposal of chemical waste materials. This fact sheet attempts to cover the most common areas where problems occur. It also includes information about which practices to use (or not to use) to make chemical handling safer for everyone.

General Guidelines for Household Hazardous Wastes

Whenever they are available, follow label directions for proper use, storage, handling, and disposal. These give the best results and minimize hazards associated with the product. Labels usually include helpful directions and precaution statements. However, sometimes directions for storage and disposal may be unclear. The explanations in this fact sheet can be used as a guide when labels do not answer all the questions you may have about HHW.

Before You Buy

Ask yourself the following questions:

- Do I really need this product?
- Does it contain an ingredient that is hazardous to people or pets?
- Could I use a less hazardous substance?
- Am I keeping too many different chemicals in my home?
- Will I be able to properly dispose of this product and its packaging?
- Can I store this product safely in my home?
- Am I buying only as much as I will use?

Read the label.

- Read all precautionary statements and warnings.
- Buy the product only for its intended use. The label specifies proper applications of each product.

Storage

- Keep the label directions and lists of contents for future use of the product and for reference in case accidental poisoning occurs.
- Protect the label. Store substances in their original containers and make sure the labels stay with the containers.
- Follow the label directions for storage.
- A cool, dry place is usually suitable for storage—keep substances away from gas furnaces and hot water heaters.
- Do not allow chemicals to spill or mix.
- Keep all chemicals and other HHW in a locked cabinet and out of reach of children and pets.
- Never store hazardous products in food or beverage containers.
- Do not allow liquid hazardous materials to freeze.
- Never store hazardous products in the same area where food is kept.

Use and Handling

- Read the label carefully and thoroughly for directions and precautions before using any household chemical.
- Use the product only in the manner directed by the manufacturer on the label.
- Use common sense to avoid creating hazards.
- Use all hazardous products with adequate ventilation.
- Avoid splashing products in eyes and on skin or breathing fumes.
- Do not overuse a product.
- Do not mix different chemicals together for use; explosive or poisonous chemical reactions may occur.

Disposal

Existing federal regulations for disposal of hazardous waste exempts household products from many requirements. However, household wastes containing hazardous substances should be disposed of properly to minimize threats to human health and the environment.

Treated Wood and Wood Preservatives

Wood preservatives and treated wood should be regarded as containing pesticides. A wood preservative is a pesticide dissolved in a carrier solution to penetrate wood. Treated wood is simply wood that has had pesticides or other preservatives soaked through it.

- Use wood preservatives up when applying them; otherwise, hold them for a collection day.
- Follow disposal instructions for pesticide wastes for wood preservative solutions.
- **Do not** burn treated wood scraps. Wood treated with some commonly used wood preservatives produces highly toxic compounds when burned.
- Dispose of treated wood scraps with other household garbage.
- Conserve wood by using scraps for small projects.
- Use sawdust as compost.
- Take advantage of municipal compost facilities which can process treated wood.

Paint, Cleaners, and Solvent Waste

- Use up the material on the recommended site.
- Give leftover products to others who can use them **only** if they are in the original, labeled containers.
- Donate leftover paint to schools.
- Do not dump paint, cleaners, or solvent waste onto soil or down sewers, drains, or toilets.
- Let used turpentine, brush cleaners, or other cleaning solvents sit in a closed jar until the particles settle out. Then, strain and reuse the solvents.
- Discard used latex (water-based) paints with household garbage only if they are solidified. Solidify the paint by pouring half-inch layers in a cardboard box lined with plastic or newspaper or into a box filled with sand, vermiculite, or kitty litter.

Automotive Wastes

Motor Oil:

- Recycle used motor oil. Contact your county Extension office or the Department of Environmental Quality (DEQ) for the location of oil collection sites in your area.

- Do not dump waste oil on the driveway or the soil, into storm sewers, down the drain, or in the toilet.
- If you can't find an oil collection site in your community, call your local highway department or environmental organizations listed in the Yellow Pages.
- Hold oil for recycling conveniently by funneling it into a clean, plastic container with a lid.
- Check local gas stations or stores where oil is sold for places to dispose of used motor oil.

Transmission Fluid:

- **Never** mix transmission oil with motor oil for recycling. Transmission fluid can be recycled, but many recyclers will not accept transmission fluid.

Antifreeze:

- Many oil recycling centers also accept antifreeze, but do not mix it with oil.
- Do not pour used antifreeze on the ground or in a ditch. Antifreeze is very toxic to animals.
- Flush antifreeze down the toilet or sink with large amounts of water. If the toilet or sink is connected to a septic system, this should be done gradually over 24 hours to prevent "knocking out" a sewage system. The septic tank disposal method may be used for small quantities of antifreeze (about one gallon).

Gasoline:

- Handle gasoline with extreme caution. It is one of the most hazardous (flammable, combustible, and poisonous) substances found around the home.
- Use up quantities of uncontaminated gasoline in an automobile or other engine. It should not be used as a solvent (such as for cleaning tools). This procedure is very dangerous, and it contaminates the gasoline. It is difficult to dispose of contaminated gasoline.
- Contact your local fire marshal for information about contaminated gasoline. Because of the flammability, combustibility, and toxicity of gasoline, disposal recommendations must be tailored for individual situations.
- Some people suggest mixing diesel with herbicides for greater weed efficacy. However, this is not recommended and it is illegal unless diesel is listed as a carrier.

Batteries:

- Recycle automobile and household batteries. Contact a local battery shop (listed in the Yellow Pages under "Batteries," "Storage," "Retail," or "Recycle"). Try to buy household batteries that are rechargeable and/or buy

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mercury-free batteries. Some manufacturers are voluntarily providing mailers in the package that can be used to return the battery to them for recycling.

Summary

The welfare of humans and of the environment depends in part on proper management of society's wastes.

Proper management means more than just careful disposal. There are several options that should be considered in using household products. From the decision to purchase a product to consideration of disposal or recycling, every small effort makes a difference.

The options presented in this fact sheet require extra time and effort for the good of our health and our environment. Every citizen's wastefulness or misuse of a product adds to the pollution problem. Therefore, every effort toward proper use, disposal, and recycling of household products aids in the preservation and protection of a safe environment.

For additional information, contact:

- County Extension offices.
- County health department.
- Oklahoma Department of Environmental Quality (DEQ).
- Regional office of the Environmental Protection Agency (EPA).
- Local government officials.

What You Can Do

Reduce the amount of waste generated in your home.

- Be discriminating in the products you buy. If you don't need it, don't buy it.
- Be aware of the ingredients in a product. Read the label. If there is a choice, buy the product without a hazardous chemical.
- Give unused or leftover products to someone who can use them, but only if they're in the original labeled containers and only if precautionary statements are present.
- Recycle products when possible. Materials such as aluminum, glass, paper, and motor oil are recyclable.

Dispose of waste material in a safe and acceptable manner.

- Clean used empty containers before throwing them away. Throwing away clean, empty containers in the normal trash collection seldom poses a problem.
- Follow the specific instructions, given on the labels of some products, for wrapping or rinsing the container, or not allowing the container to be punctured or incinerated.
- Wrap glass bottles in paper in case they should break.
- Never pour leftover materials such as pesticides, used motor oil, or paint thinner down the drain or on the ground.
- Do not bury or burn containers of leftover materials.
- Never combine leftover hazardous products when disposing of them, to avoid any chemical reaction that may occur.
- If you aren't sure what's in a container, or if you have questions about how to dispose of it, call the EPA, county Extension office, DEQ, or county health department.
- Hold any material which you think may pose a disposal problem until your community's special collection days.
- Triple rinse empty pesticide containers and use spray rinse water on a labeled site. This consists of taking the empty container and filling it one-fifth full, aggressively shaking the product, and dumping it into the sprayer.
Repeat this three times.

Encourage community cooperation in managing waste materials.

- Arrange and support regular clean-up days in your community.
- Establish a hazardous waste education program in your community if none exists.
- Plan hazardous waste collection days in your community.
- Establish a community recycling program.

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