

Processing Hazardous Waste

Crusty jars of cleaners, unlabelled bottles of solvents, clogged spray cans of insecticides, and rusted cans of paint lurk in the basements and garages of many Canadian homes. It is easy to recycle or neutralize many of these substances at a hazardous waste collection depot. Let's follow a typical box of household waste as it is processed.

When hazardous waste arrives at a hazardous waste collection depot, it is first sorted into different classes of materials. The workers separate paints, oils, solvents, pesticides, batteries, and medicines, and so on.

The sorted materials are then packaged and shipped to a hazardous waste processing company. There, the hazardous materials are emptied from their original containers into large drums of similar materials. Different types of waste motor oils, for example, are mixed together into one large container. The oil is then shipped elsewhere for treatment and recycling. This process is so effective that almost all the motor oil sold in Ontario is recycled oil.

Almost 85% of the waste paint that you bring to the hazardous waste depot can be recycled. Hotz Environmental Services Inc. receives most of the waste paint in Ontario. At their recycling facility in Hamilton, Hotz sorts waste paint first into oil-based or latex paints. Each type of paint is then further sorted and blended into eight different colour groups. A master technician, affectionately known as the "brewmaster", controls the colour of each batch. Hotz then sells the paints to large institutional users such as Canadian and foreign governments.

Even single-use propane canisters can be recycled using a process developed by Hotz Environmental. First, they remove any remaining propane in the canister using a vacuum system. Propane recovered from discarded propane canisters can be used to heat the facility. Then they safely puncture, cut and recycle the empty propane canisters as scrap metal.

We obviously need to recycle or neutralize hazardous waste. The technologies required to perform these tasks are well developed and in place. Table 1 shows the recycling and disposal processes for various kinds of hazardous waste. Hazardous household wastes do not have to be an environmental threat. How many Ontario households routinely bring their hazardous waste to waste collection depots for disposal? Unfortunately, only about 10%. What can you do to make a difference?

Table 1 – Treatment of Hazardous Waste Products

Hazardous waste	Process
Solvents (e.g., paint thinner, adhesives, antifreeze)	<ul style="list-style-type: none"> Flammable solvents are burned as fuel in high-temperature kilns used to produce cement
Automobile lead acid batteries	<ul style="list-style-type: none"> Acids are neutralized. Plastic cases are recycled into new cases. Lead is refined and used to make new batteries
Propane barbeque tanks	<ul style="list-style-type: none"> Tanks are emptied and refurbished into new tanks or converted to scrap metal and recycled.
Pesticides	<ul style="list-style-type: none"> Substances are chemically treated to make them harmless.
Fluorescent lights	<ul style="list-style-type: none"> Toxic mercury in the lights is collected, purified, and reused.

Name - _____ Date - _____

Answers-

1. a
2. b
3. a
4. c
5. Sample – Hazardous waste is sorted when it arrives at the collection depot. Then it is sent to be processed at different locations, depending upon the type of material it is. Some of the waste is recycled. Toxic substances in the waste are neutralized. The end products of the processing of hazardous waste can be reused or safely disposed of.