

Management of Electronic Waste from Businesses

DHWM Guidance Document

Date: August 2004

What is the Purpose of this Guidance?

Computers, fax machines, copiers, cell phones, telephones and television sets are constantly updated. As your business takes advantage of new equipment, what do you do with your obsolete equipment?

Ohio EPA's [Division of Hazardous Waste Management](#)

(DHWM) encourages businesses to recycle electronic equipment no longer in use because it can contain hazardous materials. Donating equipment for reuse is the environmentally preferred alternative. Many schools, non-profit and charitable organizations accept working electronic goods. If equipment cannot be used, another good option is sending equipment to a reputable recycler. A recycler will disassemble equipment and recover useable components such as memory boards, disk drives, video cards and micro-processor chips. Plastic and glass components may be recycled into new products. Metals can be separated and sent to smelters where they are melted and used to make new products.



What is the Background for Development of this Guidance?

When your business recycles electronic equipment properly (including donating it for reuse), it is not a waste. Therefore, it is not regulated under Ohio's hazardous waste laws. However, if electronic equipment is not recycled, it must be evaluated to determine if it exhibits a characteristic of hazardous waste. Ohio administrative Code (OAC) rules [3745-51-20 through 3745-51-24](#) describe these characteristics. Electronic equipment may exhibit the characteristic of toxicity (OAC rule [3745-51-24](#)) for lead. Equipment that will be disposed that exhibits a characteristic must be managed according to Ohio's hazardous waste regulations.

Electronic Waste

Should I be Concerned about How my Electronic Equipment is Recycled?

Know how the recycling facility will use all the parts of the equipment. If it uses (or sells) any part of the electronic equipment as an ingredient in a product that is placed on the land or used as a substitute for a product which will be used on the land, the electronic equipment is a waste subject to regulation. Examples include using glass from computers as an ingredient in roads or in concrete structures.

In addition to being familiar with the manner in which electronics will be recycled, it is important to research the [recycling facility](#) to determine if it has any compliance problems. Proper recycling includes ensuring that the recycling facility processes electronic equipment in a timely manner. For example, to stay in compliance, a recycler must have processed 75 percent of the material present at the beginning of the year by the end of that year. This is stated in [OAC rule 3745-51-01\(C\)\(8\)](#). If electronic material is not recycled within this time period, then it is a waste. The facility is then subject to regulation as a hazardous waste facility. If electronic equipment is not recycled properly, and it is a hazardous waste, both your company and the recycling facility will be liable for clean-up costs associated with improper disposal of hazardous components.

How Does Ohio EPA Classify Electronic Waste?

Ohio EPA classifies used electronic equipment exhibiting a characteristic of hazardous waste as a characteristic by-product. Ohio EPA classifies unused electronic equipment (defective) as off-specification commercial chemical products. OAC rule [3745-51-02\(C\)\(3\)](#) states that characteristic by-products and off-specification commercial chemical products are not wastes when reclaimed. Therefore, if the recycler is recovering material of value from the equipment being recycled, it is not considered a waste.

If I do not Recycle my Electronic Waste, How do I Determine if it is a Hazardous Waste?

Electronic equipment may contain lead, chromium, cadmium, mercury or other hazardous metals. A company may have the knowledge of the waste and be able to determine if it contains metals at regulated levels. A laboratory may also conduct the Toxicity Characteristic Leaching Procedure (TCLP) analysis on the waste for a company to determine if the waste exhibits the characteristic of toxicity.



Electronic Waste

If you use the TCLP and an extract of the waste contains any of the following contaminants at a concentration equal to or greater than the listed value, then it is hazardous waste:

Arsenic	5.0 milligrams per liter (mg/l)
Barium	100.0 mg/l
Cadmium	1.0 mg/l
Chromium	5.0 mg/l
Lead	5.0 mg/l
Mercury	0.2 mg/l
Selenium	1.0 mg/l
Silver	5.0 mg/l

Does an Electronic Equipment Recycling Facility Need a Permit from Ohio EPA?

Ohio's hazardous waste rules do not require a [facility that recycles electronic equipment](#) to obtain a hazardous waste permit. However, the owner/operator of the facility must evaluate any waste generated from the recycling process and manage it accordingly. Ohio EPA's [Division of Air Pollution Control](#) may require the owner/operator to obtain an air permit for its recycling equipment. The [Division of Surface Water](#) or the publically-owned treatment works may require permits for waste water discharges. The [Division of Solid and Infectious Waste Management](#) may also require a transfer facility license.

For Additional Regulatory Information, Contact the Following Ohio EPA Divisions:

[Air](#)

(614) 644-2270

[Hazardous Waste](#)

(614) 644-2917

[Solid Waste](#)

(614) 644-2621

[Surface Water](#)

(614) 644-2001