What is e-waste?

Electronic waste (E-Waste) accounts for 70 percent of the overall toxic waste that you currently find in landfills. In addition to valuable metals like aluminum, electronics often contain hazardous materials like lead and mercury. When placed in a landfill, these materials (even in small doses) can contaminate soil as well as drinking water.

Electronic waste- or e-waste - is the term used to describe old, end-of-life electronic appliances such as computers, laptops, television sets, DVD players, mobile phones, mp3 players, etc., which have been disposed of by their original users. While there is no generally accepted definition of e-waste, in most cases, e-waste comprises of relatively expensive and essentially durable products used for data processing, telecommunications or entertainment in private households and businesses. Electrical and electronic equipment are made up of a multitude of components, some containing toxic substances which can have an adverse impact on human health and the environment if not handled properly. Often, these hazards arise due to the improper recycling and disposal processes used.

When disposed of carefully in a controlled environment...they do not pose any serious health or environmental risk.

However, breaking, recycling or disposing CRTs [monitors] in an uncontrolled environment without the necessary safety precautions can result in harmful side effects for the workers and release toxins into the soil, air and groundwater.

Landfilling e-waste, one of the most widely used methods of disposal, is prone to hazards because of leachate which often contains heavy water resources. Older landfill sites and uncontrolled dumps pose a much greater danger of releasing hazardous emissions.

Mercury, Cadmium and Lead are among the most toxic leachates. Mercury, for example, will leach when certain electronic devices such as circuit breakers are destroyed. Mercury is also contained in computer circuit boards which also include lead and cadmium.

Lead has been found to leach from broken lead-containing glass, such as the cone glass of cathode ray tubes from TVs and monitors.

Televisions

Back before there were plasma screen and liquid crystal display (LCD) tubes, we were all watching our Super Bowls and sitcoms on cathode ray tubes (CRT). The CRT model provided room for all your switches and wires in a box behind the screen, but it also stored a lot of lead. Approximately 20 percent of CRTs are comprised of lead, equivalent to between four and eight pounds per unit.

Combine this with the fact that the FCC is going to require all televisions to run a digital signal by February 19, 2009, and we could be looking at a lot of lead headed for landfills. Even the smallest amounts of lead can be a serious issue, and we're talking about eight pounds per unit.

Cellular Phones

While your trusty cellular phone may not contain as much toxic material as larger electronic devices, its shelf life is only about 18 months for the average consumer. With hip new products coming out all the time, it's estimated there are over 500 million used cell phones ready for disposal. Cell phone coatings are often made of lead, meaning that if these 500 million cell phones are disposed of in landfills it will result in 312,000 pounds of lead released. But possibly the most hazardous component of the cellular phone is the battery. Cell phone batteries were originally composed of nickel and cadmium (Ni-Cd batteries). Cadmium is linked as a human carcinogen that causes lung and liver damage. Alternatives contain the potentially explosive lithium, or the previously stated toxic material lead.

Computers

Besides the presence of lead in CRT computer monitors, there are other toxic elements in play when you're recycling that PC or Mac. Many laptops have a small fluorescent lamp in the screen that contains mercury, a toxic material when inhaled or digested. Mercury is also contained in computer circuit boards, which also include lead and cadmium. Circuit boards can also feature batteries made of mercury, as well as mercury switches.

In just 2005, almost two million tons of e-waste ended up in landfills. While toxic materials comprise only a small amount of this volume, it doesn't take much lead or mercury to contaminate an area's soil or water supply. Keep this in mind when you're figuring out what to do with those old electronic devices.