Hazardous Materials Found in E-Waste

Most people in the United States are now aware that disposing of electronic equipment by traditional methods—such as dumping in landfills—is harmful to the environment. It is intuitive to people that placing large items that will never completely break down in landfills is a wasteful use of land, but the reasons for special treatment of electronic waste go beyond that. Electronics contain hazardous materials that can harm the planet if placed untreated in landfills. Also, many electronic devices contain valuable materials that can be reused, thereby conserving natural resources.

One material that is hazardous is lead. Televisions and old CRT computer monitors contain varying amounts of lead. Due to its characteristics and ease of use, lead has been used since ancient times to make pottery, build ships, act as weights, and construct pipes. Lead has also been used in gasoline, batteries, paint, crystal, and insecticides. Lead, however, is also poisonous. As awareness of its side effects grew and the public began expressing concerns about its widespread use, in the 1970s the U.S. government began restricting its use. However, lead continues to be a leading environmental health risk for children in the U.S.

Toxic effects of lead on children are well documented. Research in the last few decades shows quite convincingly that there is a relationship between the amount of lead a child ingests and problems in thinking and learning. Furthermore, this sort of poisoning appears to be caused by what had been considered “safe” levels of lead exposure. Even very low levels of exposure to lead may cause significant damage to learning ability.

Cadmium is another toxic product found in electronic equipment, especially in the nickel and cadmium (Ni-Cd) batteries used in many portable electronic devices. In addition to causing lung and liver damage, cadmium is a human carcinogen. For example, occupational and environmental risk factors for renal cancer include exposure to cadmium.

Mercury is found in fluorescent lamps and computer circuit boards as well as many scientific instruments. Occupational exposure to mercury can result in a number of toxic effects on humans, such as personality disorders, insomnia, fatigue, tremors, and muscle spasms.

Using modern electronic waste processing methods, most electronic waste can be rendered harmless or reused.

Businesses must find a way to insure that unwanted electronics are disposed of in a way that will minimize toxins in the environment, and need to be sure to work with waste processing facilities that follow all applicable laws and regulations in order to maximize worker safety and minimize release of toxins.