

INTRODUCTION

In 1800, an Italian physicist, Count Alessandro Volta, created a “Voltaic Pile”, an electric energy storage device - - a battery. It consisted of a series of pairs of copper (or silver) and zinc plates with brine soaked cloth or cardboard separators. I wonder if he thought, “Now that I’ve got this thing , what am I going to do with it?” Would he be surprised at what would happen to his creation in 200 years or so? Could he EVER have thought that billions of the descendants of his creation would be produced and disposed of every year? A list of the applications of batteries ranges from the very small to the huge; from hearing aids and pace makers to submarines and space ships. Could he have anticipated their myriad uses? Could he have foreseen any problems?

PROBLEMS

Batteries contain materials that are hazardous including mercury, manganese, silver, cadmium, lead, lithium, nickel, and zinc. Putting batteries in the trash to go to a land fill unlicensed to handle hazardous materials or to be incinerated are not proper ways to dispose of household batteries. Incineration can release some hazardous materials directly into the air and others, collected in the ash, can go to a landfill where leaching can provide a route to the environment. Putting batteries in trash that goes directly to a non hazardous waste type of landfill allows the batteries to corrode and decay and their products leached into the environment. The leachates can end up in lakes, rivers, and streams. Release into the environment can also lead to bio-magnification, especially with mercury, lead, and cadmium. A food chain such as is depicted on the cover is well documented for mercury. The end recipients are **US!** So, dispose of your used batteries safely.

DON'T EAT YOUR BATTERIES

SAFE BATTERY DISPOSAL

How can you dispose of your old batteries in an environmentally safe manner? Below are several local routes to safe disposal,

Grosse Pointe Park:

Curbside recycling program will accept AAA, AA C, D's. Place in a clear plastic bag and put them in the recycling bin.

Wayne County and Detroit:

The places below will accept household batteries
Battery Solutions 38680 Michigan Ave,
Wayne, 734.467.9110
Detroit Recycling 1331 Holden Ave
Detroit, 313.876.0148
www.ci.detroit.mi.us/greaterresource/recycling.htm

Macomb County:

U. S. Post Offices in Macomb County have drop off containers for batteries in their lobbies.

Oakland County:

Only for residents of Berkley, Beverly Hills, Birmingham, Clawson, Ferndale, Huntington Woods, Hazel Park, Lathrup Village, Oak Park, Pleasant Ridge, Royal Oak, Royal Oak Township, and Troy..
Southern Oakland County Resource Recovery Authority (**SOCRRA**)
991 Coolidge Highway, Royal Oak
You must first make a appointment by calling 248.288.5153

In addition, many commercial chains will accept a reasonable numbers (8-10) of batteries at one time including: Home Depot, and Radio Shack. Look for disposal bins as you enter the stores.
It is best to check for changes before using a facility

THOUGHTS ABOUT THE FUTURE

What about the future? What does it hold for batteries, their disposal and recycling? Here are our guesses. If you have any further thoughts we would like to hear from you. You can send your thoughts to:

<http://www.secsurvey@detroitsection-acs.org>
Put the word battery in the subject heading.

Despite the availability of recycling and proper disposal, it appears that a significant number of household type batteries will still be disposed of in an environmentally unacceptable manner.

Battery producers must continue to find substitutes for and/or further reduce amounts of hazardous materials in their products as they have been doing since 1996.

As costs rise, it may become economically feasible to recover battery materials rather than simply dispose of them.

Buying rechargeable batteries whenever possible will cut down on the number of batteries going to disposal since they will last longer.

It would be helpful if manufacturers indicate that their batteries were environmentally friendly by putting a green dot or some other symbol on them.

Another possibility would be to treat batteries like some bottles and cans and use the deposit route to ensure proper recovery.

In the end, it is important that each of us care enough about the environment to dispose of batteries properly.

TYPES OF COMMON HOUSEHOLD BATTERIES

Types	Uses	Hazard
A, AA, AAA, C, D, 9 V	Toys, flashlights, radios TV remotes, razors, clocks	Mn, Zn, KOH
Ag, Zn, Hg, Button Batteries	Cameras, hearing aids, calculators, watches	Ag, Zn, Hg
Rechargeable NiCd	Smoke alarms, cordless tools, appliances	Ni, Cd
Rechargeable Lithium Ion	Smoke alarms, cordless tools, appliances	Li

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Learn more about the ACS at www.chemistry.org

THE DETROIT SECTION

The Section's main goal is to encourage advancement of chemistry in the broadest, most liberal manner. The goal includes the promotion of research in chemical science and industry, improving qualifications and usefulness of chemists, the increase and diffusion of chemical knowledge, and promotion of scientific interests and inquiry. Efforts to meet these goal are through meetings, professional contacts, reports, papers, discussions, and publications.

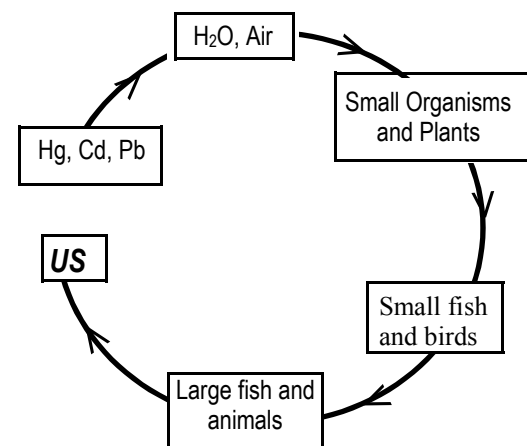
To learn more about the Section, visit www.detroitsection-ac.s.org



A Short Guide to Household Battery Disposal & Recycling

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B A T T E R I E S



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