



## **Guide to Proper Battery Disposal**

### **Introduction**

Although batteries are a convenient way of providing power for common everyday appliances, such as flashlights, cameras, and mobile phones, the improper disposal of batteries can lead to negative effects on the environment, and the lives of individuals. Batteries contain materials that are hazardous to the immune system, such as mercury, which can lead to health damage. It is also important that batteries are stored properly before they are used in order to prevent them from leaking. The objective of battery disposal is to provide a safe environment in which the harmful toxins from batteries are reduced, which in turn reduces the risk of various health hazards to humans, animals, and the environment.

### **Hazardous Materials in Batteries**

All batteries contain chemicals, which over time, are released from the battery. However some batteries are more harmful than others. Batteries that contain heavy metals such as Mercury, Cadmium, or Lead acid, are highly hazardous to human health and environmental safety. These batteries are the most dangerous to dispose of in that they contain chemicals which can severely damage the immune system. Less harmful batteries contain substances such as Carbon Zinc, Lithium, and Nickel Metal Hydride. Although they are less dangerous, they should still be properly contained and disposed of to prevent unnecessary health risks.

### **Improper Battery Disposal**

There are several ways batteries are commonly disposed of that are not safe. The following list consists of things not to do with batteries:

- Do not bury batteries  
Burying a battery exposes the battery to substances, such as groundwater which cause it to leak. The metals' that are released seep into the groundwater, which may in turn lead to water that is consumed by humans, either directly through drinking, or indirectly through the use of contaminated water in agriculture or bathing.
- Do not burn batteries  
Burning batteries produces highly toxic vapors that can be inhaled, leading to various respiratory illnesses. These toxins can be fatal. The burning of any inorganic material such as metals and plastics should be avoided under any circumstance.
- Do not store them with metal, or different types of batteries  
If the contacts of a battery come in contact with other metals, the battery will leak, exposing the harmful materials from inside the battery.
- Batteries should never come in contact with your mouth  
It is a common misconception that more energy can be released from a battery if the contacts are touched against your tongue. This will only cause battery acid to be released, and direct exposure to the battery acid can lead to serious health problems.

### **Proper Battery Disposal**

Batteries should be kept in a storage area, such as a heavy plastic container with a lid in a dry environment. Excessive exposure to heat and, or water causes the batteries to release their contents at an unsafe rate. The container should be kept clear from commonly used areas, as well as sources of water and food. The containment of the batteries will help to prevent damage to livestock, water supplies, agriculture, and food supplies, which in turn reduces the possibility of physical harm to the human's immune system.

## **Proper Battery Storage**

Batteries should be kept in a safe place not only after they are used, but before they are used. Unused batteries still contain the same chemicals as those of used batteries, and pose the same threat of contamination. If a battery comes into contact with another object, in particular other metals or objects that contain moisture, the possibility of that battery to leak acid is increased. Thus it is important to store batteries in a clean, dry enclosed area. To prevent further risks, batteries should be stored in similar groups. Mixing different types of unused batteries in a storage place before they are used increases the possibility of leakage and corrosion.

## **Alternatives to Batteries**

In situations where it is possible, the use of rechargeable batteries is preferred over that of non-rechargeable batteries. Reuse of batteries prevents the long term build up or release of toxins. However, at the end of their cycle, rechargeable batteries should still be disposed of properly. Solar power is a new alternative to batteries that reduces chemical waste, and can be found in everyday items such as flashlights.

In situations where batteries are the only option, batteries containing nontoxic metals such as Carbon Zinc, Lithium, and Nickel Metal Hydride should be used to reduce the amount of hazardous waste.

## **Conclusion**

The control of battery waste can drastically improve the amount of toxins any environment. Contaminated water is one of the most dangerous and frequent way toxins can enter the human body, as it can be used for drinking, bathing, washing, and in agriculture. The reduction of heavy metals in a water supply is the best way to prevent health damages caused by improperly disposed batteries. The reduction of air pollution caused by burning batteries and other hazardous metals and plastics also reduces health risks caused by batteries. Proper containment of batteries is a easy and simple way to prevent the risk of harmful toxins entering the human body.

## **Sources**

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