Universal Waste – Batteries Management

Managing Universal Waste Batteries

Batteries are found in every electronic device imaginable. All these batteries must eventually be disposed of, and some batteries are hazardous due to toxic contents or reactive properties. Many batteries must be managed as a Universal Waste (UW) at the end of their life cycle because of these hazardous characteristics.

The U.S. Environmental Protection Agency's (EPA's) Universal Waste Rule (40 CFR Part 273) provides a streamlined approach for facilities to collect and manage certain widely generated hazardous wastes. The rule was intended to facilitate environmentally sound collection and encourage proper recycling and treatment of these wastes. The Alaska Administrative Code (AAC) adopts by reference federal regulations for hazardous waste and UW.

This fact sheet summarizes UW regulations for batteries, Alaska/EPA's recommendations, and Eielson Air Force Base (EAFB) requirements for management of batteries.

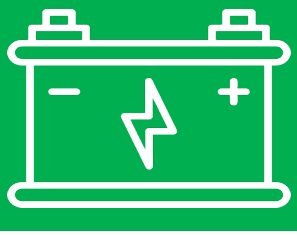
What is a Universal Waste Battery?

UW batteries are waste batteries that meet the definition of hazardous waste in the Hazardous Waste Rules. These can include nickel cadmium (Ni-Cd), nickel metal hydride (Ni-MH), and lithium ion (Li-ion) batteries, for example. Lead-acid batteries may not be considered UW, and can instead be managed under the requirements of 40 CFR part 266 Subpart G.

Primary batteries are non-rechargeable batteries. They include zinc carbon batteries, alkaline batteries, button cell batteries and lithium batteries. Secondary batteries are rechargeable batteries. They are optimal for devices that get regular use and are available as freestanding units or as built-in components of rechargeable devices. These batteries are more expensive, but often save money in the long run since they can be recharged many times. The most common types include Ni-Cd, sealed lead-acid, Ni-MH, and Li-ion.

Ni-Cd is a common type of rechargeable battery. A single nickel cadmium battery can replace about 150 alkaline batteries. Li-ion batteries are also common. They are more expensive, but extremely light and high in energy density. They are often used in cellular phones, laptop computers, and increasingly in cordless power tools. Waste alkaline and zinc carbon batteries are considered non-hazardous, whereas lithium, many button cell, and rechargeable batteries such as Ni-Cd, lead-acid, Ni-MH, and Li-ion are considered hazardous waste, and handled as UW.

Batteries currently contain one or more of the following eight metals: mercury, cadmium, lead, zinc, manganese, nickel, silver, and lithium. When a battery is disposed of in a solid waste landfill or incinerator, the battery can leach its toxic constituents and contaminate air, soil, surface water and groundwater. Mercury and cadmium pose a special threat in incinerators because they are volatilized by the incineration process. When incinerated, battery contents can be released to the environment as inhalable emissions or as leachable elements from the ash. This environmental release can result in possible exposure to humans and ecosystems.



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Who is Affected by the Universal Waste Rule?

Small and Large Quantity Generators (SQG and LQG) of hazardous waste are required to manage waste batteries under 40 CFR Part 273 or under 40 CFR Part 261. EAFB is designated an SQG and is required to manage UW batteries in accordance with federal regulations. Facilities that generate less than 220 pounds or 100 kilograms of hazardous waste in one calendar month are called Very Small Quantity Generators (VSQG).

Household waste is exempt, and spent batteries generated by households are not regulated as hazardous waste. However, households are encouraged to recycle or dispose of all batteries as household hazardous waste (HHW) at a local disposal facility**. All non-household facilities at EAFB** are regulated and all waste batteries must be managed as UW.

Waste Battery Management

Batteries can be managed as UW in accordance with 40 CFR Part 273. It is estimated that twenty 55-gallon drums (550 pounds each) of waste batteries would equal 11,023 pounds (approximately 5,000 kilograms). When managing UW, the facility must make a handler status determination for the facility. Less than 5,000 kg on-site is considered a Small Quantity Handler of Universal Waste (SQHUW) while greater than this amount results in a status as a Large Quantity Handler of Universal Waste (LQHUW). The number of waste batteries accumulated on site is used as part of this determination. EAFB is designated as a SQHUW.

Location of Waste Battery Storage

Identify an area in your unit where UW batteries will be stored. This area should be away from high-traffic areas, clean, and dry.

Storage of Waste Batteries at the Unit

Intact batteries are not required to be placed in containers; however, non-intact batteries **must** be stored in a container that is structurally sound and compatible with the battery. It must also lack evidence of leakage, spillage, or damage that could cause release. It is good practice to place all batteries into containers. Incompatible battery types must be segregated. Store UW batteries so that their electrodes do not come in contact with the electrodes of another battery or metal object. Covering over battery terminals with clear tape is an effective way to achieve this.

The container must be stored in such a way that it will not tip over and must be closed unless actively adding or removing UW batteries. The container **must** be labeled or marked with the words "Universal Waste – Battery (ies)" "Waste Battery(ies)," or "Used Battery(ies). A label with those words can be affixed to the container or can be written directly on the battery.

A handler of UW batteries **must** be able to demonstrate the length of time that the batteries have been accumulated as a waste. Demonstrating accumulation time can be accomplished by:

1. Marking or labeling the battery or container with the **first date a battery was deemed a waste/placed** in the container (EAFB required method), or
2. Maintaining an inventory system on-site that identifies the date each battery became a waste or the earliest date that a battery in a group of batteries became a waste (method would require an EAFB exception).

A facility may not accumulate UW for longer than one year. This year limit applies to EAFB and **not** your unit. Units must turn in containers when full, or no later than **8 months** after the first battery was placed in the container, to the Hazardous Waste Facility (Building #4388) on Wednesdays from 0800 – 1100.

For Additional Information

EAFB Hazardous Waste Facility - Building #4388
354CES.CEIEC.HAZWASTE@us.af.mil
HW Program Manager (907) 377-1659
eielson.af.mil/Info/Environmental.aspx