

# Reed College Battery Recycling

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## 1.0 Purpose and Scope

Not all batteries are made of the same materials, which is important to consider when recycling or disposing of them. Rechargeable batteries create less waste and conserve resources yet contain heavy metals like cadmium, lead and nickel, which may contaminate the environment if not disposed of properly. Rechargeable batteries like lead acid batteries are highly recyclable though they contain strong sulfuric acid, which is dangerous when leaked into the environment. Non-rechargeable batteries also contain chemicals such as potassium hydroxide, a caustic agent that can cause respiratory, eye, and skin irritation as well as heavy metals like zinc and manganese. The intention of this document is to provide guidance for Reed College employees delivering batteries to Reed Battery Drop-Off Locations for recycling or disposal.

## 2.0 Responsibilities

### 2.1 Environmental Health and Safety

Environmental Health and Safety (EHS) is responsible for the battery recycling program oversight, including ensuring proper handling, storage, and disposal of waste batteries. EHS staff may train additional community members on correct procedures and administer the program requirements through non-EHS members.

### 2.2 Other Employees

The battery recycling program at Reed College applies to all employees who use and/or replace any type of battery, including custodial and maintenance staff as well as to those who process used batteries originating from College business.

## 3.0 Battery Recycling Procedure

### 3.1 Battery Drop-Off Locations

Send used batteries for disposal by bringing them to the following locations:

- The Recycling Center, located on the ground floor of the GCC near the mailroom. Please sort your batteries into the appropriately labeled bin.
- Chemistry 211
- Physical Plant, EHS offices

If any of the batteries are leaking, place them in a plastic bag away from the clean batteries. **Please notify EHS of any ruptured or damaged lithium batteries as they may violently react when exposed to moisture in the air and are extremely hazardous.**



## 3.2 Battery Sorting

Trained individuals will collect batteries from the listed locations above. Mixed batteries will be sorted, and all batteries will be prepared for disposal according to internal instructions.

## 4.0 Unknowns

Not everything in need of disposal is cut and dry, and sometimes it is not even a battery. If an unknown item that looks similar to a battery needs to be disposed of, please bring it to one of the locations listed in section 3.1. Attach a note to the item describing where it came from, your best guess to what it is, and your name and contact information. EHS or other trained staff will work to identify the item and dispose of it following federal, state and local regulations.

## 5.0 Damaged Batteries

Damaged or leaking batteries pose a hazard to both individuals and the environment through the release of corrosive chemicals and their potential for combustion. Damaged batteries should be identified, packaged in leak-proof plastic bags, and stored away from other batteries while awaiting disposal.

### 5.1 Lithium Batteries

Damaged, defective, or recalled lithium batteries such as cell phone and laptop batteries pose a great risk due to their reactivity with moisture in the air, making them a likely combustion source. Metal fires burn at extremely high heat and require smothering as an extinguishing mechanism, either through sand or by using a Class D fire extinguisher.

Damaged lithium batteries can be identified by their “puffy” appearance. Other signs of damage, including cracks or gouges, indicate that a battery should be treated as potentially combustible. Additionally, if a recall has been placed for the battery model the following protocol should be followed during disposal.

Due to their high hazard, specific protocols should be followed when storing damaged lithium batteries. There are metal pails at three locations (**Computer User Service, Chemistry 211, and the Warehouse Building**) dedicated to the storage of damaged lithium batteries. The following procedure should be followed when adding batteries to the pails:

1. Place each individual battery in its own plastic bag
2. Place bag in metal pail
3. Cover with layer of vermiculite or sand
4. Close lid
5. Notify EHS ([ehs@reed.edu](mailto:ehs@reed.edu)) when pail is full



## 5.2 Lead Acid Batteries

Lead acid batteries use sulfuric acid or other strong acids as an electrolyte. Damaged batteries can leak the acid and cause skin burns or corrosion to the storage container if they are not properly packaged.

Battery spill kits are available in Chemistry 211 and with the IT department. To clean a spill of battery acid, wear proper personal protection equipment including gloves and safety goggles. Neutralize any free liquid with baking soda, then sweep the material and any contaminated spill pads or paper towels into a trash bag. Label the bag with a hazardous waste label. Place damaged lead acid batteries into a plastic bag and note on a universal waste label that the battery is damaged. Bring both the spill debris and the damaged battery to Chemistry 211 for disposal.

## 5.3 Dry Cell Batteries

Dry cell batteries such as alkaline and zinc chloride batteries may rupture and release caustic powder if exposed to water or other fluids. These batteries are less hazardous than lithium and lead acid batteries, but should still be handled with caution. Damaged batteries can be stored with non-damaged batteries of the same type. Place damaged batteries in a sealable plastic bag and bring to a battery drop location. Clean any powder or other material released from the batteries with a broom and dustpan and dispose of it in the trash.

