

## **Knowledge Domain: Power Supply**

### **Unit: Batteries**

#### **Skill: Identification of leaking or corroded batteries**

#### **Tools and Parts Required:**

1. Assorted used batteries (dirty, rusted, and corroded)
2. Protective gloves

### **Introduction**

An electrical battery is one or more electrochemical cells that convert stored chemical energy into electrical energy. Batteries are a power source for household and medical applications. Batteries are available in various sizes for use in different devices and appliances. Batteries have a shelf life for optimum use. Shelf life is often indicated on the battery. Inappropriate use or storage may cause a battery to become faulty before the lapse of shelf life. Faulty batteries must be identified and replaced. A common fault in batteries is leaking or corrosion. In this skill, you will identify the leaking or corroded batteries.

### **Example**



This picture shows a leaking battery.

### **Identification and Diagnosis**

It is very important to identify when a battery needs replacement.

You can visually inspect whether a battery is leaking or corroded. Examine the entire battery for signs of leakage, corrosion or rusting. Discard the battery if leakage is present. A leaking battery may leave a slightly watery or sticky residue on your fingers. A

corroded battery will have a visible green or white powder. A rusty battery will have rust, or an orange-red color, anywhere on the battery.



## Procedure

1. Inspect the battery terminals, or +/- ends. The terminals of the battery are the most common sites of leaking or corrosion. Leaking can also occur at the bottom of the battery.
2. Look for the signs of leakage or corrosion such as watery or sticky residue, green or white powder or rust.
3. Examine the entire battery for signs of leakage.
4. If leaking or corrosion is visible, immediately discard the batteries, even if the equipment is still working. A leaking battery can destroy electronic or medical equipment.
5. If you notice or feel any large dings, dents or lumps, discard the battery. A large dent or bump can indicate the battery cells inside the battery are damaged.

Leaking or damaged batteries must be discarded. Corrosion and leakage residue can impair connectivity at the battery terminals. However, the medical equipment can be

repaired. Remove all residues from the medical equipment. The residue can destroy the equipment. Follow this procedure.

1. Remove the corroded or leaking batteries from the medical equipment.
2. Using a paper towel or rag, wipe all the surfaces of the medical equipment.
3. If there is residue on the metal contacts, sand the contacts until all the metal is completely shiny and clean.
4. For residue at other places, use a flat-top screw driver to scrape residue off.
5. Wipe or blow off all the residue that was sanded or scraped from the medical device
6. If necessary, open the medical equipment and repeat steps 1-4.
7. Place new batteries in the equipment and test equipment

### **Exercise**

Wear protective gloves. Your instructor will give you batteries to inspect.

Follow the procedure above to check the batteries for leakage or corrosion or any kind of damage.

Identify any leaking or damaged batteries.

Your instructor must verify your work.

### **Preventative Maintenance and Calibration**

Check the batteries regularly for faults. Do not store batteries in places which experience extreme temperatures. Remove batteries from equipment when not in use. When using an alternate source of power like an AC adaptor, remove the batteries from the equipment.

Leaking or corroded batteries contain toxic material. Leaking or corroded batteries should be handled carefully and disposed of safely. All medical equipment with batteries should be inspected at least every six months. Discard any batteries that show any signs of corrosion.

Always calibrate medical equipment before returning to use.