

# What is a leclanche cell

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Leclanche cell is a primary cell, handy for sporadic use, with positive anode of zinc encompassed by a mixture of manganese dioxide and powdered carbon in a pot, which is porous. The pot and the negative zinc terminal remained in a container holding ammonium chloride solution. The electromotive force (emf) is nearly 1 -4 volt.

Going back to its history, the Leclanche cell was invented by the French engineer Georges Leclanche in 1866. Leclanche's battery, additionally called a zinc-carbon battery, made use of an alternate type of cell than its antecedents. Rather than lead, the French engineer utilized zinc and a carbon-manganese dioxide mixture for his terminals. He additionally made use of ammonium chloride instead of the sulfuric acid that had been used as the preferred electrolyte. The changes he made to his battery made the cell less dangerous and lighter than the most commonly used Plante model.

a) zinc (Carbon cathode)b) zinc chloride (Ammonium chloride electrolyte reinstated by zinc chloride)c) alkaline manganese (Ammonium chloride terminal displaced by potassium hydroxide)

After going through the entire circuit, when electrons enter the carbon rod, which is the cathode, they join together with water and  $\text{MnO}_2$  (Manganese Dioxide) that further reacts with each other to produce negatively charged hydroxide ions and manganese oxide ( $\text{Mn}_2\text{O}_3$ ). Whole of this process is accompanied by secondary reaction, wherein the negative hydroxide ions react with positive ammonium ions in the electrolyte of ammonium chloride to produce molecules of water and ammonia.

The Leclanche cell was utilized widely for telegraphy, electric bell and signaling work; and for work where intermittent and low current was needed. The battery cell by Georges Leclanche proved out to be extremely advantageous in the early years of the telephones.

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