

### THE BATTERY

The battery is a device that converts chemical energy into electrical energy. It consists of two or more electrochemical cells connected in series. Each cell contains two electrodes: a positive terminal (cathode) and a negative terminal (anode). The electrodes are immersed in an electrolyte solution. The chemical reactions occurring at the electrodes create a potential difference, which drives the flow of electrons through an external circuit.

Component	Description	Material
Positive Terminal	Cathode	Lead Dioxide (PbO <sub>2</sub> )
Negative Terminal	Anode	Lead (Pb)
Electrolyte	Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> )	Aqueous Solution
Separator	Prevents short-circuiting	Porous Plastic
Case	Protective housing	Plastic

Overall cell reaction:  $Pb + PbO_2 + 2H_2SO_4 \rightarrow 2PbSO_4 + 2H_2O$

### CONNECTION



Diagram illustrating the connection of a battery to a light bulb.