

### THE BATTERY

1. The battery is a source of electrical energy. It is made up of several cells connected together. Each cell contains a positive plate (lead dioxide) and a negative plate (lead).

2. The positive plate is made of lead dioxide (PbO<sub>2</sub>) and the negative plate is made of lead (Pb). Both plates are immersed in an electrolyte solution of sulfuric acid (H<sub>2</sub>SO<sub>4</sub>).

3. The electrolyte solution is a mixture of sulfuric acid and water. The concentration of the electrolyte is important for the battery's performance.

4. The battery's capacity is determined by the amount of active material on the plates and the concentration of the electrolyte.

5. The battery's voltage is determined by the chemical reaction between the plates and the electrolyte. The voltage of a single cell is approximately 2.1V.

Parameter	Value	Unit
Capacity	50	Ah
Voltage	2.1	V
Weight	1.5	kg
Dimensions	100 x 50 x 100	mm
Operating Temperature	-20 to 50	°C
Storage Temperature	-30 to 60	°C
Self-Discharge Rate	5%	per month
Charging Current	0.1C	
Discharging Current	0.5C	

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Fig. 1.1

Technical drawing of a battery component, showing a curved lead plate with a tab.