



A Quick Guide to Battery Condition, SoH, and SoC

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The traction battery is an electric vehicle's primary energy source. Its condition has a direct impact on both available power and cruising range. The battery's condition is also an important factor when it comes to the safety and value of the vehicle.

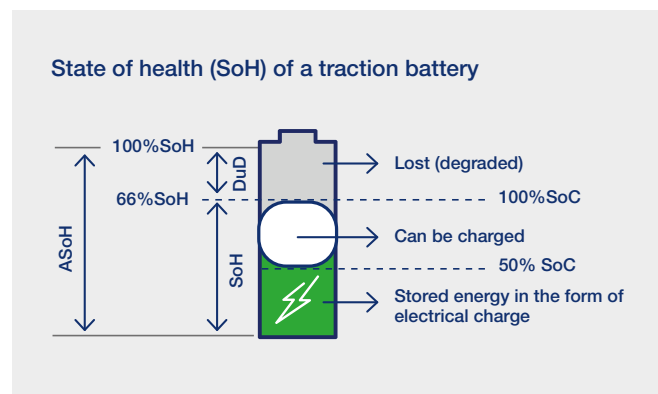
Battery condition is primarily determined by two key metrics: state of charge (SoC) and state of health (SoH).

State of charge (SoC)

The state of charge indicates how much capacity currently remains in the battery. It can be compared to the fuel gauge in a vehicle with an internal combustion engine. When the SoC is 100%, the battery is fully charged. When the SoC is 0%, it is fully discharged.

State of health (SoH)

The state of health (SoH) describes the battery's current available capacity and performance compared with its condition when new. In the automotive industry, high-voltage batteries with a SoH below 70%–80% are generally considered degraded.



Harmful to battery health

High temperatures and frequent fast charging can accelerate battery aging. Long periods of disuse with a very high or very low state of charge can also have a negative impact.

Determining SoH in an electric vehicle

To ensure safe operation and protect the battery from overloading, an electric vehicle's battery management system (BMS) continuously measures voltages, currents, and temperatures during operation, using this data to calculate a value for the battery's current state of health.

Measuring SoH

Accurate measurement of the state of health and performance of high-voltage batteries is made possible by the E-HEALTH Charge battery diagnostic solution. While the battery charges, the device delivers an independent SoH analysis within just 15 minutes, providing reliable data on the high-voltage battery's residual capacity and performance.

[> More information](#)

