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Battery system test specification

电池系统测试规范

(English Translation)

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Foreword

This specification was drafted in accordance with the rules given in GB/T 1.1-2009.

3.3 Battery pack battery pack

Multiple battery cells (or battery modules), battery management modules, battery boxes, and corresponding accessories are organically combined A unit that obtains electrical energy and can output electrical energy to the outside, referred to as a battery pack.

3.4 Battery system battery system

One or more battery packs (or battery modules) and corresponding accessories (battery management system, high voltage circuit, low voltage circuit, heat the management equipment and the mechanical assembly constitute a system for supplying electric energy to the entire electric vehicle.

3.5 Energy battery high energy density battery

It is characterized by high energy density and is mainly used for power batteries with high energy output.

3.6 Insulation resistance

The resistance between the power battery terminal and the metal case, battery case or body.

3.7 Rated capacity rated capacity

The C1 Ah value of the power battery provided by the company at 25 °C ± 2 °C.

3.8 Actual capacity

The average value of the experimental data of the "25 °C discharge capacity" of the power battery for three consecutive times (the difference between the maximum and minimum

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values of the three discharge capacities) the difference is less than 3% of the rated capacity).

3.9 Initial capacity initial actual capacity

The actual capacity Ah value of the new power battery.

3.10 Capacity recovery capacity recovery

After the power battery is stored at a certain temperature for a certain period of time, it is fully charged, and then the ratio of the discharge capacity to the initial capacity.

3.11 Charge termination current end-of-charge current

When performing constant voltage charging, the power battery terminates the current when charging.

3.12 Explosion

The power battery case is violently broken and the main component (solid matter) is ejected.

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3.13 Fire

Any part of the power battery emits an open flame (lasting longer than 1 s), and sparks and arcs are not open flames.

3.14 Leakage

The internal liquid of the power battery leaks to the outside of the battery case.

3.15 Sweep cycle sweep cycle

Scan back and forth within the specified frequency range, for example. 10 Hz to 55 Hz to 10 Hz.

4 Symbol

C1-1 h rate rated capacity (Ah).

I1-1 h rate discharge current, the value is equal to C1 (A).

RT. room temperature (25 ± 2) ° C SOC. state of charge I'max. maximum allowable pulse discharge current Imax. maximum allowable continuous discharge current

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5.1 Environmental conditions

The room temperature environment requires a temperature of 25 °C ± 2 °C; other test environments require a temperature of 15 °C ~ 35 °C, relative humidity of 25% ~ 85%, atmospheric pressure is 86 kPa to 106 kPa.

5.2 Measuring instrument and meter accuracy

Voltage measuring device. accuracy is not less than 0.5, and its input impedance is at least 1 kohm/V;

Current measuring device. accuracy is not less than 0.5;

Temperature measuring device. with appropriate range, the division value is not more than 1 °C, the calibration accuracy is not lower than 0.5 °C;

Timer. index by time, minute and second, with an accuracy of ±0.1%;

Measuring tool for measuring size. the division value is not more than 1 mm;

Scale weighing instrument. Accuracy is ±0.05% or more.

Insulation resistance meter. accuracy is not less than 5%.

5.3 Environmental adaptation

When the target ambient temperature of the test changes, the test device needs to complete the environmental adaptation process before the test. static at low temperature Set for not less than 24 h; stand at high temperature for not less than 16 h; or the difference between the cell temperature and the target ambient temperature does not exceed 2 °C. Test If the device contains a battery control unit, the environmental adaptation process needs to be turned off.

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