

# **Battery pack self-discharge standard**





## Overview

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IEC 62989, a standard developed by the International Electrotechnical Commission (IEC), outlines the requirements for self-discharge testing of rechargeable battery modules. Do batteries self-discharge?

Batteries, the power source for devices, have an often overlooked characteristic – self-discharge. Whether it's the AA batteries in your remote control or the lithium-ion battery pack, all batteries lose their charge over time, even when they're not in use.

What are the charging and discharging requirements of a battery pack?

The charging and discharging requirements of the battery pack are directly related to the power demand required by the electric motors and the charging time. The battery pack design shall be such that could meet the required max power in traction and regeneration modes. In addition, the charging power is a critical factor for end users.

What are the standards for a battery pack?

There are few standards addressing topics such as ISO7637\_1 ; ISO7637\_2 ; ISO7637\_3 , but as mentioned, more work or regulations are needed. The battery pack, as an individual component with connectors and interfaces, including all cells and electronics, has an acceptable EMC behavior, as defined in relevant standards.

What happens if a battery has a different self-discharge rate?

Varying self-discharge rates between cells in a battery pack can result in voltage imbalances between the cells and a shorter battery pack life (Zheng et al., 2020). Self-discharge rates vary depending on the cell chemistry, capacity, electrode geometry, electrolyte formulation, impurities, and temperature.



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Fast method for calibrated self-discharge measurement of ...

Nov 1, 2023 · The self-discharge rate is an important parameter to assess the quality of lithium-ion batteries (LIBs). This paper presents an accurate, efficient, a...

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Battery Charging & Discharging: 10 Key ...

Mar 19, 2025 · A high self-discharge rate means the battery will lose energy faster when stored, reducing its usability. Pro Tip: Store batteries at ...

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Self-discharge of Batteries: Causes, Mechanisms and Remedies

Sep 30, 2022 · Similarities between battery chemistries and causes of self-discharge are identified; concepts and ideas obtained this way are outlined.

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Self-Discharge Standards: How 72-Hour Rest Periods Affect ...

Jun 20, 2025 · Conclusion Self-discharge standards and the implementation of a 72-hour rest period play a crucial role in determining the pass/fail rates of batteries. By providing a more ...

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Self-Discharge Current Measurement , Arbin Instruments

2 days ago · Battery Self-Discharge Current(SDC) is the small amount of electrical current that is lost naturally from a battery when it is not in use, due to internal chemical reactions within the ...

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Comprehensive Understand Li-ion Battery ...

Jan 30, 2024 · Discover how lithium-ion battery self-discharge affects performance. Learn tips to minimize it and keep your devices powered ...

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Understanding battery self-discharge

Mar 24, 2022 · Understanding battery self-discharge By Sol Jacobs VP and General Manager Tadiran Batteries Ultra-long-life lithium batteries feature a low self-discharge rate while ...

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What Are the Discharge Characteristics of Li ...

Jul 22, 2025 · Discharge characteristics of Li-ion batteries explain voltage drop, capacity changes, and how current, temperature, and chemistry ...

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IEC 62989 - Self-Discharge Testing of Rechargeable Battery ...

IEC 62989, a standard developed by the International Electrotechnical Commission (IEC), outlines the requirements for self-discharge testing of rechargeable battery modules.

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Battery Shelf Life , Battery Knowledge , TRITEK

Discover the battery shelf life and effects of self-discharge. Explore expiration, types, and causes. Get insights into battery longevity.

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### Self-discharge of Batteries: Causes, ...

Sep 30, 2022 · Similarities between battery chemistries and causes of self-discharge are identified; concepts and ideas obtained this way are outlined.

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### General overview on test standards for Li-ion batteries, ...

Nov 7, 2017 · Shock tests Drop test test Roll-over test Immersion test Crush test High temperature hazard test Thermal stability test Cycling without thermal management Thermal ...

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### Automotive Battery Pack Standards and Design ...

Mar 18, 2025 · This review aims to bridge the gap between academic research and industry requirements by providing a structured analysis of automotive battery pack standards, key ...

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### Battery self discharge - an essential guide ...

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### Why self-discharge is important in batteries

Feb 28, 2023 · This FAQ briefly compares the self-discharge rates of selected primary and secondary battery chemistries, reviews some of the ...

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### Understanding self-discharge of a Lithium-ion battery

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### How Does LFP Self-Discharge Rate Compare to Other ...

Jan 21, 2025 · Redway Power, with over 13 years of OEM lithium battery manufacturing experience and adherence to ISO 9001:2015 standards, specializes in producing LFP battery ...

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### Understanding Self-Discharge in Batteries: ...

In conclusion, self-discharge is an inherent property of all batteries, but it can be managed through proper storage, regular monitoring, and using the ...

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### What is Battery Self-Discharge and Why Does It Occur

Apr 12, 2025 · Battery self-discharge refers to the natural loss of charge in a battery over time, even when it is not in use. This phenomenon occurs due to internal chemical reactions and ...

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### A Guide to Understanding Battery Specifications

Dec 18, 2008 · A battery is a device that converts chemical energy into electrical energy and vice versa. This summary provides an introduction to the terminology used to describe, classify, ...

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### IEC 61960, 62133, 62619, and 62620 Battery ...

Apr 13, 2024 · The key standards include IEC 61960 for performance and marking, IEC 62133 for portable device safety, IEC 62619 for industrial ...

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