

# Shelf life of a lithium battery

**5** Years  
warranty





## Overview

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The shelf life of lithium batteries depends on storage conditions<sup>12345</sup>: When stored at room temperature (70°F/21°C), lithium batteries have a shelf life of 10-15 years<sup>1</sup>. Storing batteries at higher temperatures shortens their shelf life<sup>1</sup>. Lithium-ion batteries can be stored for years if kept in cool, dry conditions<sup>2</sup>. Self-discharge occurs at a rate of 0.5% to 2% per month<sup>3</sup>. Rechargeable lithium-ion batteries can last up to 10 years when stored at 3.7V<sup>4</sup>. Standard lithium-based batteries can have a shelf life of up to ten years, while military and medical lithium-based batteries can last up to twenty plus years<sup>5</sup>. How long does a lithium battery last?

This date is a useful reference point for estimating the battery's shelf life, which is usually specified by the manufacturer. Shelf life can range from a few years to more than a decade, depending on the battery type and storage conditions. How Can Lithium Battery Shelf Life Be Extended?

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How to prolong the shelf life of lithium ion batteries?

There are several strategies that manufacturers, distributors, and consumers can follow to prolong the shelf life of lithium-ion batteries: Lithium batteries should be stored in cool environments, ideally between 15°C and 25°C (59°F to 77°F), and avoid high temperatures. Store at a partial charge.

How long does a lithium phosphate battery last?

When the temperature range is from 35°C~40°C for LFP, the calendar life is 5-6 years. But over 45°C, the calendar life will be shortened to 1-2 years. Different cathode materials have varying calendar life properties. For example, lithium iron phosphate (LFP) batteries often have a longer calendar life than nickel-rich chemistries.

Does storing a lithium ion battery affect calendar life?

Storing a battery at a high state of charge can contribute to degradation over



time, impacting both calendar life and shelf life. In the realm of lithium-ion batteries, comprehending cycle life, calendar life, and shelf life is pivotal for users and manufacturers alike.

What factors affect the life of a lithium ion battery?

One key factor is the quality and brand of the battery itself. Higher-quality batteries tend to have a longer shelf life compared to lower-quality ones. Another important consideration is the storage conditions in which the battery is kept. Extreme temperatures can significantly impact the lifespan of lithium-ion batteries.

How to store a lithium ion battery?

For optimal shelf life, store lithium-ion batteries at about 40-50% charge. Storing at full charge situation can accelerate aging while storing completely discharged can cause deep discharge and damage the cell risk. Lithium-ion battery manufacturers often charge their battery packs to approximately 60% state of charge (SoC) before shipping.



## Shelf life of a lithium battery

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### BU-808: How to Prolong Lithium-based Batteries

Table 4: Discharge cycles and capacity as a function of charge voltage limit Every 0.10V drop below 4.20V/cell doubles the cycle but holds less capacity. Raising the voltage above 4.20V/cell would shorten the life. The readings reflect regular Li-ion charging to 4.20V

### Understanding the Shelf Life of LiFePO4 Batteries

Generally, LiFePO4 batteries have a relatively long shelf life compared to other types of batteries. Most manufacturers recommend storing LiFePO4 batteries in a cool, dry place at temperatures between 0 C and 25 C (32 F and 77 F). Storing the battery outside of this temperature range can reduce its shelf life.



### LITHIUM ION BATTERY STORAGE & MAINTENANCE CHARGING

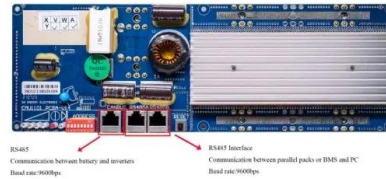
Lithium Ion rechargeable batteries should be stored at 50% to 60% state-of-charge (SOC). The shelf life of a lithium ion cell/battery is a function of the self discharge, temperature, battery age and state-of-charge (SOC) conditions imposed upon the cell/battery

### What is the Lifespan of a LiPo Battery? How Long They Last

LiPo batteries use an electrolytic solution composed of a lithium polymer that is more gel-like in texture, in contrast to the liquid electrolyte solution used in lithium-ion batteries.



In any case, these electrolyte solutions naturally tend to decompose over time, producing gases such as oxygen, carbon dioxide, and carbon monoxide.

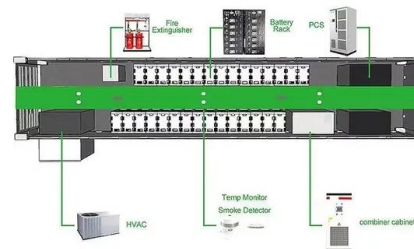


### How Long Is The Shelf Life Of Batteries? A Complete Guide

Lithium Batteries: Lithium batteries, often found in devices like digital cameras, smoke detectors, and calculators, have a longer shelf life compared to alkaline batteries. They can last anywhere from 10 to 15 years. Nickel-Metal Hydride (NiMH) Batteries: NiMH batteries are commonly used in rechargeable devices like cameras and portable gaming consoles.

### Everything You Need To Know About The CR2032 ...

The CR2032 battery is a non-rechargeable (primary) battery that is very common today. It is a coin-cell battery which utilizes lithium chemistry. These batteries are used in a wide range of applications and are available from many retailers. ...



### [How Long Do Rechargeable Batteries Last?](#)

Disclosure This website is a participant in the Amazon Services LLC Associates Program, an affiliate advertising program designed to provide a means for us to earn fees by linking to Amazon and affiliated sites. Rechargeable batteries come in different types and chemistries, including lithium-ion, NiMH, and nickel-cadmium. Lithium-ion batteries are ...



### Ultimate Guide to 3V Lithium Batteries: CR2032, ...

Lithium batteries are essential components in many electronic devices, providing reliable power in a compact form. This guide focuses on 3V lithium batteries, specifically popular types like the CR2032 and CR123A, ...

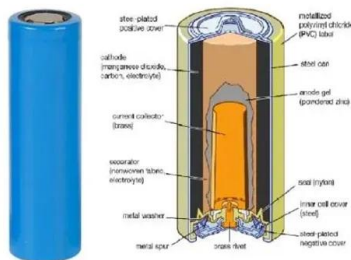


### [How long do batteries last? , Batteries Plus](#)

The shelf life of lithium batteries varies depending on the type of lithium battery and what it's used in. Most lithium rechargeable batteries will have irreversible damage if they are stored for longer than 1 year without charging them periodically. Lead Acid Lead acid

### How Long Do Lithium Batteries Last? (The Definitive Answer)

Curious about how long lithium batteries typically last and which factors impact their longevity? Now you can prolong the life of your LiFePO4 battery and get the most out of it for years to come! How Long Do Marine Batteries Last? Find out here! Ionic Lithium



### Battery comparison chart

Battery Comparison Chart Facebook Twitter With so many battery choices, you'll need to find the right battery type and size for your particular device. Energizer provides a battery comparison chart to help you choose. ...



## How Long Do Lithium Batteries Last? A Comprehensive Guide

Among all deep-cycle batteries, the lithium battery lifespan is the longest one. Many lithium batteries can last for 3,000 to 5,000 partial cycles. On the other hand, a lead-acid ...



### Lithium-ion Battery Cycle Life VS. Calendar Life VS.

What is the Shelf Life of a Lithium-ion Battery? Shelf life refers to the duration a lithium-ion battery can be stored without significant degradation. The shelf life of a lithium-ion battery in storage varies depending on the ...

### [How Long Do Lithium \(Li-Ion\) Batteries Last?](#)

Puzzled about your lithium-ion battery's lifespan? Discover key factors influencing lifespan and practical ways to extend battery life. Learn more here. Buyer's Guides Buyer's Guides Detailed Guide to LiFePO4 Voltage Chart (3.2V, 12V, 24V, 48V) Buyer's Guides



### Complete Guide to Lithium Battery Shelf Life, Cycle Life, and ...

Shelf life can range from a few years to more than a decade, depending on the battery type and storage conditions. How Can Lithium Battery Shelf Life Be Extended? Extending the shelf life of a lithium battery can help maintain its performance and maximize its usability ...



## A Guide to Battery Storage, Discharge, and Expiration

Battery Shelf Life Shelf life refers to the duration a disposable battery retains its charge unused, or for rechargeable batteries, Lithium-ion batteries should be stored in a charged state, ideally at 40% SoC. These batteries exhibit minimal self-discharge below 4

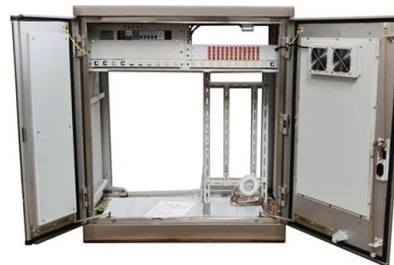


### How to Store Lithium Power Tool Batteries

3. Protect the battery from physical damage. Don't store the battery where it could be dropped or knocked over. Consider putting it in a padded bag or box to help protect it from bumps and scrapes. 4. Keep an eye on the battery's charge level. Is It Ok to Leave a

### How Long Do Lithium-ion Batteries Last?

Lithium batteries, including lithium coin cell batteries, have virtually no self-discharge below approximately 4.0V at 68 F (20 C). Rechargeable lithium-ion batteries, such as the 18650 ...



### **How long will my Energizer® batteries last in their packaging?**

Q: How long will my Energizer ® batteries last in their packaging? A: Shelf life varies across our products: Energizer MAX ® AA, AAA, C, and D cells last up to 10 years in storage, while our 9V lasts up to 5 years in storage Energizer ® EcoAdvanced ® AA ...



## How Long Will A 12 Volt Battery Last On The Shelf?

Factors Affecting the Shelf Life of a 12 Volt Battery The longevity of a 12-volt battery on the shelf is influenced by multiple factors: Battery Chemistry: Different types of batteries, such as lead-acid and lithium-ion, have varying shelf lives. Lithium-ion batteries typically offer a longer shelf life compared to lead-acid batteries, due to their chemical stability.



## Do Lithium Batteries and Cells Go Bad if Not Used

For the longest possible shelf life, store your batteries between 50 F and 77 F. Storage charge level: Don't store dead batteries. Make sure your lithium-ion batteries are somewhere between 40 and 60% charged to prevent over-discharge during storage.

## Comprehensive Understanding of Lithium-ion Battery Life Cycle

What Is The Lithium Battery Shelf Life That Is In Storage? When a lithium-ion battery is not in use and is stored properly, it will gradually lose some of its charge over time. This self-discharge process occurs due to the battery's internal reactions.



## How Long Do Lithium Batteries Last? (The Definitive ...

Lithium batteries currently have the longest lifespan of all available deep-cycle batteries. Many can last between 3,000 and 5,000 partial cycles. For comparison, lead-acid batteries typically give 500 -1,000 partial cycles.



### How to Store Batteries So They Last for Years

Even when stored properly, li-ion batteries only have a shelf life of around 2-3 years. So, if you buy Li-ion batteries that have been sitting around on the manufacturer's shelf for a while, you have already lost some of their usable life. Lithium Batteries (Including

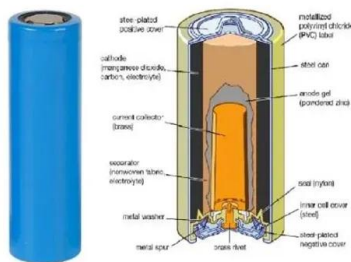


### Comprehensive Understanding of Lithium-ion Battery Life Cycle

In this comprehensive guide, we will delve into the intricacies of the li-ion battery cycle life, explore its shelf life when in storage, compare it with lead-acid batteries, discuss the ...

### Lithium-ion battery

A lithium-ion or Li-ion battery is a type of rechargeable battery that uses the reversible intercalation of Li + ions into electronically conducting solids to store energy. In comparison with other commercial rechargeable batteries, Li-ion batteries are characterized by higher specific energy, higher energy density, higher energy efficiency, a longer cycle life, and a longer ...



### Understanding the Shelf Life of Lithium Ion Batteries

Understanding the Shelf Life of Lithium Ion Batteries Introduction Lithium-ion batteries have revolutionized the world of technology, powering everything from our smartphones to electric cars. However, despite their widespread usage and convenience, these batteries can also be unpredictable when it comes to shelf life. Understanding how long lithium-ion batteries ...



### How Long is the Shelf Life of Lithium Batteries? Exploring the ...

Lithium-Ion Batteries Shelf Life: Typically 2 to 3 years. Lithium-ion (Li-ion) batteries are the most common type used in consumer electronics, such as smartphones, tablets, and laptops, as well as in electric vehicles (EVs). Although Li-ion batteries offer high



### How Long Do Lithium Batteries Last in Storage?

Lithium batteries typically have a shelf life of 2-3 years, after which their capacity may start to degrade. Is it better to store lithium batteries fully charged or partially charged? It ...

### How Long is the Shelf Life of Lithium Batteries? Exploring the ...

In this article, we delve into the shelf life of various types of lithium batteries, factors influencing their lifespan, and best practices for maintenance to maximize their ...



### Battery Shelf Life

Battery shelf life for a lithium battery can be between 2 and 4 years. Lead Acid There are also many types of lead acid batteries. Acid batteries include pure lead acid, sealed lead acid and advanced glass mat (AGM) ...



## batteries

I am trying to determine the shelf life of a typical Li-Polymer battery. I have Googled but can't find any definitive view on the matter. There are two questions regarding the battery shown: 1. What is the likely useful shelf life of an unused (from factory) battery 2.



## Everything You Need To Know About The CR123A Battery

Microbattery has been selling batteries online for over 25 Years and has one of the widest variety of batteries available, including all types of the CR123A battery, from a variety of world-renowned manufacturers. For all your battery needs, please consider Microbattery and let them be your

### [How to store lithium based batteries](#)

Military and Medical lithium based batteries can have a shelf life of up to twenty plus years. Was this article helpful? Yes No Related Articles  
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