## **SOLAR** Pro.

## Beginner s guide to lead-acid batteries

What is a lead acid battery used for?

Lead acid batteries are used in machinery, UPS's (uninterruptable power supply), robotics, and other systems where a lot of power is needed and weight is not as important. Lead acid batteries come in 2V cells, that means you can have a battery with an even number of volts. The most common voltages are 2V,6V,12V and 24V.

How many volts does a lead acid battery have?

Lead acid batteries come in 2Vcells, that means you can have a battery with an even number of volts. The most common voltages are 2V,6V,12V and 24V. Pros: Cheap, powerful, easily rechargeable, high power output capability. Cons: Very heavy, batteries tend to be very large bricks because energy density is very low.

What is a lead-acid battery made of?

Most lead-acid batteries are constructed with the positive electrode (the anode) made from a lead-antimony alloy with lead (IV) oxide pressed into it, although batteries designed for maximum life use a lead-calcium alloy. The negative electrode (the cathode) is made from pure lead and both electrodes are immersed in sulphuric acid.

What happens if a lead acid battery freezes?

In cold weather, the electrolyte liquid in lead-acid batteries can freeze on the plates. Freezing of the electrolyte can cause damage to the plates and cracking on the casing resulting in leakages. During hotter temperatures, the electrolytes on lead-acid batteries can evaporate.

How do you charge a lead-acid battery?

There are two basic ways to charge a lead-acid battery from an uninterrupted supply (e.g. mains or a generator): Constant-voltage charge- A constant voltage is applied across the battery terminals. As the voltage of the battery increases the charging current tapers off. This method requires simple equipment but it not recommended.

How long do lead-acid batteries last?

Lead-acid batteries can last anywhere between three and 10 yearsdepending on the manufacturer, use and maintenance. To get the most life out of your battery: Don't let your battery discharge below 20%. Don't overcharge your battery. Keep the battery clean, including terminal connections and cables, to prevent corrosion.

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