

# AA vs AAA Batteries What is the Difference

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Batteries are essential to our daily lives, powering everything from remote controls to children's toys. Among the most common types are AA and AAA batteries, which serve different purposes despite their similar names and appearances.

Understanding the differences between AA and AAA batteries is crucial for optimizing device performance and longevity. This article will explore these differences in detail, including size, capacity, and typical uses.

AA batteries, often called "double A," are larger in length and diameter than AAA batteries. They measure approximately 50.5 mm in length and 14.5 mm in diameter.

This size allows for a larger internal volume, accommodating more active materials. As a result, AA batteries can store more energy, leading to a higher capacity and longer life.

This makes them suitable for devices requiring more power or frequently used, such as digital cameras and handheld gaming devices. The larger AA batteries also mean they are heavier, which can be considered in portable devices where weight is a concern.

AAA batteries, or "triple A" batteries, are smaller and lighter than AA batteries, about 44.5 mm long and 10.5 mm in diameter. The reduced size limits the amount of active material housed within the battery, resulting in a lower energy capacity.

However, this makes AAA batteries ideal for compact, low-drain devices where space saving is crucial and extensive energy storage is unnecessary. Examples include remote controls, wireless mice, and small flashlights.

The lightweight nature of AAA batteries also contributes to the portability and comfort of the devices they power, making them preferable for items that are held or carried frequently.

AA batteries typically range from about 1700 mAh to 3000 mAh for alkaline versions and even higher for lithium types. Rechargeable AA batteries, such as those using NiMH technology, can offer capacities close to 2,000-2,500 mAh.

AAA batteries, being smaller, have lower capacities; usually between 500 mAh and 1200 mAh for alkaline versions. Rechargeable AAA batteries, such as NiMH, can offer 600-1000 mAh capacities.

AA and AAA batteries come in various chemistries, including alkaline, lithium, and rechargeable versions like

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nickel-metal hydroxide (NiMH) and nickel-cadmium (NiCd). The standard voltage for AA and AAA batteries is 1.5 volts for disposable types and about 1.2 volts for rechargeable ones, regardless of size.

Yes, AA and AAA batteries are recyclable. Both disposable and rechargeable batteries can and should be recycled to prevent environmental pollution and recover valuable materials that can be reused. However, the recycling process for batteries depends on their chemistry.

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