



The Advanced Lead-Acid Battery The Greatest Unknown Recycling Story

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Lead-Acid Batteries are the most highly recycled consumer product.

This Recycling Success Story is a result of lead-acid's intrinsic value and the enactment of industry-sponsored lead-acid battery recycling requirements

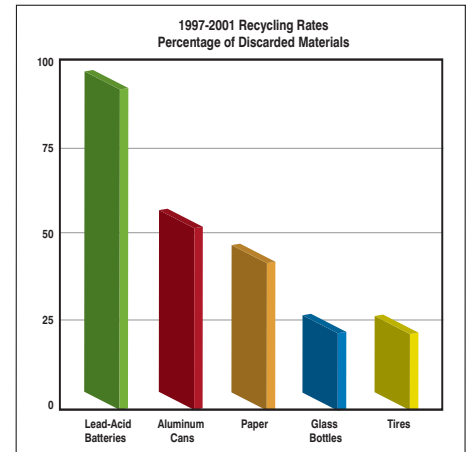
80% of a typical lead-acid battery is comprised of material that is recycled from older batteries.

Lead-Acid Batteries – The Most Highly Recycled Consumer Product

More than 97 percent of all lead-acid batteries are recycled. No other consumer product recycling program even comes close. According to research by the Battery Council International, 55 percent of aluminum soft drink and beer cans are recycled, 45 percent of newspapers, 26 percent of glass bottles and 26 percent of tires.

The battery's production, distribution, recovery and recovery cycle is virtually "closed-loop," meaning nearly 80% of a typical lead-acid battery is comprised of material that is recycled from older batteries.

Instead of being dumped in landfills, virtually all spent batteries are sent to recycling centers that operate under strict environmental regulations. During this recycling process, the battery is broken down into components, with lead and plastic being resold to manufacturers that, in turn, formulate them into new batteries. This recycling process is repeated to the point where the lead-acid batteries used in cars, trucks, boats or other vehicles are comprised of materials that have been recycled many times over. This makes lead-acid battery recycling extremely successful from both environmental and cost perspectives.



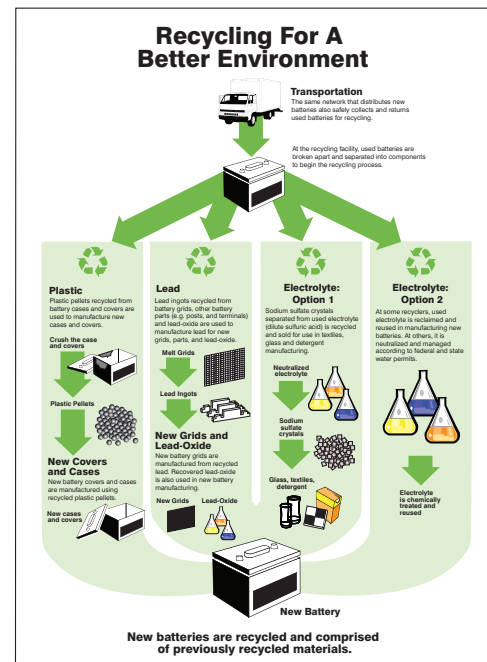
Source: Battery Council International

Recycling For a Better Environment

The recycling of lead contributes to sustainability and brings many advantages both to industry and to society at large, in areas such as energy consumption, carbon emissions, resource conservation and costs. When used batteries are taken to recycling centers they are treated under strict environmental procedures by a combination of mechanical and flotation processes, to separate them into their component parts (plastic, lead and sulfuric acid).

The plastic polypropylene fraction is cleaned and dried and sent on for further processing into granules which in turn can be utilized for either re-manufacture into battery cases or other plastic components. The

lead recovered from the recycling process is taken to smelters where it is processed and refined into lead and lead alloys suitable for manufacture into battery oxides or the battery grids. The sulfuric acid is neutralized with sodium carbonate (a compound similar to baking soda) enabling its recovery as sodium sulphate, a substance that can be sold for use in detergents, glass and textile manufacturing.



Source: Battery Council International

When It Comes To Recycling—No Other Battery Comes Close

The lead-acid battery recycling structure has been proven to be efficient and highly successful, and no other battery chemistry comes near the recycling rate of lead-acid batteries. While the use of Nickel Metal Hydride batteries in hybrid electric vehicles has grown in recent years, only a few companies have started the process of bringing a recovery cycle to market, which could take years to become commercially viable.

In the meantime, the lead-acid recycling process has been running for many years and can easily accommodate recycling the next generation of lead-acid batteries used in hybrid electric vehicles.



For More Information

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