



Batteries (Other Types)

Potential Environmental Impacts

With the increased production of hybrid cars, there are now different types of batteries to manage along with the more common lead acid batteries in vehicles. While lead acid batteries are far more toxic than the nickel metal hydride and lithium ion batteries found in hybrid vehicles, all types of batteries should be managed properly in order to lessen their impact on the environment.

Rechargeable batteries can also be found in tools, flashlights, walkie-talkies and other equipment utilized by the vehicle service industry. *See the Batteries (Lead Acid) Fact Sheet for specific management requirements for lead acid vehicle batteries.*



2010 Toyota Prius HV Battery

Rechargeable Battery Type	Where Typically Used	Can they go in the trash?	Recycling Options	Is there a charge for recycling?
Nickel Cadmium (Ni-Cd)	cordless phones, power tools, hand held vacuums, camcorders	No	Rechargeable Battery Recycling Corporation (see Resources section)	No, the RBRC program is free.
Small Sealed Lead Acid	cordless phones, power tools, camcorders	No	Rechargeable Battery Recycling Corporation (see Resources section)	No, the RBRC program is free.
Lithium Ion (those found in hybrid vehicles)	hybrid vehicles	No	Contact auto dealership or manufacturer Or a company that recycles these batteries (see Resources section)	Check first with the manufacturer. Some recycling companies may charge for shipping.
Lithium Ion (excluding vehicle batteries)	cameras, cell phones, lap top computers, PDAs, 2-way radios	No	Rechargeable Battery Recycling Corporation (see Resources section)	No, the RBRC program is free.
Nickel Metal Hydride (Ni-MH) those found in hybrid vehicles	hybrid vehicles	No	Contact auto dealership, manufacturer Or a company that recycles these batteries (see Resources section)	Check first with the manufacturer. Some recycling companies may charge for shipping.

Rechargeable Battery Type	Where Typically Used	Can they go in the trash?	Recycling Options	Is there a charge for recycling?
Nickel Metal Hydride (Ni-MH) excluding vehicle batteries	power tools, cell phones, camcorders	No	Rechargeable Battery Recycling Corporation (see Resources section)	No, the RBRC program is free.
Alkaline & Carbon Zinc	flashlights, answering machines, radios, walkie-talkies	Yes	Contact a company that recycles these batteries (see Resources section)	Yes, they usually charge by weight or have a fixed per box charge.

Legal Requirements

- ◆ Storage batteries (lead acid and other batteries used in automobiles, airplanes, boats, recreational vehicles, tractors and like applications) must be recycled in Connecticut, and may not be disposed of with other solid wastes [RCSA Section 22a-241b-2(1)(H), CGS Section 22a-256g(a)].
- ◆ Under federal law, nickel cadmium (Ni-Cd) and small sealed lead acid batteries must be managed as Universal Waste. They must be shipped to a Universal Waste handler, or to an authorized destination facility for recycling. Prior to shipment, ensure that the receiving facility agrees to receive the shipment. Any shipments that are rejected must be taken back, or directed to another handler or destination facility. In addition, if you transport batteries from one site to another, you must comply with Universal Waste transporter requirements [40 CFR 273 Subpart D].
- ◆ Before shipping batteries off-site, they must be packaged, marked, labeled, and placarded in accordance with U.S. Department of Transportation (DOT) rules for hazardous materials. Batteries must be prepared and packaged for transport in a manner to prevent a dangerous evolution of heat, short circuits, and damage to terminals. Battery terminals must be covered with tape prior to being placed in a container, or batteries must be placed in individual containers. There is an exemption for household type alkaline batteries that do not pose a significant risk for creating sparks or a dangerous quantity of heat.

Note: The Rechargeable Battery Recycling Corporation offers a free program to recycle these and other rechargeable batteries (see Resources below). Following the instructions of this program will assist you in complying with all state and federal collection, storage and transportation requirements.

Best Management Practices

- ★ In Ni-MH batteries, the electrolyte is a caustic alkaline fluid. However the electrolyte is absorbed into the battery cell plates and will not normally leak out even if a battery module is cracked in a catastrophic crash. In the rare occurrence of a leak or spill, a dilute boric acid solution or vinegar can be used to neutralize the Ni-MH electrolyte.

- ★ Place cracked or leaking batteries in a sturdy, chemical-resistant, leak-proof, sealed container (e.g., a sealable 5-gallon plastic pail). The container should be kept closed.
- ★ Use rechargeable batteries for your flashlights, walkie-talkies and other electronic devices. The new “hybrid” Ni-MH batteries come fully charged and stay charged longer.
- ★ Unplug chargers when not in use (they still use electricity even when not charging batteries). Visit www.EnergyStar.gov for information on finding more energy-efficient battery charging systems.
- ★ Store batteries away from heat and moisture and remove them from infrequently used devices in order to prolong their life.

Resources

The Rechargeable Battery Recycling Corporation (www.RBRC.org) has a free program for recycling nickel cadmium, nickel metal hydride, lithium ion, nickel zinc, and small sealed lead acid rechargeable batteries. The program does not accept alkaline, lithium, non-rechargeable, or wet-cell batteries.

Battery recycling companies such as **INMETCO** (www.INMETCO.com), **Toxco** (www.toxco.com) and **Kinsbursky Brothers** (www.kinsbursky.com) have pre-paid battery recycling programs for shipments of small quantities of nickel cadmium, nickel metal hydride, alkaline, small sealed lead acid and lithium ion rechargeable and non-rechargeable batteries.

Pollution Prevention Checklist

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| ✓ Do you use rechargeable batteries whenever possible? | YES | NO | N/A |
| ✓ Do you unplug chargers when not in use? | YES | NO | N/A |



Did You Know?

Using a disposable battery to create 1 kilowatt-hour of electricity has a global warming impact equivalent to driving a car 283 miles; using a rechargeable battery is equivalent to driving 10 miles.