



END OF LIFE VEHICLE SOLUTIONS

## Hybrid, Plug-in Hybrid, and Electric Vehicle High Voltage Battery (HVB) Recycling Information

**WARNING: Refer to manufacturer specific dismantling manuals above for important instructions regarding proper battery removal and handling before taking any action. Always assume that the high-voltage battery is charged and powered up.**

Most hybrid vehicles launched prior to the 2013 MY contain a large format High Voltage NiMH (Nickel Metal Hydride) battery; many other hybrid, plug-in hybrid, and all-electric vehicles launched after the 2012 MY contain a Lilon (Lithium Ion) battery. Recycling these batteries helps to protect the environment, and may be required by law. Certain federal, state, provincial and local laws and regulations govern the handling, packaging, shipping and recycling of these batteries. Additionally, under certain circumstances, by law, used HVBs may be considered hazardous waste or dangerous goods. Dismantlers and shippers are responsible for understanding and complying with all applicable laws and regulations.

NiMH and Lilon HVBs contain materials that can be recycled and used to manufacture new batteries; therefore, ELVS encourages recycling all High Voltage NiMH and Lilon batteries. As these batteries are High Voltage and may weigh up to 100 pounds or more, it is important that you have appropriate equipment and qualified personnel available when removing the battery from the vehicle and when handling.

### NiMH Batteries

The following is a general explanation of certain applicable laws; however, these laws may change from time to time and this is not a complete summary. Generally, under U.S. federal and state law, sealed, non-leaking NiMH batteries are considered dry sealed batteries. These batteries are regulated under U.S. Department of Transportation regulations – see 49 CFR 172.101. However, under 49 CFR 172.102 Special Provision 130, batteries that are “dry, sealed, n.o.s.” (i.e., not otherwise specified and transported by modes other than by vessel) are only subject to a specified subset of the DOT hazardous materials regulations. Exceptions are noted in 49 CFR 173.159a.

The generator should also evaluate the potential for the management of waste NiMH batteries under their applicable Universal Waste Management regulations as established by their respective State regulatory agency. Note: In California, waste NiMH batteries must be managed under California Universal Waste Rules.

If NiMH batteries are found to be leaking, they may be regulated as hazardous waste under federal and state regulations, and as a hazardous material under DOT. NiMH batteries with other damage also may be subject to hazardous waste laws. The recycling companies listed above have the ability to accept these batteries, but additional measures must be taken by the shipper to properly manage, transport, and dispose of them. Both you and the shipper have responsibility for complying with applicable federal, state and local laws, and regulations.

In Canada, sealed, non-leaking NiMH batteries intended for recycling are not regulated under the Canadian Transportation of Dangerous Goods (TDG) Act as long as the batteries are shipped according to special provision 39 (2) of those regulations. If the batteries are found to be leaking, they will be regulated as a hazardous waste under applicable provincial regulations, and as a dangerous good under

TDG. In this case, the shipper must ship the batteries according to special provision 39 (1) in the TDG regulations. Both you and the shipper have responsibility for complying with applicable federal, provincial and local laws and regulations.

### Lilon Batteries

The following is a general explanation of certain applicable laws. Note, this is not a complete summary, these laws may change from time to time, and additional regulations governing Lilon batteries are under development. Generally, however, under U.S. Department of Transportation (DOT) regulations, Lilon batteries are regulated as hazardous materials. The U.S. DOT outlines packaging and shipping requirements for Lilon batteries. Certain exceptions on packaging and transportation regulations for large format lithium ion batteries may be found in 49CFR 173.185 (d) and (g).

The generator should also evaluate the potential for the management of waste lithium ion batteries under their applicable Universal Waste Management regulations as established by their respective state regulatory agency. Damaged or leaking lithium ion batteries may be subject to more stringent management requirements depending on the state where these batteries are generated.

Under U.S. federal and state law, waste lithium ion batteries may or may not be considered hazardous wastes which would require them to be disposed of in accordance with Resources Conservation and Recovery Act (RCRA) regulations or equivalent or more stringent State regulations in States with authorized RCRA programs. The determination of whether or not these are considered hazardous waste will depend on several factors which include, but are not limited to, the specific chemistry of the battery; the potential for the generation of toxic vapors upon exposure to water; potential for detonation or explosive reaction upon exposure to a strong initiating source; etc.

Though ELVS makes no representations or endorsements, there are several companies that have the ability to recycle high voltage batteries. Some of these companies are included below.

### **For USA**

#### **Battery Resourcers, Inc.**

54 Rockdale street, Worcester MA, 01606  
508-344-1608  
Joe Bush

#### **Battery Solutions**

1-800-852-8127

#### **KBI (Kinsbursky Brothers, Inc.)**

1125 Beacon Street  
Brea, CA 92821  
info@evbattmgmt.com  
Tel: 800-502-9258  
Fax: 714-510-2962  
www.kinsbursky.com

#### **INMETCO**

One INMETCO Drive  
Ellwood City, PA 16117  
Tel: 724-758-2800  
Fax: 724-758-2845  
www.inmetco.com

**RETRIEV Technologies, Inc.**

265 Quarry Road  
 Lancaster, OH 43130  
 Tel: 877-461-2345  
 Fax: 740-653-3240 [www.retrievtech.com](http://www.retrievtech.com)

**Umicore Group**

3600 Glenwood Ave, STE 250  
 Raleigh, NC 27612  
[mark.caffarey@am.umicore.com](mailto:mark.caffarey@am.umicore.com)  
 Tel: 919-874-7175  
<http://pmr.umicore.com/en/batteries>

**For Canada****Li-Cycle Corp.**

2351 Royal Windsor Drive, Unit 10, Mississauga, ON (HQ)  
 1-877-542-9253  
 Stefan Hogg

**Lithion Recycling Inc.**

Jean-Talon East, suite 410  
 Anjou (Québec) H1M 3S3  
 +1 514 353-4008  
 Jean-Christophe Lambert

**RETRIEV Technologies, Inc.**

9384 Highway 22A  
 PO Box 232  
 Trail, B.C, Canada V1R4L5  
 Tel: 877-468-6926 Fax:  
 250-367-9875  
[www.retrievtech.com](http://www.retrievtech.com)