



...Value-Added Solutions through Customized Recycling

# CHALLENGES WITH BATTERY MANAGEMENT

MARCH 2019

# Introduction

- *Popular Battery Types*
- *Regulatory Requirements*
  - *Universal Waste Rule*
  - *DOT Requirements*
  - *OSHA - HAZCOM*
- *Best Practices – Fire Preparedness and Prevention*
- *Economics*
- *About Powerhouse Recycling*

# Popular Battery Types

- *Alkaline*
- *Lead Acid Batteries*
- *Nickel Cadmium*
- *Nickel Metal Hydride*
- *Lithium Ion and Lithium Primary*

# Universal Waste Rule

40 CFR part 273 – Adopted by SC DHEC and NC DEQ

- Promotes Collection and Recycling
- Intended to reduce hazardous wastes in MSWLF's by easing the regulatory burden for collectors and transporters
- Encourages development of municipal and commercial programs to collect
- Ensures these wastes go to appropriate recycling and treatment facilities

Source: [epa.gov/hw/universal-waste](http://epa.gov/hw/universal-waste)

# Universal Waste Rule

- **Small Quantity Handlers**
- **Large Quantity Handlers**
- Universal Waste Transporters
- Universal Waste Destination Facilities

Source: [epa.gov/hw/universal-waste](http://epa.gov/hw/universal-waste)

# Universal Waste Rule

## Summary of Requirements

- Can store for one year
- Not required to ship with a manifest
- U/W's do not need to be counted toward a H/W generators category
- Must manage U/W in a way that prevents releases to the environment
- Labeling requirements
- Respond to releases
- Transport to a facility that is permitted or otherwise designated for receiving, like a recycler

Source: [epa.gov/hw/universal-waste](http://epa.gov/hw/universal-waste)

# DOT - PHSMA

## **Mission**

- Protect people and the environment by advancing the safe transportation of energy and other hazardous materials
- Establishes National Policy
- Sets and Enforces Standards
- Educates, and conducts research to prevent incidents
- prepare the public and first responders to reduce consequences if an incident does occur

Source: <https://www.phmsa.dot.gov/about-phmsa/phmsas-mission>

# DOT PHMSA

- CFR 49 Subchapter C Hazardous Materials Regulations
- 49 CFR 173.159, 173.159a – U.S. Lead Acid Battery Regulations
- 49 CFR 172.102 Special Provisions 130 and 140 - dry cell batteries and Nickel Metal Hydride Batteries
- 49 CFR 173.185 – U.S. Lithium Battery Regulations
- 49 CFR 173.21(c) – Prohibition of transport w/o proper packaging to prevent a dangerous quantity of heat/sparks



# DOT PHMSA

- DOT – PHMSA regulations apply to anyone transporting hazardous materials including batteries.

Source: <https://www.phmsa.dot.gov/about-phmsa/phmsas-mission>

# DOT PHMSA

Summary of Requirements (applicable to regional/national transportation)

- Specific packaging requirements
- Marking/Labeling requirements
- Shipping documents
- Protection against short circuits and dangerous quantity of heat

# OSHA HAZCOM

## Summary of Requirements – 29 CFR 1910.1200

- Prepare and Implement a Written Hazard Communication Program
- Ensure Containers are Labeled
- Maintain Safety Data Sheets Inform and Train Employees
- Periodically evaluate and Reassess Your Program

# Best Practices

- Fire prevention is key! Most studies seem to conclude that a typical ABC rated extinguisher will be effective due to its “C” rating while some suggest that “D” rated extinguishers are required.
- Cover contacts of all kinds of batteries (except common household alkaline) with a durable tape such as packing tape to prevent arcing.
- Store all batteries in and devices containing batteries in a cool, dry, ventilated area away from sources of heat and moisture, below 130 degrees F. and away from incompatible materials (consult safety data sheet). Never leave batteries in direct sunlight or high heat and don’t store them with conductive materials. Don’t mix different kinds of batteries. Don’t allow smoking or eating in battery storage areas.
- For Lithium batteries that are damaged or bloated, pack one battery per container (box/pail) in a substance such as vermiculite (non-combustible non-flammable) to prevent shock (bumping) during transit. Devices containing a bloated battery should also be packed in the same manner.

# Economics

- Some batteries hold positive value due to recoverable metals while others don't and require a fee or no payment option to offset associated costs.
- If presented with inordinate fees for ALL batteries, consider another vendor.

# Powerhouse Recycling Inc.

- *Certified Electronics Recycling and IT Asset Management*  
(e-Stewards, R2, ISO 14001, OSHAS 18001)
- *Est. 2008*
- *Salisbury, NC Facility – 130K sq. ft.*
  - *Certified Electronics Recycling*
  - *ITAD – Asset Management*
  - *Data Destruction Services*
  - *On-Site Hard Drive Shredding*
  - *Customized Freight and Logistics*
  - *Warehousing Solutions*
  - *Full Service Pick-Ups – Including White Glove Services*
  - *NC 926C State Contract Level A and B*



Thank You!

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