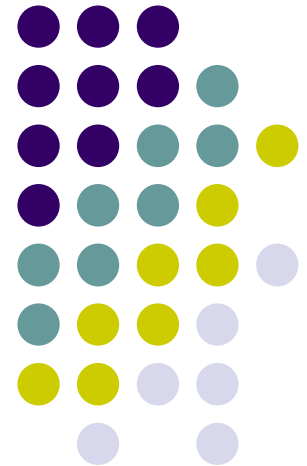


Quantifying the Advanced Battery Recycling Challenge and Market Opportunity

**Presented by Steve Pledger
Metal Conversion Technologies, LLC**



Metal Conversion Technologies, LLC

Who we are!



- Over 25 years experience in the Battery Recycling Industry
- The combined knowledge of Chemical Engineering, Mechanical Engineering and the steel industry have made us a leader in the Battery Recycling Industry.
- We work with many leading manufactures to establish an end of life plan.

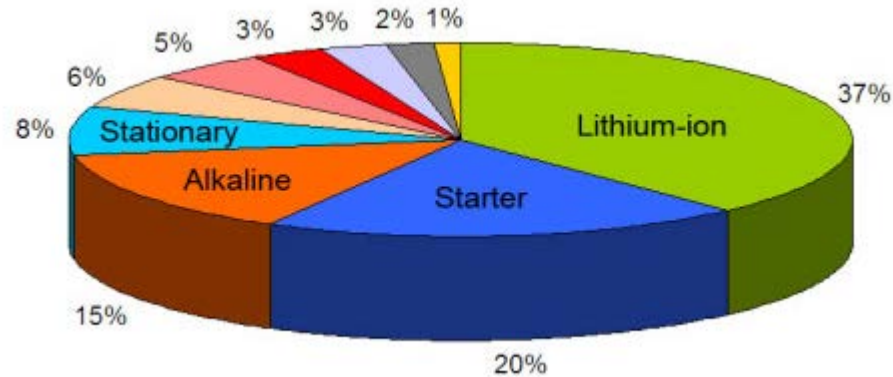
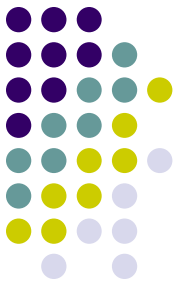
Overview

Challenges in todays market



- Change in chemical composition
- Safety Concerns
- Regulatory

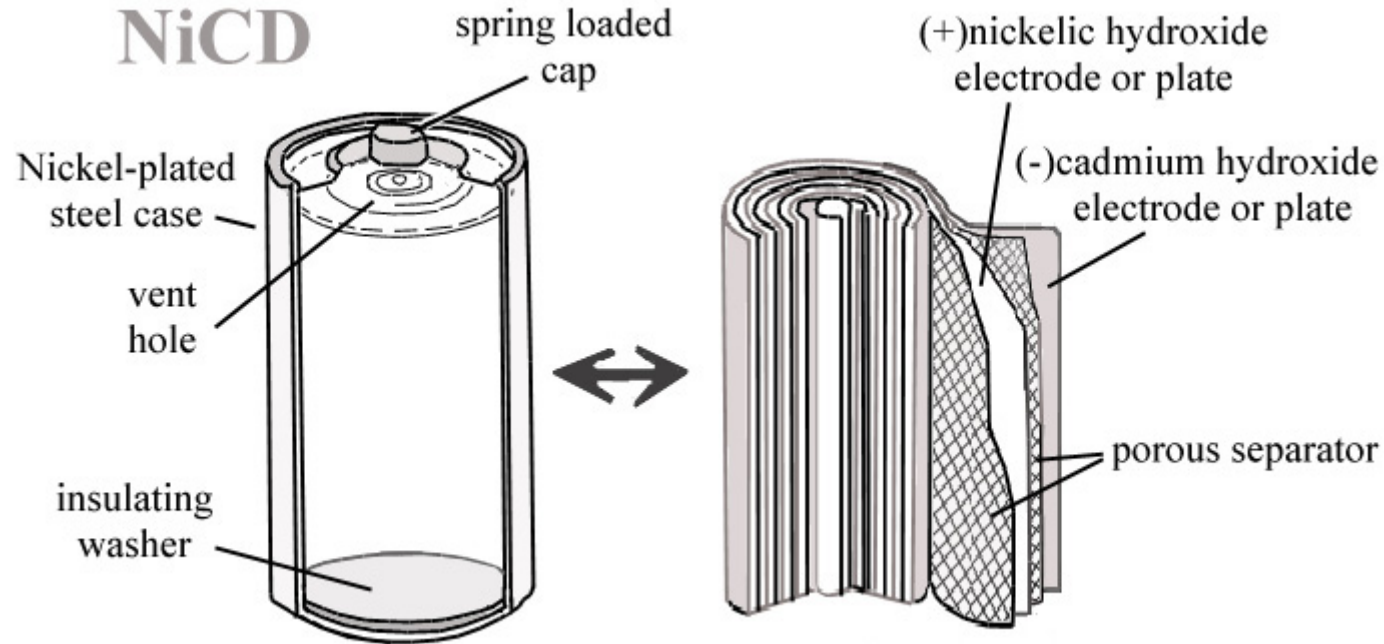
Current Market Share



Revenue contributions by different battery chemistries

- 37% Lithium-ion
- 20% Lead acid, starter battery
- 15% Alkaline, primary
- 8% Lead acid, stationary
- 6% Zinc-carbon, primary
- 5% Lead acid, deep-cycle
- 3% Nickel-metal-hydride
- 3% Lithium, primary
- 2% Nickel-cadmium
- 1% Other

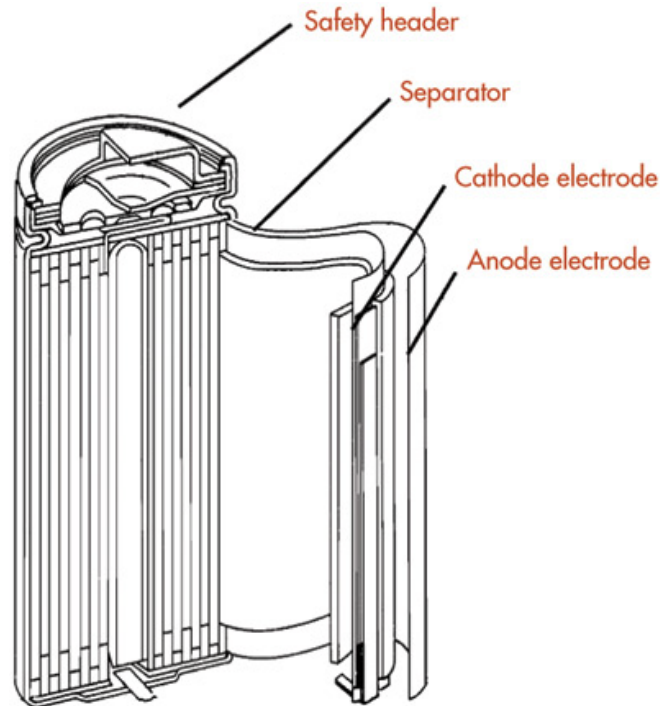
Nickel Based Batteries



Commodities recycled into:

- Nickel Re-melt Alloy
- Cadmium Oxide

Lithium Ion Batteries



Commodities recycled into:

- Cobalt Re-melt Alloy
- Metal Concentrates

Lithium Polymer (Other Lithium Chemistries)

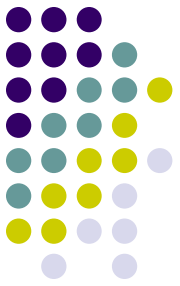


- Ultra thin
- High-density, from 1,350mAh to 3,400mAh
- Change in chemical composition
- New safety concerns
- New regulations



Safety Concerns

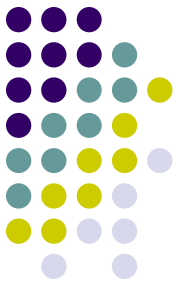
(Lithium Metal And Lithium Polymer Batteries)



- Highly prone to fire and explosions
- Mishandling during decommission of electronics
- Built in and not designed to be removed
- Improper packaging and transporting
- Public is not well informed of the volatility of the material

Regulatory

(Lithium Metal And Lithium Polymer Batteries)



- U.S. D.O.T. regulations
- International Fire Code – I.F.C.

Recap



Recycling Market is becoming impacted by:

- Less valuable material to recycle back into commodities
- Safety Concerns during dismantling electronics, packaging of material and transportation
- Public is unaware of volatility
- Regulatory agencies are making it harder to economically recycle material

Thank You



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