Industry Initiatives

Mark Kohorst
Senior Manager
Environmental, Health and Safety
NEMA
Overview

• Five-Pronged Strategy to Lithium Battery Ingestion:
  ▪ Education/Outreach
  ▪ Battery Compartment Design
  ▪ Battery Design
  ▪ Warning Copy
  ▪ Packaging
Education/Outreach

Stacey Harbour
Director of Marketing
Energizer
Education/Outreach

- **Medical Community Education**
  - Joint NEMA/National Capital Poison Center (NCPC) letter to pediatricians via American Academy of Pediatrics (AAP) (9/11)
  - Joint NEMA/NCPC letter to emergency physicians via American College of Emergency Physicians (ACEP) (8/11)
  - Test and share results with NCPC on mechanism of injury and x-ray analysis
Education/Outreach

• **Consumer Education**
  - Provide funding to the National Capital Poison Center (NCPC) and the hotline
  - Individual company grassroots efforts

• **Supply Chain Initiatives**
  - Educate and share information with Trilateral Group comprised of U.S., European, and Japanese battery manufacturers

• **Standards Participation**
  - Participate in numerous U.S. and global standards to develop recommendations for warning copy, testing, and securing button cell battery compartments
Battery Compartment Design

Marc Boolish
Manager of Product Safety, Standards and Environmental Affairs
Energizer
Battery Compartment Design

• NEMA contacts/letters to
  ▪ Consumer Electronics Association (CEA)
  ▪ Greeting card makers
  ▪ OEMs

• ANSI/IEC recommendations for battery compartments

• Individual company considerations to secure lithium coin device compartments (not just toys)
Battery Compartment Design

- NEMA participation in CEA/UL effort for battery compartment enclosure (UL 60065 Ed. 7)

Add new clause 21 - COIN / BUTTON CELL BATTERIES

1.21 COIN / BUTTON CELL BATTERIES

1.21.1 Construction

Apparatus shall be designed to prevent children from removing the battery by one of the following methods:

a) A tool, such as a screwdriver or coin, is required to open the battery compartment; or

b) The battery compartment door / cover requires the application of a minimum of two independent and simultaneous movements of the securing mechanism to open BY HAND.

If screws or similar fasteners are used to secure the door/cover providing access to the battery compartment, the fasteners shall be captive to ensure that they remain with the door/cover.
Battery Design

Dr. Steve Wicelinski
Consumer Product Safety Officer
Duracell
Battery Design

• Button cell and coin cell batteries have been around for several decades
  • Large installed base
• Design is predicated on device power requirements and available space
• NEMA supports efforts to evaluate potential design modifications that may reduce ingestions
• To date, technical feasibility still a major issue
Warning Copy

Michael Babiak
Director of Technology
Product Technical Support
Energizer
Warning Copy

• Reviewed with standards bodies
  ▪ ANSI C18 Committee on Portable Dry Cell Batteries
  ▪ IEC TC 35 Technical Committee on Primary Dry Cell Batteries

• Started discussions to consider the inclusion of boilerplate standard warning copy for lithium coin cells in above standards (must account for UL requirements as well)
Warning Copy

- Consideration and/or implementation of changes to warning copy to improve hazard description and hazard mitigation

1) KEEP OUT OF REACH OF CHILDREN. Swallowing may lead to serious injury or death. Severe burns can occur within 2 hours of ingestion. Immediately see doctor, have doctor phone (202) 625-3333 collect. Keep in original package until ready to use. Dispose of used batteries immediately. Risk of injury due to fire, explosion or leakage. Do not disassemble, charge, crush or expose to fire or high temperatures.

LITHIUM COIN CELL SAFETY NOTICE: Keep lithium coin batteries out of the reach of small children; coin cell batteries can be accidentally ingested. If ingested, these batteries may leak harmful contents causing chemical burns, perforation of soft tissue, and in severe cases may cause death. Lithium coin batteries must be removed immediately if swallowed. Seek medical attention immediately. If you or your doctor suspects that a battery has been ingested-for assistance in the US call the NATIONAL BATTERY INGESTION HOTLINE any time at (202) 625-3333: in Canada call 416-813-5900.

- Championed work to start and continue development of a “keep out of reach of children” pictogram, circumstantially linked to IEC TC 35 work on safety pictograms
Packaging

Kevin Domack
Corporate Director, EHS
Rayovac
Packaging

• Ongoing independent company evaluations on child resistance
• Clear warning; prominent position; bold
• Source of battery*

<table>
<thead>
<tr>
<th>Source</th>
<th>&lt; 6 years old (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery obtained directly from product</td>
<td>61.8</td>
</tr>
<tr>
<td>Loose or sitting out</td>
<td>29.8</td>
</tr>
<tr>
<td>Battery packaging</td>
<td>8.2</td>
</tr>
</tbody>
</table>

Thank You

• Open Discussion/Q&A