



Lithium Batteries

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Lithium batteries



Lithium metal batteries

- Also called primary lithium batteries
- Non-rechargeable (generally)
- Regulated based on lithium metal content in grams
- Used to power watches, calculators, cameras etc.



Lithium ion batteries

- Also called secondary lithium batteries
- Rechargeable
- Regulated based on Watt-hour rating
- Used to power mobile phones, laptop computers, etc.

Lithium metal or Lithium ion



On their own

- **Lithium metal batteries (UN 3090)**
- **Lithium ion batteries (UN 3480)**



Packed with equipment

- **Lithium metal batteries packed with equipment (UN 3481)**
- **Lithium ion batteries packed with equipment (UN 3481)**



Contained in equipment

- **Lithium metal batteries packed with equipment (UN 3091)**
- **Lithium ion batteries packed with equipment (UN 3091)**



Potential risks

- Video

Classification Levels

Section IA

Section IB

Section II



Portable electronic devices (PEDs) — Passengers and Crew

- PEDs should be carried in cabin
- Spares must be carried in cabin
- Lithium metal: lithium content ≤ 2 grams
- Lithium ion: Watt-hour rating ≤ 100 Wh
- Unintentional activation in checked baggage
- Spares must be protected against short circuit
- UN testing requirements

Other Risks

- Non-compliant shippers
- Counterfeit batteries
- Large batteries
- Regulatory complexity
- Lack of training
- Lack of oversight
- Fire suppression systems

Lithium Metal — Ban?

- Ban lithium metal from passenger and cargo aircraft?
- Permit when packed with or contained in equipment and when carried by passengers and crew?
- Current bans in one State and by several operators

Lithium Metal — More Restrictions?

- Permit on passenger and cargo:
 - Fully regulate all batteries
 - Reduce quantities permitted
 - Limit quantities in cargo hold

Future Work

- Data
- Simplification of regulations
- Better hazard communication
- Packaging performance standards
- Fire suppression systems
- Multidisciplinary
 - Battery manufacturers
 - Regulators
 - Aircraft manufacturers



Contact Details

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