

2016 R&D Forum Break-out Session

Lithium battery small group

Attendance:

- Veda Bharath – PHMSA/OHMS, R&D branch (Facilitator)
- Daphne Fuentesvilla – NSWC Carderock
- Rick Bornhorst – FAA and TRB-Committee on the Transportation of Hazardous Materials (AT040)
- Keith Friedman – Friedman Research Corporation
- Marc Casas-Coredero – Transport Canada, via telephone

Main discussion themes:

1. Testing protocols and scope
 - During shock testing where on the package is the shock/impact actual measured?
 - There is a need for more non-static testing protocols to mimic real world situations for packaging integrity
2. Compiling and acquiring relevant data
 - There is a need for experimental data and case data to reliably assess package conditions and integrity
 - Is there a way to get more information on enforcement and compliance of existing rules for Li-ion transportation?
 - A good start is to begin compiling impact-data from Transport Canada and FAA/Cal Poly study
 - Shock and impact test data for non-Li-ion packaging can also be useful
3. Health monitoring of Li-ion packages
 - Possibly similar to radioactive package monitoring
 - How possible or practical or useful?

Possible RNS topics:

1. Need for complete shock related data for lithium battery transport from pick-up to transportation to distribution. A synthesis study is needed to compile all data
2. A series of shock testing to replicate extreme accident scenarios and outcomes
3. Packaging risk profile to be derived from data for package integrity
4. Continuous quality survey to deduce information for all battery packages including foreign manufactures. This information includes what is being transported and how it is being packages. This will also confirm manufacturer compliance
5. Best practices for electronics manufacturers (e.g. makers of e-cigarettes and hover boards) to not design products that put power sources into a direct risk of failure