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NEWSLETTER

# New International Transportation Rules for Lithium Metal Batteries on the 2014 Agenda

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More international attention to lithium metal battery air transportation regulations will be considered early this year as a result of testing data recently presented by the Federal Aviation Administration (FAA) at an International Civil Aviation Organization (ICAO) Dangerous Goods Panel meeting in Montreal and International Fire & Cabin Safety Research Conference in Philadelphia. Any changes could have significant implications for the medical and oil industries, the military, and e-commerce.

Most of the test data resulted from FAA's significant investment in 2013 in conducting flammability tests on packages of CR123A lithium metal batteries. These types of lithium batteries are used in a variety of consumer, medical, and military applications. The agency also tested for the first time D cell lithium thionyl chloride batteries, which are used in many industrial applications (*e.g.*, oil wells and water meters).

FAA first conducted tests on 4,800 CR123A batteries in a Class E cargo hold of an aircraft with no fire suppression system. The second set of tests was conducted on another 4,800 CR123A batteries in a Class C cargo hold with a Halon 1301 fire suppression system. Ceiling temperatures of approximately 1700° F and battery fire temperatures of approximately 2250° were recorded during the tests.

Furthermore, oxygen starvation during the Class E cargo hold test had little or no effect on fire intensity. And during the Class C cargo hold test, Halon suppressed the cardboard and electrolyte fire but thermal runaway continued to propagate between boxes despite the Halon and extremely low oxygen levels.

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In response to FAA's testing, the secretary of the ICAO Dangerous Goods Panel has proposed new restrictions on air transportation of lithium metal batteries. The panel will hold meetings in February and April to consider them. The proposed changes may include a ban on shipping lithium metal batteries as cargo on passenger aircraft (similar to the one in effect in the U.S.), elimination of all exceptions for lithium metal batteries shipped by air, more robust packaging requirements and limitations on the quantity of lithium metal batteries that may be transported in the cargo hold of passenger and/or cargo aircraft.