



Dangerous Goods Advisory Circular DGAC 2/2004

Extreme Hazard of Lithium Battery Fire

A recent laboratory test conducted by the U.S. Department of Transport Federal Aviation Administration revealed that lithium battery, which is commonly used in consumer electronic products, can be extremely dangerous if they catch fire onboard aircraft. In short, a lithium battery fire could burn through a cargo hold and breach all defenses. For general information, some of key findings are listed below: -

- i) A relatively small fire source is sufficient to start a lithium battery fire;
- ii) Once a single lithium battery begins to burn, it is hot enough to ignite adjacent batteries;
- iii) Molten lithium battery burns explosively with peak temperature reaching 1400 °F (as a reference, melting point of aluminum is around 1200 °F);
- iv) Fire suppression agent commonly used in aircraft, such as Halon 1301, proved totally ineffectively in suppressing or extinguishing a lithium battery fire;
- v) Molten lithium could perforates cargo compartment liner material; and
- vi) The ignition of lithium battery could release a pressure pulse strong enough to compromise the integrity of cargo compartments.

This Dangerous Goods Office believes that some lithium batteries (sometimes up to thousands in a consignment) could be wrongly consigned for air transport in Hong Kong as non-restricted cargo under the name “Batteries Dry” or others wrongly carried by passengers inside baggage. Now knowing the extreme hazard of lithium battery fire, we hereby remind operators that: -

- i) Vigilance must be exercised in accepting non-restricted cargo consignment claimed to be “Batteries Dry” and lithium battery carried by passengers;

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- ii) For lithium battery consignment, only those satisfying Special Provisions A45 under ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air (TI) can be transported as non-restricted air cargo;
- iii) Lithium battery consignment **NOT** satisfying Special Provisions A45 must be transported as dangerous goods with full compliance of the provisions of ICAO TI especially Packing Instructions PI903; and
- iv) All other lithium battery consignments that are not in compliance with the provisions of ICAO TI are forbidden for air transport.

Should you have any query about this circular, please contact Safety Officers (Dangerous Goods) Ms Cecilia PANG at 2182 1214 or Mr. Eric CHIM at 2182 1221.

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