

LP BULLETIN

Friday 31 August 2007

Bulletin 540 - 08/07 - Transport hazard concerns over lithium batteries - Worldwide

Air transport representatives have raised concerns about the safety of lithium batteries, requesting reclassification from Class 9 to Class 4.3.

A supporting paper outlined thirty-two incidents in which lithium batteries combusted on aircraft or in airports. Batteries have combusted when transported as packed cargo and when installed in equipment and millions of defective units have in the past been recalled.

Lithium batteries can provide extremely high currents and can discharge very rapidly when short-circuited. Although this is useful in applications where high currents are required, too-rapid a discharge of a lithium battery can result in overheating of the battery, rupture, and even explosion. Lithium-thionyl chloride batteries are particularly capable of this type of discharge. Lithium batteries may also cause fire due to an explosive rupture of the body caused by improper construction or reaction with contaminants.

Lithium batteries are listed in the International Maritime Dangerous Goods (IMDG) Code under class 9 – miscellaneous dangerous substances and articles. Under this classification, batteries can be stowed above and below deck, and with other dangerous goods commodities.

If lithium batteries were reclassified under the IMDG Code to class 4.3 - flammable solids (which, when in contact with water emit flammable gases), they would be subject to much more stringent segregation requirements.

Members are encouraged to ensure that, when accepting shipments of lithium batteries or equipment containing lithium batteries, their clients, as shippers, are fully aware of the packing requirements laid out in instruction P903 of the IMDG Code. The majority of incidents involving lithium batteries in containers on board merchant ships, as handled by the UK Club, are a direct result of poor packaging or wetting of the batteries.

Packaging for lithium batteries needs to meet the general provisions of 4.1.1 and 4.1.3 of the Code and must conform to the packing group II performance level.

In addition, batteries with a strong, impact resistant outer casing of a gross mass of 12 kg or more, and assemblies of such batteries, may be packed in strong outer packaging, in protective enclosures (e.g., in fully enclosed or wooden slatted crates) unpackaged or on pallets. Batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements.

When lithium cells and batteries are packed with equipment, they shall be packed in inner fibreboard packaging that meet the provisions for packing group II. When lithium cells and batteries included are contained in equipment, the equipment shall be packed in strong outer packaging in such a manner as to prevent accidental operation during transport.

Batteries shall also be protected against short circuit.

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