INTERNATIONAL LITHIUM BATTERY REGULATIONS

The regulations applicable to international air shipments of lithium batteries have changed. Compliance with the new regulations becomes mandatory **January 1, 2013.**

Note: In the U.S., new regulations governing the shipment of lithium batteries are expected to be published in December 2012. Readers of this information are urged to monitor the work of the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) for up to date information. See PHMSA's website at the following address: http://hazmat.dot.gov

Shipping Lithium Batteries by International Air Service

Please use the following information as a general guide only, all shippers are required to understand and comply with the applicable regulations pertaining to their domestic and international shipments. Full international air regulation information is published by the International Air Transport Association (IATA) and can be found at: http://www.iata.org/whatwedo/cargo/dangerous_goods/Pages/lithium_batteries.aspx

When lithium batteries of relatively small electrical capacity are shipped in small quantities in accordance with the regulations, packages are not fully regulated as Dangerous Goods and do not require a UPS Dangerous Goods contract.

This guide is for illustrative purposes only. Please reference IATA regulations when shipping lithium metal or lithium ion batteries or cells: http://www.iata.org/whatwedo/cargo/dangerous_goods/Pages/lithium_batteries.aspx

Lithium Battery Types

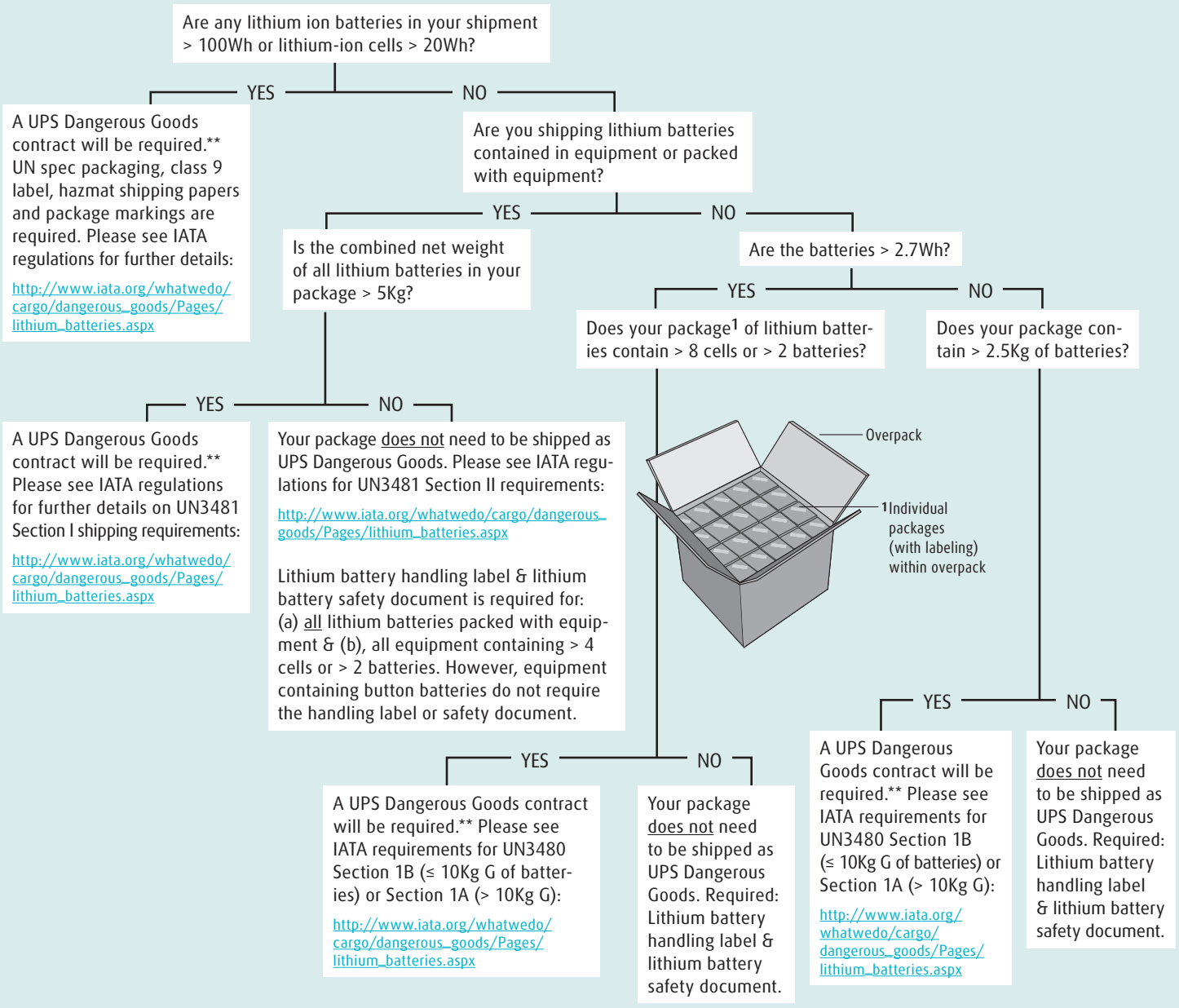
There are two major kinds of lithium batteries, both of which contain very high levels of energy:

- Lithium ion batteries are *rechargeable.*
  - — Sometimes called "secondary lithium batteries"
  - — These batteries are often found in common electronic devices such as cell phones and laptops
- Lithium metal batteries are generally *non-rechargeable.*
  - — Sometimes called "primary lithium batteries"

© 2012 United Parcel Service of America, Inc. UPS, the UPS brandmark and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved. 6/12

LITHIUM ION BATTERY SHIPMENTS

Figure 1
Is my international Lithium Ion Battery shipment fully regulated so that it requires UPS Dangerous Goods service?*



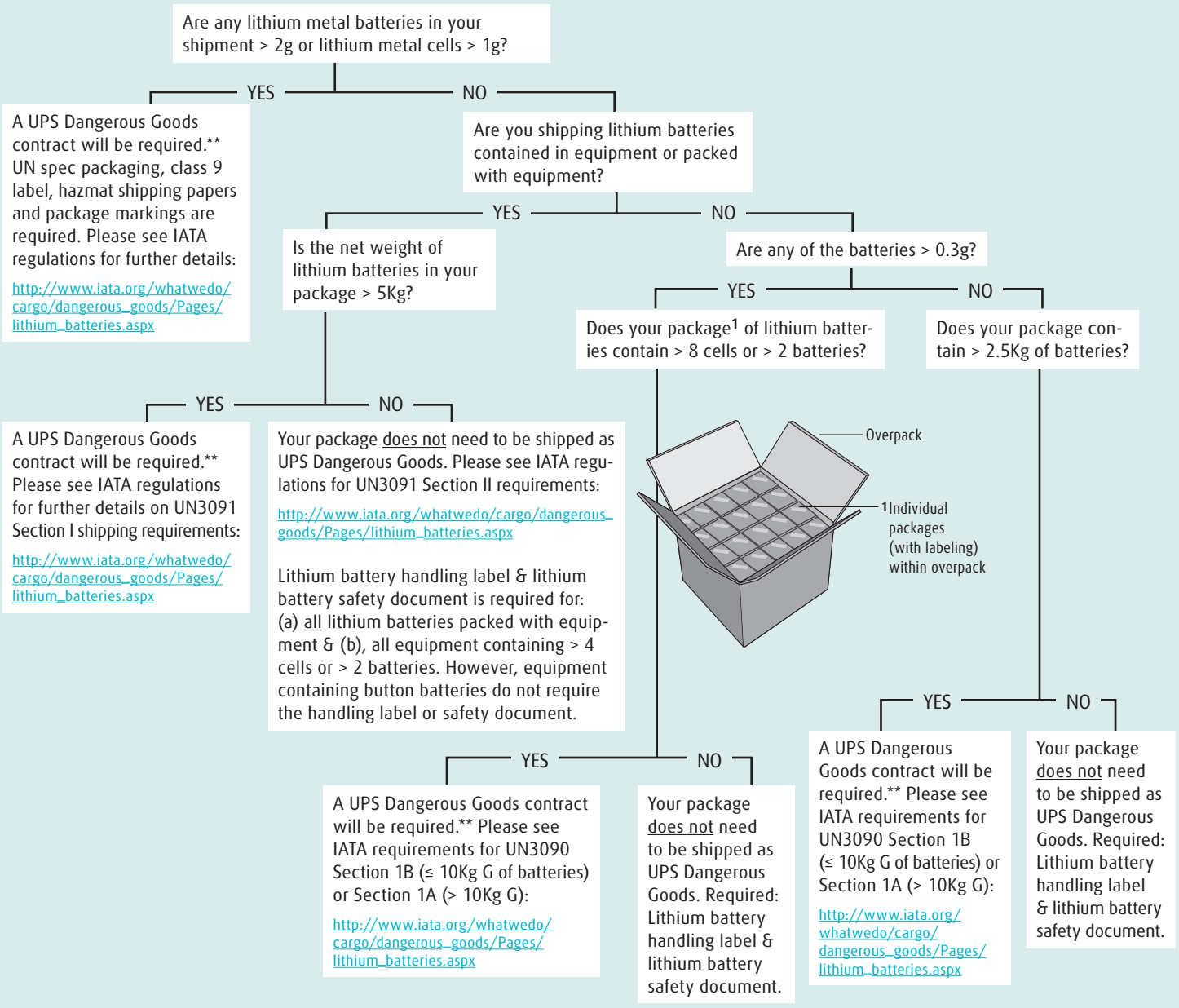
** Packaging for **all** shipments of lithium batteries must be able to withstand a 1.2 meter drop test and all batteries must be packed to eliminate the possibility of a short-circuit or activation. Do not use envelopes or any other soft-sided packs.*

*** Contracts are required for UPS Small Package and UPS Air Cargo® services but not UPS Air Freight hazmat shipments; please contact your customer representative for details.*

© 2012 United Parcel Service of America, Inc. UPS, the UPS brandmark and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved. 6/12

LITHIUM METAL BATTERY SHIPMENTS

Figure 2
Is my international Lithium Metal Battery shipment fully regulated so that it requires UPS Dangerous Goods service?*



** Packaging for **all** shipments of lithium batteries must be able to withstand a 1.2 meter drop test and all batteries must be packed to eliminate the possibility of a short-circuit or activation. Do not use envelopes or any other soft-sided packs.*

*** Contracts are required for UPS Small Package and UPS Air Cargo® services but not UPS Air Freight hazmat shipments; please contact your customer representative for details.*

© 2012 United Parcel Service of America, Inc. UPS, the UPS brandmark and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved. 6/12

INTERNATIONAL LITHIUM BATTERY REGULATIONS

FAQs

What are some ways I can help prevent a short-circuit or activation of lithium batteries in my shipment while in transport?

One of the major risks of shipping lithium batteries is short-circuit of a battery or inadvertent activation while in transport. All batteries should be packed to eliminate the possibility of a short-circuit or activation. Ensure no batteries can come in contact with other batteries, conductive surfaces or metal objects while in transport. IATA recommends packing each battery in fully enclosed inner packaging made of non-conductive material (e.g., plastic bags) and ensuring that exposed terminals or connectors are protected with non-conductive caps or tape or by other similar means. They also recommend securely cushioning and packing batteries to prevent shifting during transport or loosening of terminal caps. Do not use envelopes or any other soft-sided packs. Please see the IATA site for additional tips and guidance: http://www.iata.org/whatwedo/cargo/dangerous_goods/Documents/Guidance-Document-on-the-Transport-of-Li-Batt-2012-V1.1.pdf

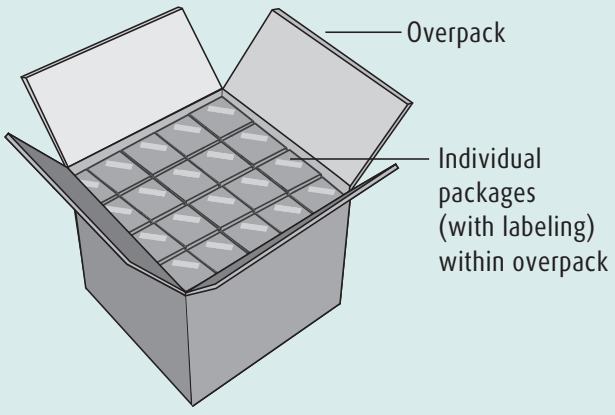
Do the quantity limits on cells and batteries apply to the overpacks?

No, the limits apply only to the package(s) within the overpack provided they comply with the necessary packaging requirements (such as the ability to withstand a 1.2 meter drop test). The overpack may exceed the specified limits but must be marked with the word "overpack" and labeled with the appropriate lithium battery handling label.

For the purposes of the regulation, what is considered the "package"?

The shipping limits do not apply to the overpack, only the packages within. See Figure 3 below. The packages must be marked and labeled as required by packing instructions.

Figure 3



What does the abbreviation "Wh" mean?

"Wh" stands for "watt-hour". It is a measure used to indicate the energy capacity of a cell or battery.

What does the abbreviation "IATA" mean?

IATA is the International Air Transport Association. It is a global trade organization that develops commercial standards and publishes the *Dangerous Goods Regulations*, containing standards for the international transport of dangerous goods by air.

What is a "button battery"?

A button battery is a small round battery where the height is less than the diameter[1] also commonly referred to as 'coin batteries'. Examples can be found in watches, calculators, electronic clocks, toys and other applications.

What is a "cell" versus a "battery" under this regulation?

- A *battery* is one or more cells electrically connected together by permanent means, including case, terminals, and markings.

  Note: "battery packs", "modules" or "battery assemblies" are treated as batteries under this regulation.

- A *cell* is a single encased electrochemical unit. It has one positive and one negative electrode that exhibit a voltage differential across its two terminals.[1]

  Note: Many cells can be termed "battery" or "single cell battery" in common conversation, but under this regulation a single cell must use the requirements related to "cells" only. Examples of a "cell" would be a CR123 primary lithium cell used for cameras and flashlights.

1 Source: "IATA Guidance Document: Transport of Lithium Metal and Lithium Ion Batteries." IATA. 2012. Web. 8 May 2012. http://www.iata.org/whatwedo/cargo/dangerous_goods/Documents/Guidance-Document-on-the-Transport-of-Li-Batt-2012-V1.1.pdf

© 2012 United Parcel Service of America, Inc. UPS, the UPS brandmark and the color brown are registered trademarks of United Parcel Service of America, Inc. All rights reserved. 6/12