



3714 Kinnear Place
Saskatoon, SK S7P 0A6
Canada

www.startco.ca

GUIDE TO PACKAGING AND SHIPPING R101-B EYE ON THE HOG BATTERY PACKS TO COMPLY WITH JANUARY 2009 PACKAGING REQUIREMENTS

As of January 2009 Lithium batteries are considered hazardous material for the purposes of air transport because of the possibility of fire if they are damaged. The International Air Transport Association (IATA) provides packing instructions (PI's) for packaging hazardous materials for shipment by air. PI 968 and 970 apply to R101-B's. PI 968 applies to battery packs shipped without handles. PI 970 applies to battery packs shipped with handles.

The R101-B is made up of 4 Panasonic CR2477 Manganese Dioxide Lithium coin cells. IATA considers the finished product including the four CR2477 cells, the battery carrier and the associated equipment to be a single battery.

PACKING INSTRUCTION 968

This instruction applies to packaging loose batteries (R101-B).

R101-B batteries that are identified as being defective for safety reasons are forbidden for transport.

Batteries must be packed in strong outer packaging. Batteries must be packed in inner packaging that completely encloses the cell or battery. Batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging that could lead to a short circuit.

Each package must be capable of withstanding a 1.2 m drop test in any orientation without:

- damage to batteries contained therein;
- shifting of the contents so as to allow battery to battery contact;
- release of contents.

Each consignment must be accompanied with a document such as an air waybill with an indication that:

- the package contains lithium metal cells or batteries;
- the package must be handled with care and that a flammability hazard exists if the package is damaged;
- special procedures should be followed in the event the package is damaged, to include inspection and repacking if necessary; and
- a telephone number for additional information (306-373-5505).

Each package must be labeled with a lithium battery handling label see Figure 1. Figure 2 shows an example of appropriate packaging.

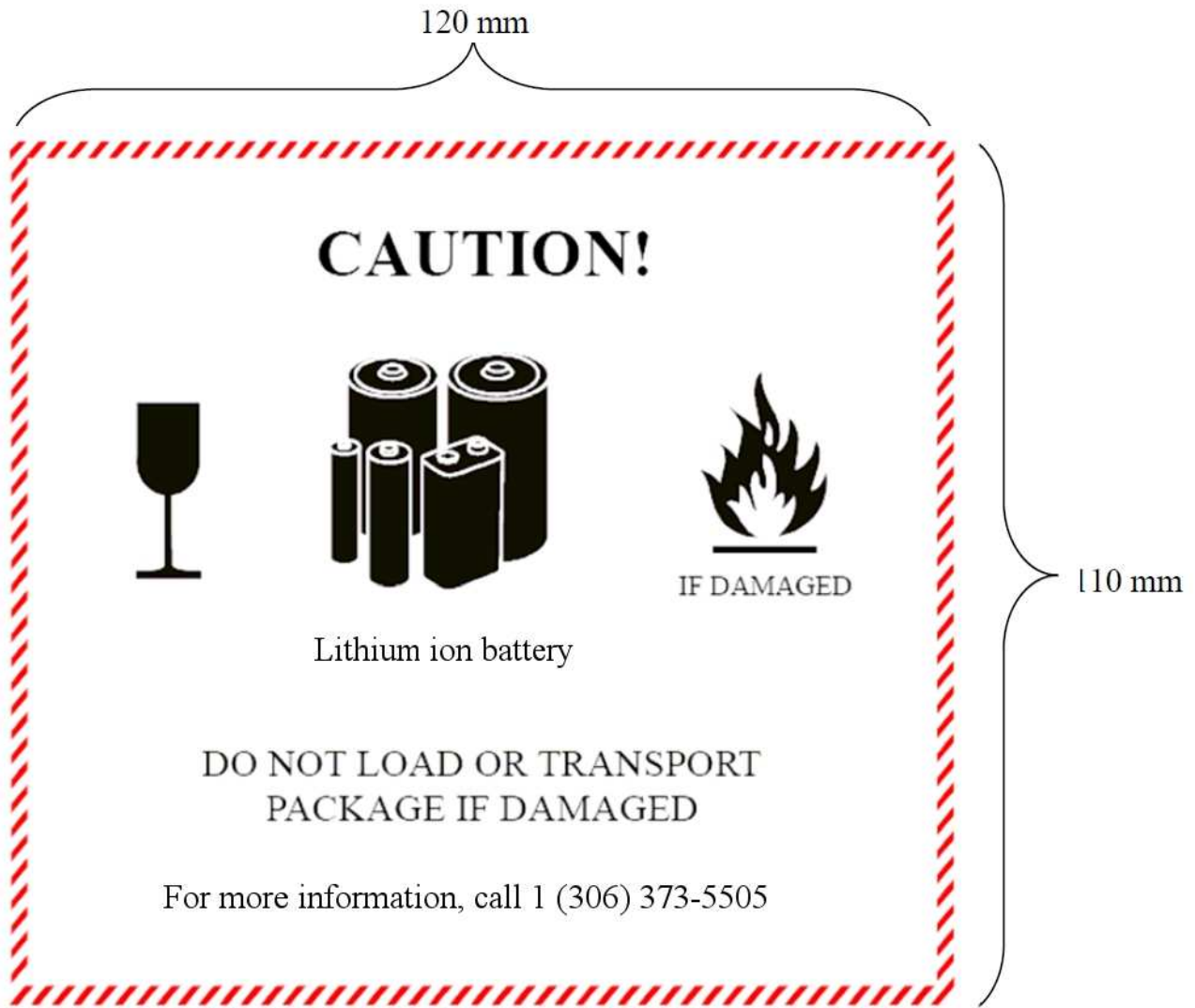


FIGURE 1. Lithium Battery Warning Label [1].



FIGURE 2. Lithium Battery Packaging Example [1].

Overpacks

Individual packages complying with the requirements of above may be placed in an overpack. The overpack may also contain packages of dangerous goods or goods not subject to these regulations provided that there are no packages enclosing different substances which might react dangerously with each other. An overpack must be marked with the word "Overpack" and labeled with the lithium battery label (see Figure 1), unless the label(s) on the package(s) inside the overpack are visible.

Individual packages must not weigh more than 2.5 kg.

Any person preparing or offering batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

PACKING INSTRUCTION 970

This instruction applies to lithium metal or lithium alloy batteries contained in equipment (R101-HSC with batteries included).

R101-B batteries that are identified as being defective for safety reasons are forbidden for transport.

Equipment containing batteries must be packed in strong outer packaging. The equipment must have an effective means of preventing accidental activation (unplugged from the handle is sufficient). Batteries must be protected so as to prevent short circuits.

Each package containing more than one battery installed in equipment must be labeled with a lithium battery handling label (see Figure 1). Each consignment with packages bearing the lithium battery handling label must be accompanied with a document such as an air waybill with an indication that:

- the package contains lithium metal cells or batteries;
- the package must be handled with care and that a flammability hazard exists if the package is damaged;
- special procedures should be followed in the event the package is damaged, to include inspection and repacking if necessary; and
- a telephone number for additional information (306-373-5505).

Overpacks

Individual packages each complying with the requirements of Part 1 may be placed in an overpack. The overpack may also contain packages of dangerous goods or goods not subject to these regulations provided that there are no packages enclosing different substances which might react dangerously with each other. An overpack must be marked with the word "Overpack" and labeled with the lithium battery label (see Figure 1), unless the label(s) on the package(s) inside the overpack are visible.

Any person preparing or offering batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

REFERENCES

- [1] IATA, *"Guidance Document Transport of Lithium Metal and Lithium Ion Batteries"*, Revised 11 February 2009.