



# BULLETIN



RDIMS #5872093  
July 2010

## Transporting Batteries

This bulletin is divided into 9 items and addresses batteries regulated under the Transportation of Dangerous Goods (TDG) Regulations.

- 1 – General Information on the TDG Act and Regulations
- 2 – Classification of Batteries
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### 1 – General Information on the TDG Act and Regulations

While many types exist, not all batteries are subject to the *Transportation of Dangerous Goods (TDG) Act* and Regulations. For example, common household-type alkaline, nickel cadmium (NiCad), nickel metal hydride (NiMH), and silver-zinc batteries are not classified as dangerous goods. Even some small lithium batteries, depending on the amount of lithium they contain, may also be exempt from the TDG Regulations. Although when batteries are shipped by air, they will have more requirements or even some restrictions. For example, even household type batteries must have the terminals protected from short-circuit.



*Household type batteries as dangerous goods.*

<sup>1</sup> The TDG Act was modified in June 2009. The term “permit for equivalent level of safety” was changed to “equivalency certificate”. Please note that Part 14 of the TDG Regulations does not yet reflect this change.

## 2 – Classification of Batteries

Some batteries are regulated as dangerous goods because they may pose hazards during transport. These hazards include:

- short-circuits, which can lead to fires; and/or
- leaks of corrosive liquid or other material that can injure people or damage property.

Most batteries are classified as class 8 – Corrosives. However, some may be classified as class 9 – Miscellaneous Products or class 4.3 – Water Reactive Substances. The manufacturer (i.e. consignor) is responsible for classifying the battery. Although Transport Canada can provide help in the classification process, we cannot classify a battery for you.

The table below provides a list of UN numbers for batteries. You can also find them in Schedule 1 of the TDG Regulations at: <http://wwwapps.tc.gc.ca/saf-sec-sur/3/sched1-ann1/schedule1form.aspx>

| UN #   | Shipping Name and Description   | Class | Packing Group |
|--------|---|-------|---------------|
| UN2794 | Batteries, Wet, Filled With Acid,   | 8     | III           |
| UN2795 | Batteries, Wet, Filled With Alkali,   | 8     | III           |
| UN2800 | Batteries, Wet, Non-Spillable,  | 8     | III           |
| UN3028 | Batteries, Dry, Containing Potassium Hydroxide Solid,                                   | 8     | III           |
| UN3090 | Lithium Batteries   | 9     | II            |
| UN3091 | Lithium Batteries Contained In Equipment; or<br>Lithium Batteries Packed With Equipment | 9     | II            |
| UN3292 | Batteries, Containing Sodium; or<br>Cells, Containing Sodium                            | 4.3   | II            |

*Please note there are some UN numbers, such as UN3480 and UN3481, that are not listed in the TDG Regulations, but are listed in the:*

- 49 CFR, UN Recommendations,
- International Civil Aviation Organization (ICAO) Technical Instructions and,
- International Maritime Dangerous Goods (IMDG) Code.

*Also, the shipping names for UN3090 and UN3091 are different in the latest versions of the ICAO Technical Instructions and the IMDG Code. These newer UN numbers can be used in Canada.*



# 3 – General Requirements for Shipping

## Documentation, Safety Marks, Means of Containment and Training Requirements

Unless exempt from the TDG Regulations through a special case, special provision or an equivalency certificate (i.e. formally known as permit), battery shipments must fully comply with the TDG Regulations. When shipping batteries by vessel or aircraft, you may also need to refer to the *ICAO Technical Instructions or the IMDG Code*. For more information, please refer to Part 11 and 12 of the TDG Regulations.

### Documentation – TDG Regulations, Part 3

The TDG Regulations require dangerous goods to have a shipping document that includes the information listed under section 3.5. The information includes, but is not limited to:

- name and address of the consignor;
- date;
- 24 hr telephone number; and
- a description of the batteries, including:
  - the UN number;
  - the shipping name;
  - primary and subsidiary class;
  - packing group; and
  - quantity.

There is no requirement to use a specific form. However, when shipping by aircraft, the shipping document must have, on the left and right margins, red hatchings that are oriented to the left or to the right. See image below.

The form is titled "SHIPPER'S DECLARATION FOR DANGEROUS GOODS" and is framed by red and white diagonal hatching on the left and right sides. It contains the following sections:

- Shipper:** Includes fields for "Shipper", "Air Request No.", "Page of Pages", and "Shipper's Reference Number (optional)".
- Consignee:** A large empty field for the consignee's name and address.
- Transport Details:** Includes "Airport of Departure", "Treatment and loading instructions", "Airport of Destination", and a "WARNING" section with text: "Failure to comply in all respects with the applicable Dangerous Goods Regulations may be in breach of the applicable law, subject to legal penalties." Below this are checkboxes for "NON-HAZARDOUS" and "HAZARDOUS".
- Nature and Quantity of Dangerous Goods:** A table with columns: "UN or ID No.", "Proper Shipping Name", "Class or Division (Secondary class)", "Packing Group", "Quantity and type of packing", "Packing Type", and "Admission".
- Additional Handling Information:** A field for "Additional Handling Information" and a note "Shipment is made under the provisions of CCO".
- Emergency contact 24-hr number:** A field for the emergency contact number.
- Signature Section:** Includes a declaration: "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/packaged, and are in all respects in proper condition for transport according to applicable International and National Governmental Regulations. I declare that all of the applicable air transport requirements have been met." It also has fields for "Name/Title of Signatory" and "Place and Date".



To learn more about shipping documents please consult:

- Part 3 of the TDG Regulations;
- Advisory Notice [Shipping Documents - TP9554 Vol.2](http://www.tc.gc.ca/tdg/publications/cladvisory/advol2enew.htm) <http://www.tc.gc.ca/tdg/publications/cladvisory/advol2enew.htm>; and
- Part 12 of the TDG Regulations (section 12.2).

## Dangerous Goods Safety Marks – TDG Regulations, Part 4

TDG Regulations require that dangerous goods safety marks be displayed on the means of containment (e.g. box) to indicate the presence and nature of the danger. Please note that the TDG Regulations do not require safety marks on the battery. The reason, the battery is the actual dangerous goods and not the means of containment.

Also, when shipping by aircraft, the ICAO Technical Instructions require an extra label such as a “*Lithium battery handling label*”. See image below.



To learn more about dangerous goods safety marks please consult:

- Part 4 of the TDG Regulations;
- the Advisory Notice titled: [Safety Marks - TP9554 Vol.5](http://www.tc.gc.ca/tdg/publications/cladvisory/advol5enew.htm) <http://www.tc.gc.ca/tdg/publications/cladvisory/advol5enew.htm>; and
- ICAO Technical Instructions.

## Means of Containment – TDG Regulations, Part 5

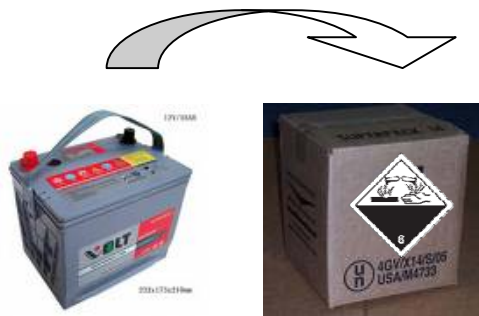
When batteries (classes 4, 8 or 9) are placed in a small means of containment, section 5.12 of the TDG Regulations refers to the Canadian General Standards Board standard 43.150 (CGSB-43.150). This standard (unlike the UN Recommendations, the IMDG code and 49 CFR) requires you to package the batteries in a UN standardized means of containment. In most cases, you must package the batteries in a manner that prevents damage to the battery and protects the terminals from short-circuit.



When batteries (individually packaged or not) are consolidated on a pallet or a large battery is placed on a pallet, Part 5 of the TDG Regulations refers to CGSB-43.146 and Canadian Standards Association (CSA) B621. Since containers manufactured to these two standards can be impractical for packaging and transporting batteries, shippers often use alternative non-specification methods. To do this, you must apply to Transport Canada for an equivalency certificate (i.e. formally known as a permit). To learn more about equivalency certificates, read section #4 of this Bulletin.

To learn more about means of containment please consult:

- Part 5 of the TDG Regulations; and
- Advisory Notice titled: [Means of Containment - TP9554 Vol.6](http://www.tc.gc.ca/tdg/publications/cladvisory/advol6enew.htm)  
<http://www.tc.gc.ca/tdg/publications/cladvisory/advol6enew.htm>.



According to CGSB-43.150, you must:

- transport batteries in a UN Standardized means of containment; and
- apply dangerous goods safety marks to the means of containment, as per Part 4 of TDG Regulations.

## Training – TDG Regulations, Part 6

The TDG Regulations require that anyone who handles, offers for transport, transports or imports dangerous goods must be adequately trained. For more information on training please consult:

- Part 6 of the TDG Regulations; and
- Advisory Notice titled: [Guidelines for Training Criteria](http://www.tc.gc.ca/tdg/publications/cladvisory/advol1enew.htm)  
<http://www.tc.gc.ca/tdg/publications/cladvisory/advol1enew.htm>.

## 4 – Special Cases, Special Provisions or Equivalency Certificates

### Special Cases

Special cases provide either full or partial relief from the TDG Regulations. They are found in Part 1, under sections 1.15 to 1.48.

Sections 1.15 (150 kg gross mass exemption) and 1.16 (500 kg gross mass exemption) may apply to transporting batteries. Both sections limit the total gross mass to 150 kg or 500 kg and they must be transported in one or more means of containment having a gross mass less than or equal to 30 kg. This means that these exemptions apply only when shipping batteries in means of containment (i.e. boxes) having a gross mass of less than 30 kg. These exemptions would generally not apply when shipping batteries on a pallet, as the pallet is considered a means of containment and the total mass would likely exceed 30 kg.

To learn more about special cases, please consult the TDG Regulations, Part 1, sections 1.15 to 1.48.

### Special Provisions

Special provisions 34 and 39 apply specifically to batteries and may provide relief from the TDG Regulations. These provisions list requirements for classifying certain batteries:

- Special provision 34 applies to UN3090 and UN3091.
- Special provision 39 applies to UN2794, UN2795 and UN2800.

To learn more, please consult special provisions 34 and 39 in Schedule 2 of the TDG Regulations.

### Equivalency Certificate (Permit)

To transport batteries in non-standardized means of containment, you must apply to Transport Canada for an equivalency certificate. Although a pallet is not a standardized means of containment, we have issued equivalency certificates to transport batteries on a pallet using shrink-wrap. You can view a copy of an equivalency certificate addressing batteries on a pallet at: (<http://www.tc.gc.ca/tdg/permits/htm/8334-eng.htm>).



**DO**



**DON'T**



*With an equivalency certificate you may shrink-wrap batteries on a pallet but the terminals must be protected from short circuit. This is usually done using cardboard insulator pads between layers of batteries.*

To learn how to apply for an equivalency certificate please visit the “Equivalency Certificate” section of our website at: <http://www.tc.gc.ca/tdg/permits/menu.htm> and consult Part 14 of the TDG Regulations.

## **5 – Shipping as Waste**

### **International Transport**

Environment Canada’s *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations* regulate exporting and importing waste batteries. You must obtain permits from Environment Canada to export or import waste batteries and other materials.

The *Basel Convention* is an agreement among countries to control and track the movement of hazardous wastes. Since many countries do not permit the entry of waste batteries, make sure to ship batteries only to countries that will accept them.

To learn more about the *Basel Convention* and *Export and Import of Hazardous Waste and Hazardous Recyclable Material Regulations*, please visit Environment Canada’s website at: <http://www.ec.gc.ca/drqd-wrmd/default.asp?lang=En&n=45E5E23B-1>

## Domestic Transport

When transporting **waste** batteries domestically, all the same requirements apply. Provided the batteries are not damaged or leaking, waste batteries are treated the same as new batteries. This means you still require a shipping document, labels, placards, etc. Also, waste batteries should be capable of passing the same tests as new batteries. These tests include: vibration (*vibration*), shock (*choc*), external short circuit (*court-circuit externe*), impact (*impact*), etc. Essentially, waste batteries should be in good physical condition and free from any visual damage.

When batteries are damaged, you may need to re-classify them. Also, it's possible that a damaged battery is no longer a dangerous goods. For example, a lead acid battery (UN2794) may no longer be regulated if all the acid has leaked out due to a crack in the case. However, the acid, which was originally inside the battery, would still be regulated.

### Note for International and Domestic air transport:

As of January 1, 2011, the ICAO Technical Instructions will no longer allow waste batteries or batteries being shipped for recycling or disposal to be transported by aircraft; unless approved by the appropriate national authority of the State of Origin and the State of the Operator. This means that a shipment of batteries that originates in Germany and is destined for Canada, on board a Canadian aircraft, would need the approval of both the German government and Canadian government.

## 6 – Shipping by Vessel

### International Transport

When transporting batteries internationally by vessel, Part 11 of the TDG Regulations requires you to:

- comply with the *International Maritime Dangerous Goods Code* (IMDG Code) and some additional requirements in the TDG Regulations.
- use the IMDG Code when transporting dangerous goods on a “*home-trade voyage, class 1*”. An example would be a vessel that leaves the port of Halifax, passes through the Panama Canal and arrives in Vancouver.

### Domestic Transport

When transporting batteries domestically by vessel, Part 11 of the TDG Regulations requires you to comply with the TDG Regulations only. In this case, you must not use the IMDG Code.

To learn more please consult Part 11 of the TDG Regulations.





## 7 – Shipping by Aircraft

### International Transport

When an aircraft transports batteries internationally, Part 12 of the TDG Regulations requires you to comply with the *ICAO Technical Instructions* and some additional requirements of the TDG Regulations.

### Domestic Transport

When an aircraft transports batteries domestically, Part 12 of the TDG Regulations gives you two options. You can:

- Comply with *ICAO Technical Instructions* and some additional requirements of the TDG Regulations. This is same as shipping batteries internationally; **or**
- Use the alternative requirements listed under sections 12.4 to 12.17 when the *ICAO Technical Instructions* limits or restricts the quantity or type of dangerous goods that can be transported.

To learn more please consult Part 11 and Part 12 of the TDG Regulations.

## 8 – Cross-Border Shipments from the United States

When the shipment enters Canada from the United States by road or rail, sections 9.1 and 10.1 of the TDG Regulations allows you comply with the requirements of the 49 CFR (US Regulations) instead of Canadian TDG Regulations. This reciprocity also applies to shipments that transit through Canada from the United States. For example, a shipment leaves the state of Washington and arrives in Alaska but travels through British Columbia and the Yukon.

According to subsection 9.1(2), this reciprocity does not apply to shipments travelling under exemptions issued in the US. This means that batteries being shipped under an exemption in the United States would need to fully comply with the Canadian TDG Regulations when entering Canada.



## 9 – Upcoming Changes

Transport Canada has developed a new standard that will redefine the requirements that apply to small means of containment. This new standard will clarify the means of containment requirements for shipping batteries by road, rail or ship on a domestic voyage. This standard is called “Small Containers for Transport of Dangerous Goods, Classes 3, 4, 5, 6.1, 8 and 9” (Transport Canada publication number TP14850E). Although this standard has been published, it has not yet been adopted as a requirement of the TDG Regulations. In the future, this new standard will be adopted in the TDG Regulations and replace the current standard called CAN/CGSB-43.150-97. If you wish to use this new standard, you must apply the TDG Directorate for an equivalency certificate.

You can view this standard online at:

<http://www.tc.gc.ca/eng/tdg/publications-standards-tp14850-1093.htm>

### Compliance with the Transportation of Dangerous Goods Act and Regulations

Failure to comply with the *Transportation of Dangerous Goods Act* and Regulations can lead to fines and/or imprisonment. To learn more, please contact the regional Transport Dangerous Goods Office in your area or visit the TDG website at:

[www.tc.gc.ca/tdg/safety/menu.htm](http://www.tc.gc.ca/tdg/safety/menu.htm)

|                                      |  |                          |
|--------------------------------------|--|--------------------------|
| <b>Atlantic Region</b>               | 1-866-814-1477                         | TDG-TMDAtlantic@tc.gc.ca |
| <b>Quebec Region</b>                 | (514) 283-5722                         |                          |
| <b>Ontario Region</b>                | (416) 973-1868                         | TDG-TMDOntario@tc.gc.ca  |
| <b>Prairie &amp; Northern Region</b> | 1-888-463-0521<br>or<br>(204) 983-3152 | TDG-TMDPNR@tc.gc.ca      |
| <b>Pacific Region</b>                | (604) 666-2955                         |                          |