A Technical Publication from
ALBERTA EDGE (ENVIRONMENTAL AND
DANGEROUS GOODS EMERGENCIES)

Batteries and
Battery Fluids
by Road

January 2018
This material is meant as a guide to certain parts of the Transportation of Dangerous Goods Regulations and is not meant to be a substitute for them. It is the responsibility of handlers, offerers and transporters of dangerous goods to consult the Regulations for the exact requirements. Alberta EDGE (Environmental and Dangerous Goods Emergencies) of Alberta Transportation can provide accurate information regarding the Regulations 24 hours a day.

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These telephone lines are recorded to assist in responding to the emergency (natural/manmade) and/or inquiry regarding dangerous goods and to ensure that the information is accurate. Direct any questions regarding the recording to the Regulatory Compliance Officer responding to your call or contact the Manager of Alberta EDGE at 780-427-8660. Legal Authority: Dangerous Goods Transportation and Handling Act, Section 13(1).
INTRODUCTION

This is one of a series of information bulletins that have been prepared by Dangerous Goods and Rail Safety of Alberta Transportation to assist shippers, handlers, offerers and transporters of dangerous goods. If you have any comments or suggestions about this document please contact Alberta EDGE at 1-800-272-9600 province wide.

PURPOSE OF THE TDG ACT

The purpose of the Transportation of Dangerous Goods (TDG) Act and Regulations is to promote public safety when goods are being transported by road, rail, sea or air. When a transport vehicle carrying dangerous goods is in an accident, emergency response personnel (e.g. fire, police) must identify what those dangerous goods are before they can safely proceed. They identify the dangerous goods by looking at the placards on the vehicle and reading the dangerous goods documentation (which must be kept in the cab of the vehicle). Without this information the response to a spill or accident could be delayed or become dangerous to the responders.

EXEMPTIONS

The relaxation of certain requirements of the TDG Regulations is acceptable for properly packaged dangerous goods in small quantities that do not pose as severe a hazard. The following exemptions may be used for batteries and battery fluids.

150 kg Gross Mass Exemption

This exemption allows for the transportation of a small means of containment that has a gross mass of less than or equal to 30 kg per package to a total of 150 kg gross mass. When using this exemption, Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training) and Part 8 (Reporting Requirements) do not apply. For more specific requirements see Section 1.15 of the TDG Regulations.

500 kg Gross Mass Exemption

This exemption allows for the transportation of a small means of containment that has a gross mass of less than or equal to 30 kg per package to a total of 500 kg gross mass. When using this exemption, a short form of documentation is required detailing the Class and number of packages being transported. Safety marks are required on the containers and a training certificate must be present. For more specific requirements see Section 1.16 of the TDG Regulations.
Limited Quantities Exemption

This exemption allows for the transportation of limited quantities of batteries and battery fluids in one or more means of containment. Each outer means of containment has a gross mass that is less than or equal to 30 kg and the dangerous goods in the inner means of containment have a mass (if solids) or volume (if liquids) that is less than or equal to the number shown in column 6(a) of Schedule 1, when that number is expressed in kilograms (if solids) or litres (if liquids). When using this exemption, Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan) and Part 8 (Reporting Requirements) do not apply. For more specific requirements see Section 1.17 of the TDG Regulations.

Excepted Quantities Exemption

This exemption only allows for the transportation of battery fluids (UN2796 and UN2797) in excepted quantities that are assigned to alphanumeric codes E2 in column 6(b) of Schedule 1. When using this exemption, Part 3 (Documentation), Part 4 (Dangerous Goods Safety Marks), Part 5 (Means of Containment), Part 6 (Training), Part 7 (Emergency Response Assistance Plan) and Part 8 (Reporting Requirements) do not apply. For more specific requirements see Section 1.17.1 of the TDG Regulations.

CLASSIFICATION OF BATTERIES AND BATTERY FLUIDS

Batteries and battery fluids are classified as Class 8, Corrosives, in the TDG Regulations.

The tables below describe the shipping names and UN numbers of some types of batteries and battery fluids listed in Schedule 1 of the Regulations.
### Table 1: Classification of Batteries

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>Class</th>
<th>UN Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATTERIES, WET, FILLED WITH ACID, electric storage</td>
<td>8</td>
<td>UN2794</td>
</tr>
<tr>
<td>BATTERIES, WET, FILLED WITH ALKALI, electric storage</td>
<td>8</td>
<td>UN2795</td>
</tr>
<tr>
<td>BATTERIES, WET, NON-SPILLABLE (these are the sealed or &quot;maintenance free&quot; type) (^1)</td>
<td>8</td>
<td>UN2800</td>
</tr>
<tr>
<td>BATTERIES, DRY, CONTAINING POTASSIUM HYDROXIDE SOLID, electric storage (^2)</td>
<td>8</td>
<td>UN3028</td>
</tr>
<tr>
<td>Batteries, Gel Cell Type (No free liquid and unable to leak even if battery is damaged)</td>
<td>Not Regulated</td>
<td>n/a</td>
</tr>
<tr>
<td>LITHIUM METAL BATTERIES (including lithium alloy batteries) (^3, 4, 5, 6, 7, 9)</td>
<td>9</td>
<td>UN3090</td>
</tr>
<tr>
<td>LITHIUM METAL BATTERIES CONTAINED IN EQUIPMENT (including lithium alloy batteries); or LITHIUM METAL BATTERIES PACKED WITH EQUIPMENT (including lithium alloy batteries) (^3, 4, 5, 6, 9)</td>
<td>9</td>
<td>UN3091</td>
</tr>
<tr>
<td>BATTERIES, CONTAINING SODIUM; or CELLS, CONTAINING SODIUM</td>
<td>4.3</td>
<td>UN3292</td>
</tr>
<tr>
<td>LITHIUM ION BATTERIES (including lithium ion polymer batteries) (^3, 4, 5, 6, 7, 9)</td>
<td>9</td>
<td>UN3480</td>
</tr>
<tr>
<td>LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT (including lithium ion polymer batteries); or LITHIUM ION BATTERIES PACKED WITH EQUIPMENT (including lithium ion polymer batteries) (^3, 4, 5, 6, 9)</td>
<td>9</td>
<td>UN3481</td>
</tr>
<tr>
<td>BATTERIES, NICKEL-METAL HYDRIDE (^8)</td>
<td>9</td>
<td>UN3496</td>
</tr>
</tbody>
</table>
Table 2: Classification of Battery Fluids

<table>
<thead>
<tr>
<th>Shipping Name</th>
<th>Class</th>
<th>UN number</th>
<th>Packing Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>BATTERY FLUID, ACID; SULFURIC ACID with not more than 51% acid; Or SULPHURIC ACID with not more than 51% acid</td>
<td>8</td>
<td>UN2796</td>
<td>II</td>
</tr>
<tr>
<td>BATTERY FLUID, ALKALI</td>
<td>8</td>
<td>UN2797</td>
<td>II</td>
</tr>
</tbody>
</table>

Notes – Special Provisions in Schedule 2 of the TDG Regulations:

1 Special Provision 39
(1) These dangerous goods may be handled, offered for transport or transported under this shipping name if the dangerous goods are
(a) protected from short circuits; and
(b) capable of withstanding, without leakage of battery fluid, the following tests:
   (i) a vibration test, in which
      (A) the battery is rigidly clamped to the platform of a vibration machine and a simple harmonic motion having an amplitude of 0.8 mm (1.6 mm maximum total excursion) is applied,
      (B) the frequency is varied in steps of 1 Hz each minute between the limits of 10 Hz and 55 Hz,
      (C) the entire range of frequencies and return is traversed in 95 ± 5 minutes with 2 minutes spent at each frequency for each mounting position (direction of vibration) of the battery, and
      (D) the battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for equal time periods, and
   (ii) after the vibration test, a pressure differential test, in which
      (A) the battery is stored for 6 hours at 24°C ± 4°C while subjected to a pressure differential greater than or equal to 88 kPa, and
      (B) the battery is tested in three mutually perpendicular positions (to include testing with fill openings and vents, if any, in an inverted position) for at least 6 hours in each position.
(2) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to UN2800, BATTERIES, WET, NON-SPILLABLE, electric storage, that are not intended for disposal, if
(a) at a temperature of 55°C, electrolyte will not flow from a ruptured or cracked battery case and there is no free liquid to flow; and
(b) when the battery is prepared for transport, the battery’s terminals are protected from short circuits.

2 Special Provision 111
This shipping name must not be used for the transport of non-activated batteries unless they contain dry potassium hydroxide and are intended to be activated prior to use by the addition of an appropriate amount of water to each cell.
3 Special Provision 34

(1) These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to the handling, offering for transport or transporting of lithium cells and batteries on a road vehicle, a railway vehicle or a vessel on a domestic voyage if
(a) for a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and, for a lithium ion cell, the watt-hour rating is not more than 20 Wh;
(b) for a lithium metal or lithium alloy battery, the aggregate lithium content is not more than 2 g, and for a lithium-ion battery, the watt-hour rating is not more than 100 Wh;
(c) lithium ion batteries are marked with the watt-hour rating on the outside case, except for those manufactured before January 1, 2009;
(d) each cell and battery type passes each of the tests set out in paragraph 2.43.1(2)(a) of Part 2 (Classification);
(e) the cells and batteries are afforded protection against short circuit, including protection against contact with conductive materials within the same packaging that could lead to a short circuit;
(f) the cells and batteries are packed in a means of containment that completely encloses the cells and batteries;
(g) the gross mass of the cells and batteries does not exceed 30 kg, except when the cells and batteries are installed in or packed with equipment; and
(h) the cells and batteries are packed in a means of containment capable of withstanding a 1.2 m drop test in any orientation without damage to the cells or batteries contained inside the means of containment, without the contents shifting so as to allow battery-to-battery or cell-to-cell, contact, and without release of contents.

(2) Cells and batteries referred to in subsection (1) that are installed in equipment must, unless they are afforded equivalent protection by the equipment in which they are contained,
(a) be afforded protection against damage and short circuit, including protection against contact with conductive materials within the same packaging that could lead to a short circuit;
(b) subject to subsection (3), be fitted to prevent accidental activation; and
(c) be packed in a means of containment designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety.

(3) Paragraph (2)(b) does not apply to cells and batteries installed in devices that are intentionally active during transport such as radio frequency identification transmitters, watches and sensors, and that are not capable of generating a dangerous evolution of heat.

(4) Except for means of containment containing button cell batteries installed in equipment, including circuit boards, or no more than four cells installed in equipment or no more than two batteries installed in equipment, each means of containment must be marked with the appropriate lithium battery mark in accordance with section 4.24 (below).

(5) Despite subsection (4), except for means of containment containing button cell batteries installed in equipment, including circuit boards, or no more than four cells installed in equipment or no more than two batteries installed in equipment, each means of containment may, until December 31, 2018, be marked with the following:
(a) "lithium metal", "lithium ion" as appropriate;
(b) an indication that the means of containment must be handled with care and that a flammability hazard exists if the means of containment is damaged;
(c) an indication that special procedures must be followed in the event the means of containment is damaged, including inspection and repacking, if necessary; and
(d) a telephone number to call for additional information.
4 See Special Provision 123
(1) The testing requirements in subsection 38.3 of Part III of the Manual of Tests and Criteria do not apply to production runs consisting of not more than 100 cells and batteries or to pre-production prototypes of cells and batteries that are transported on a road vehicle, a railway vehicle or a vessel on a domestic voyage if
(a) the cells or batteries are imported, offered for transport, handled or transported in accordance with Packing Instruction P910 of the UN Recommendations; and
(b) the pre-production prototypes of cells and batteries are in transport for the purpose of testing.
(2) Despite paragraph (1)(b), batteries that have a total mass of 12 kg or more and that have a strong, impact-resistant outer casing, or assemblies of them, may be packed in an outer means of containment or protective enclosure designed, constructed, filled, closed, secured and maintained so that under normal conditions of transport, including handling, there will be no release of the dangerous goods that could endanger public safety. The batteries or battery assemblies must be protected from short-circuit.

5 See Special Provision 137
(1) This shipping name applies to lithium ion cells or batteries, and lithium metal cells or batteries, that are damaged or defective and do not conform to subsection 2.43.1(2) of Part 2 (Classification).
(2) Lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective, include, but are not limited to, cells or batteries that have leaked or vented, or have sustained physical or mechanical damage, and cannot be diagnosed prior to transport, or that have been identified as being defective for safety reasons.
(3) Lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective must be packed in accordance with Packing Instructions P908 or LP904 of the UN Recommendations, as applicable.
(4) As applicable, the outer means of containment or the overpack must be marked legibly and visibly on a contrasting background, with the words "Damaged/Defective Lithium Ion Batteries", "Damaged/Defective Lithium Metal Batteries".
(5) It is forbidden to transport lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective and that, under normal conditions of transport, are liable to disassemble rapidly, react dangerously, produce a flame or a dangerous evolution of heat, or produce a dangerous emission of toxic, corrosive or flammable gases or vapors.
(6) It is forbidden to transport by aircraft lithium ion cells or batteries and lithium metal cells or batteries that are damaged or defective.

6 See Special Provision 138
(1) When transported for disposal or recycling, lithium ion cells or batteries and lithium metal cells or batteries, or equipment containing those cells or batteries,
(a) are not subject to subsection 2.43.1(2) of Part 2 (Classification);
(b) must be packed in accordance with Packing Instructions P909 or LP904 of the UN Recommendations, as applicable, whether packed with or without non-lithium cells or batteries or equipment containing those cells or batteries;
(c) must be in a means of containment or an overpack that is marked legibly and visibly on a contrasting background with the words "Lithium batteries for disposal", "Lithium batteries for recycling" as appropriate; and
(d) are forbidden for transport by aircraft.
(2) Damaged or defective cells and batteries must be offered for transport or transported under special provision 137.

7 See Special Provision 149
These dangerous goods are forbidden for transport as cargo on a passenger aircraft.
See Special Provision 97
These Regulations, except for Part 1 (Coming into Force, Repeal, Interpretation, General Provisions and Special Cases) and Part 2 (Classification), do not apply to these dangerous goods unless they are transported by vessel.

See Special Provision 159
(1) Subject to subsection (2), the label to be used for these dangerous goods is the one illustrated under the heading for lithium batteries "Class 9, Lithium Batteries" in the appendix to Part 4 (below).

(2) The generic Class 9 label may be used until December 31, 2018.

WASTE BATTERIES (USED BATTERIES)

Used batteries are considered a waste and must either go to a recycler or a disposal company. When collecting used batteries for recycling it is recommended that you use the "Recycle Docket" from Alberta Environment and Parks (AEP). This document is an equivalent to the dangerous goods shipping document.

Used batteries are often in poor condition and pose a significant spill hazard. For this reason you are required to take steps to "leak-proof" any vehicle transporting them. The means of leak-proofing is up to the carrier but should involve secondary containment such as: plastic bins or drums or a plastic liner for the cargo compartment.

OTHER NON-HAZARDOUS BATTERIES

The following batteries are not regulated by the TDG Act and Regulations. If disposing of large numbers of these batteries please contact Alberta Environment and Parks at (780)427-2700 (or for a toll-free call in Alberta dial 310-3773), for disposal advice.

1. Nickel-Cadmium (NiCad’s) rechargeable consumer batteries;

2. Household type Dry Cell Batteries (includes ordinary carbon or alkaline batteries).
DANGEROUS GOODS SHIPPING DOCUMENT

According to Section 1.4 of the Transportation of Dangerous Goods Regulations, the definition of the shipping document must be in paper format, electronic format is not acceptable. The information required on a shipping document and on a consist must be easy to identify, legible, in indelible print and in English or French [Section 3.4]. The following table shows the minimum required information which must appear on a shipping document for the transportation of batteries and battery fluids.

<table>
<thead>
<tr>
<th>Shipping Document Information</th>
<th>When Required</th>
<th>Where in the Regulations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name and address of consignor</td>
<td>Always</td>
<td>3.5(1)(a)</td>
</tr>
<tr>
<td>Date</td>
<td>Always</td>
<td>3.5(1)(b)</td>
</tr>
<tr>
<td>Description of goods in the following order</td>
<td></td>
<td>3.5(1)(c)</td>
</tr>
<tr>
<td>a. UN number</td>
<td>Always</td>
<td>3.5(1)(c)(i)</td>
</tr>
<tr>
<td>b. Shipping name</td>
<td>Always</td>
<td>3.5(1)(c)(ii)</td>
</tr>
<tr>
<td>c. Primary classification</td>
<td>Always</td>
<td>3.5(1)(c)(iii)</td>
</tr>
<tr>
<td>d. Subsidiary class</td>
<td>If Any</td>
<td>3.5(1)(c)(v)</td>
</tr>
<tr>
<td>e. Packing group</td>
<td>If Any</td>
<td>3.5(1)(c)(vi)</td>
</tr>
<tr>
<td>The quantity in the International System of Units (SI)</td>
<td>Always</td>
<td>3.5(1)(d)</td>
</tr>
<tr>
<td>The number of containers</td>
<td>For dangerous goods in small containers requiring safety labels</td>
<td>3.5(1)(e)</td>
</tr>
<tr>
<td>The words “24-Hour Number” followed by a telephone number where the consignor can be easily reached</td>
<td>Always</td>
<td>3.5(1)(f)</td>
</tr>
<tr>
<td>Consignor’s Certification</td>
<td>Always</td>
<td>3.6.1</td>
</tr>
<tr>
<td>Emergency Response Assistance Plan (ERAP) number and telephone number to activate it</td>
<td>If Required</td>
<td>3.6(1)</td>
</tr>
</tbody>
</table>

1. If the quantity of dangerous goods is less than 10% of the container’s maximum fill limit then the words “Residue – Last Contained” followed by the shipping name of the dangerous goods last contained in the means of containment may be used to describe the quantity. This does not apply to Class 2 gases in small containers and Class 7 radioactive substances [Subsection 3.5(4)].

2. If the quantity of dangerous goods or the number of small means of containment changes during transport, the carrier must show the change on the
shipping document or on a document attached to the shipping document. [Section 3.5(5)].

3. The telephone number of someone who is not the consignor, but who is competent to give technical information on the shipment, such as CANUTEC, may be used instead. To use CANUTEC’s phone number, the consignor must receive permission, in writing, from CANUTEC. A consignor who uses the telephone number of an organization or agency other than CANUTEC must ensure that the organization or agency has current, accurate information on the dangerous goods the consignor offers for transport and, if the organization or agency is located outside Canada, the telephone number must include the country code and, if required, the city code [Section 3.5(2)].

4. Consignor’s Certification: “I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.” (Section 3.6.1)

The consignor and carrier must be able to produce a printed or electronic copy of the shipping document for two years after the shipping document was prepared. The consignor or carrier has 15 days to produce a shipping document if an inspector requests a copy in writing [Section 3.11].

For air shipments a prescribed form, the “Shippers Declaration for Dangerous Goods”, must be used. Information can also be obtained by calling the air cargo handler in your area or Transport Canada’s Dangerous Goods Inspectors (Air Mode) in Edmonton at 780-495-3810.

LOCATION OF DOCUMENT DURING TRANSPORT

When the driver is in the power unit, a copy of the shipping document must be in a pocket mounted on the driver’s door, or within the driver’s reach. When the driver is out of the power unit, the document must be in the door pocket, on the driver’s seat or in a location that is clearly visible to anyone entering through the driver’s door [Section 3.7].

WASTE MANIFEST

The waste manifest is used when shipping a dangerous good that is no longer usable in its original form and is intended for treatment, disposal or recycling. A waste manifest is a serialized pre-printed form which is only available through government offices. In order to obtain one please call Alberta Environment and Parks at (780)427-2700 or 310-3773.

With the amendments to the TDG regulations in 2014, the current Movement Document/Manifest no longer satisfies the requirements of the TDG Regulations. AEP has updated the Recycle Docket and Hazardous Waste Manifest Attachment Sheet to reflect these amendments to TDG Regulations. Manifests have been updated and distributed to reflect the amendment to the certification statement that must be used. However, the
changes to the order of shipping information are not complete and new documents WILL NOT be available. In addition, the current form of the Movement Document is specified in Federal legislation for the import and exporting of hazardous waste and hazardous recyclables and must continue to be used without modification. Therefore, persons required to use the Recycle Docket or Movement Document/Manifest are encouraged to do as follows:

- For hazardous recyclable shipped within Alberta – use the updated Recycle Docket now available on the AEP website or equivalent recycle docket;
- For hazardous waste shipped within Alberta there are two options:
  1) cross out headings on movement document for UN number (box 6) and begin shipping name using UN # in box 4;
  2) use the current Movement Document/Manifest as normal to satisfy the requirements of the Waste Control Regulation and the updated Hazardous Waste Manifest Attachment Sheet to satisfy the TDG Regulations:
    a. If using the Hazardous Waste Manifest Attachment Sheet to satisfy the TDG Regulations, only one (1) copy of the Hazardous Waste Manifest Sheet needs to accompany the shipment and does not need to be sent to AEP along with the manifest;
    b. If using the Hazardous Waste Manifest Sheet to satisfy requirements of the Waste Control Regulation, 6 copies will need to accompany the shipment and copies need to be distributed as per normal procedure.

Information on the AEP Recycle Docket, Movement Document/Manifest and Hazardous Waste Manifest Attachment Sheet can be found on the AEP website at:

http://aep.alberta.ca/waste/hazardous-waste/industry/transportation.aspx

SAFETY MARKS

Safety marks are labels, placards, UN numbers and package markings. They are described in Part 4 of the TDG Regulations. The consignor is responsible for providing and displaying safety marks on all means of containment carrying dangerous goods [Subsection 4.4(1)]. The carrier is responsible for making sure that the safety marks remain displayed during transport. The carrier is also responsible for providing and displaying or removing the safety marks if the requirements for dangerous goods safety marks change during transport [Subsection 4.5(1)].

Note that safety marks do not have to be displayed directly on batteries because they are considered dangerous goods and not means of containment.
Small Means of Containment

If batteries or battery acid is transport in a small means of containment has a capacity of 450 litres or less. The small means of containment must display a dangerous goods label(s), the shipping name, the technical name (if applicable) and the UN number of the product (Sections 4.10 to 4.12). A label must be at least 100 mm on each side with a line running 5 mm inside the edge. If the container is too small or it has an irregular shape, the label can be reduced in size up to a dimension of 30 mm on each side [Subsection 4.7(2)].

The UN number for a dangerous goods label can be placed inside the label or next to the primary class label as shown below [Paragraph 4.8(1)(b)]. If the UN number is inside the label the letters “UN” must be omitted.

Example of Safety Marks for a Small Means of Containment

In this case the product is
BATTERIES, WET, FILLED WITH ACID, electric storage,
UN 2794, Class 8

<table>
<thead>
<tr>
<th>BATTERIES, WET, FILLED WITH ACID</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN2794 BATTERIES, WET, FILLED WITH ACID</td>
</tr>
</tbody>
</table>

Large Means of Containment

A large means of containment has a capacity greater than 450 litres. Each side of a placard must be at least 250 mm in length. Except for the DANGER placard, all placards have a line running 12.5mm inside the edge. If the large means of containment has an irregular shape or its size is too small, the placard can be reduced in size but the dimensions must never be less than 100 mm on each side [Subsection 4.7(3)].

The primary class placard and UN number must be displayed on each side and on each end of the large means of containment in accordance with Section 4.15 of the TDG Regulations if the dangerous goods:

- are in a quantity or concentration for which an emergency response assistance plan is required; or
are a liquid or a gas in direct contact with the large means of containment.

If the dangerous goods are not in a large means of containment but have a total gross mass greater than 500 kg, the transport unit must require placards.

The TDG Regulations do not require placards for batteries if the gross mass is 500 Kg or less. However, placards may still be voluntarily displayed according to Sections 4.16.1 and 4.1.1 of the TDG Regulations.

The UN number of the dangerous goods being transported in a large means of containment must be displayed in black numerals not less than 65 mm high inside the placard or on an orange panel next to the placard. The letters “UN” are always omitted [Subsection 4.8(2)].

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**Example of Safety Marks for a Large Means of Containment**

In this case the product is

**BATTERY FLUID, ACID; SULFURIC ACID with not more than 51% acid**

UN 2796, Class 8, Packing Group II

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**Transporting Batteries on Pallet in a Truck**

To transport batteries on a pallet using shrink-wrap in a truck:

1. Batteries placed directly on the pallet and secured by shrink wrap and the pallet total capacity is 450 L or less. ONE pallet of battery is considered as ONE small means of containment and TGD labelling requirement described as above must be met.

2. Batteries are placed in small means of containment and then put on a pallet and secured by shrink wrap. The pallet total capacity is 450 L or less. Labelling requirement described above must be met on:
   a. The small means of containment carrying the batteries
   b. The pallet with the shrink-wrap (and the word of “OVERPACK” if the label inside the overpack is not visible [Section 4.10.1]).
3. Batteries placed directly on the pallet and secured by shrink wrap and the pallet total capacity greater than 450 L. Since the pallet is not a standardized large means of containment, an Equivalency Certificate must be obtained from Transport Canada, see Part 14 of TDG Regulations for details.

4. Batteries are placed in small means of containment and then put on a pallet and secured by shrink wrap. The pallet total capacity is greater than 450 L.
   a. Labelling requirement described above must be met on the small means of containment carrying the batteries
   b. The pallet with the shrink-wrap (and the word of “OVERPACK” if the label inside the overpack is not visible [Section 4.10.1]).
   c. Since the pallet is not a standardized large means of containment, an Equivalency Certificate must be obtained from Transport Canada, see Part 14 of TDG Regulations for details.

In all of the above situations, if the gross mass of the whole load of battery is more than 500 Kg, the Class 8 (or Class 9) placards must be displayed on each side and each end of the truck (truck being the large means of containment [Section 4.15].

**TRAINING**

Unless there is an exemption under the TDG Regulations, anyone who handles, offers for transport or transports dangerous goods must be adequately trained and have a valid Dangerous Goods Training Certificate or must be under the direct supervision of a trained person [Section 6.1].

A person is adequately trained if the person has sound knowledge of the topics listed below that relate directly to the person’s duties and to the dangerous goods the person is expected to handle, offer for transport or transport [Section 6.2]:

- classification of dangerous goods, shipping names, UN numbers, packing groups;
- shipping documentation;
- safety marks;
- certification safety marks, safety requirements and safety standards;
- emergency response assistance plan requirements;
- reporting requirements;
- safe handling and transportation practices;
- proper use of equipment; and
- emergency measures to take in case of releases.
An employer who has reasonable grounds to believe that an employee is adequately trained and will perform duties to which the training relates must issue a training certificate to the employee that includes the following information. The training certificate may be in paper or electronic format. [Section 6.3]:

- the name and address of the place of business of the employer;
- the employee’s name;
- the date the training certificate expires, preceded by the words “Expires on” or “Date d’expiration”;
- the aspects of handling, offering for transport or transporting dangerous goods for which the employee is trained; and
- the signatures of the employee and the employer or another employee acting on behalf of the employer.

Self-employed people can issue training certificates for themselves. The employer or self-employed person must keep a record of training or a statement of experience and a copy of his/her training certificate beginning on the date the training certificate is issued and continuing until two years after the date it expires [Section 6.6]. The training certificate must be immediately presented to an inspector who requests it [Section 6.8].

ACCIDENTAL RELEASES OF DANGEROUS GOODS

In the event of a release or an anticipated release of dangerous goods, the person who has possession of the dangerous goods must make a report immediately. Any release of batteries or battery fluids requires an Emergency Report to the local authorities. [Section 8.2]

In Alberta, the report must be made to the local police and to Alberta Transportation, Dangerous Goods and Rail Safety at 1-800-272-9600.

For the full reporting requirements, refer to Alberta EDGE's bulletin entitled “Emergency, Release or Anticipated Release Report Requirements”. A copy can be obtained by calling Alberta EDGE at 1-800-272-9600.
The following Dangerous Goods document for road transport is included with this bulletin:

<table>
<thead>
<tr>
<th>CONSIGNOR</th>
<th>DESTINATION (City-Town)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name:</td>
<td>Name:</td>
</tr>
<tr>
<td>Address:</td>
<td>Address:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name of Carrier</th>
<th>Prepaid</th>
<th>Collect</th>
<th>Transport Unit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Point of Origin</th>
<th>Shipping Date</th>
<th>Shipper’s No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>REGULATED DANGEROUS GOODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN Number</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

24-Hour Number: _______________

ERAP Reference _______________ and Telephone Number _______________

**Consignor’s Certification**

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, are properly classified and packaged, have dangerous goods safety marks properly affixed or displayed on them, and are in all respects in proper condition for transport according to the Transportation of Dangerous Goods Regulations.

Name of Consignor: _______________

Special Instructions

<table>
<thead>
<tr>
<th>NON-REGULATED GOODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packages</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Received in apparent good order

C consignee’s Signature

Shipper’s Signature

Received in Apparent Good Order

Driver’s Signature

Driver’s No.

Please note that this sample shipping document contains some information that is not required in the TDG Regulations. The additional information reflects current industry practice.